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"ESTUDIO EN LA DUDA. ACCIÓN EN LA FE"

SUPLEMENTO ESPECIAL

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Revista	**RESULTS IN ENGINEERING**
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Título del Artículo	Urea assisted synthesis of TiO_2–CeO_2 composites for photocatalytic acetaminophen degradation via simplex-centroid mixture design
Autores e instituciones de adscripción	García- Domínguez, AE [1]; Torres-Torres, G [1]; Arévalo- Pérez, JC [1]; Silahua-Pavón, A [1]; Sánchez-Trinidad, C [1]; Godavarthi, S [2]; Ojeda-López, R [3]; Sierra-Gómez, UA [4]; Cervantes-Uribe, A [1]. [1] Universidad Juárez Autónoma de Tabasco, Centro de Investigación de Ciencia y Tecnología Aplicada de Tabasco (CICTAT), DACB, Laboratorio de Nanomateriales Catalíticos Aplicados al Desarrollo de Fuentes de Energía y Remediación Ambiental, Km.1 Carretera Cunduacán, C.P. 86690, A.P. 24, Cunduacán, Jalpa de Méndez, Tabasco, México [2] Investigadoras e Investigadores por México - División Académica de Ciencias Básicas, Universidad Juárez Autónoma de Tabasco, Cunduacán, 86690, Tabasco, México [3] Departamento de Química, Laboratorio de Fisicoquímica de Superficies. Universidad Autónoma Metropolitana–Iztapalapa, Av. San Rafael Atlixco 186, Col. Vicentina, C.P: 09310, Ciudad de México, México [4] Centro de Investigación en Química Aplicada, Enrique Reyna H. 140, San José de Los Cerritos, C.P. 25294, Saltillo, Coahuila, México
Resumen	We studied the effect of urea on TiO_2–CeO_2 and paracetamol photodegradation. The contribution of TiO_2, CeO_2, and urea was analyzed by simplex-centroid mixture. Solid-state combustion at 500 C was the method of synthesis. All samples were characterized by X-ray diffraction, nitrogen adsorption/desorption, Uv spectroscopy, and scanning electron spectroscopy (SEM). According to the results, urea influences particle morphology. Bandgap decreases due to interactions with residual urea carbon. The surface area depended on the crystallinity of the samples. The value of the kinetic constant increased as a function of the amount of urea. The selectivity to CO_2 was the roll of cerium oxide.
Palabras claves	TiO_2, CeO_2, Urea.

Revista	**SOCIAL SCIENCES-BASEL**
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ISSN	eISSN: 2076-0760
DOI	10.3390/socsci11060265
Título del Artículo	Health, Functional Ability, and Environmental Quality as Predictors of Life Satisfaction in Physically Active Older Adults
Autores e instituciones de adscripción	Zapata-Lamana, R [1]; Poblete-Valderrama, F [2]; Ledezma-Dames, A [3]; Pavón-León, P [4]; Leiva, AM [5]; Fuentes-Álvarez, MT [6]; Cigarroa, I [7]; Parra-Rizo, MA [8,9]. [1] Escuela de Educación, Universidad de Concepción, Los Ángeles 4440000, Chile [2] Departamento de Ciencias del Deporte y Acondicionamiento Físico, Facultad de Educación, Universidad Católica de la Santísima Concepción, Concepción 4030000, Chile [3] Centro de Investigación en Gerontología Aplicada (CIGAP), Facultad de Salud, Universidad Santo Tomás, Antofagasta 1240000, Chile [4] Instituto de Ciencias de la Salud, Universidad Veracruzana, Xalapa 91090, México [5] Instituto de Anatomía, Histología y Patología, Facultad de Medicina, Universidad Austral de Chile, Valdivia 5090000, Chile [6] División Académica de Ciencias de la Salud, Universidad Juárez Autónoma de Tabasco, Villahermosa 86150, México [7] Escuela de Kinesiología, Facultad de Salud, Universidad Santo Tomás, Los Ángeles 4440000, Chile [8] Faculty of Health Sciences, Valencian International University—VIU, 46002 Valencia, Spain [9] Department of Health Psychology, Faculty of Social and Health Sciences, Campus of Elche, Miguel Hernandez University (UMH), 03202 Elche, Spain
Resumen	The factors that make physically active older people feel more satisfied in adulthood have not been extensively studied. For this reason, the aim of this work has been to evaluate, among physically active older adults, whether the level of physical activity they perform and the factors that foster their quality of life can be predictors of their satisfaction with life. For this, the IPAQ, CUBRECAVI and LSI-A scales were applied to a sample of 397 people between 61 and 93 years old (M = 69.65, SD = 4.71). The results show that health (β = 0.373), functional abilities (β = 0.159) and environmental quality (β = 0.105) are predictors of satisfaction in the most active adults. In conclusion,neither physical activity (to a greater or lesser extent) nor income are predictive variables of satisfaction with life but, rather, predict some of the components that cement their quality of life (health, fending for themselves and the home environment).
Palabras claves	Life satisfaction, Elderly, Health.

Revista	**WATER**
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ISSN	eISSN: 2073-4441
DOI	10.3390/w14091389
Título del Artículo	Doping of TiO_2 Using Metal Waste (Door Key) to Improve Its Photocatalytic Efficiency in the Mineralization of an Emerging Contaminant in an Aqueous Environment
Autores e instituciones de adscripción	Juárez- Cortázar, DE [1]; Torres-Torres, JG [1]; Hernández- Ramírez, A [2]; Arévalo-Pérez, JC [1]; Cervantes-Uribe, A [1]; Godavarthi, S [1]; de los Monteros, AEE [1]; Silahua-Pavón, AA [1]; Cordero-García, A [1]. [1] Laboratory of Catalytic Nanomaterials Applied to the Development of Energy Sources and Environmental Remediation, Tabasco Applied Science and Technology Research Center (CICTAT), Universidad Juárez Autónoma de Tabasco, DACB, Km.1 Carretera Cunduacán-Jalpa de Méndez, Cunduacán 86690, Tabasco, México. [2] Facultad de Ciencias Químicas, UANL, Universidad Autónoma de Nuevo León, Ciudad Universitaria, San Nicolás de los Garza 66451, Nuevo León, México
Resumen	Photocatalysis is an effective advanced oxidation process to mineralize recalcitrant contaminants in aqueous media. TiO_2 is the most used photocatalyst in this type of process. To improve the deficiencies of this material, one of the most used strategies has been to dope TiO_2 with metallic ions. Chemical reagents are often used as dopant precursors. However, due to the depletion of natural resources, in this work it was proposed to substitute chemical reagents and instead use a metallic residue (door key) as a doping precursor. The materials were synthesized using the sol–gel method and calcined at 400 C to obtain the crystal structure of anatase. The characterization of the materials was carried out using X-ray diffraction (XRD), transmission electron microscopy (TEM), diffuse reflectance spectroscopy (DRS), scanning electron microscopy–energy-dispersive X-ray analysis (SEM-EDX) methods X-ray photoelectron spectroscopy (XPS), and inductively coupled plasma optical emission spectroscopy (ICP-OES). The results obtained indicate that Cu^{+}/Cu^{2+} and Zn^{2+} ions coexist in the support, which modifies the physicochemical properties of TiO_2 and improves its photocatalytic efficiency. The synergistic effect of the dopants in TiO_2 allowed the mineralization of diclofenac in an aqueous medium when T-DK (1.0) was used as photocatalyst and simulated solar radiation as an activation source.
Palabras claves	Emerging contaminant, photocatalysis, TiO_2 doped.

Revista	**JOURNAL OF INORGANIC BIOCHEMISTRY**
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DOI	10.1016/j.jinorgbio.2022.111915
Título del Artículo	Decavanadate and metformin-decavanadate effects in human melanoma cells
Autores e instituciones de adscripción	De Sousa-Coelho, AL [1,2,3]; Aureliano, M [4,5]; Fraqueza, G [5,6]; Serrão, G [1]; Gonçalves, J [7]; Sánchez-Lombardo, I [8]; Link, W [9]; Ferreira, BI [1,2,7]. [1] Univ Algarve, Algarve Biomed Ctr Res Inst ABC RI, Faro, Portugal [2] Algarve Biomed Ctr ABC, Faro, Portugal [3] Univ Algarve, Escola Super Saude ESS, Faro, Portugal [4] Univ Algarve, Fac Ciencias & Tecnol FCT, Faro, Portugal

Autores e instituciones de adscripción	[5] Univ Algarve, Ctr Ciencias Mar CCMar, Faro, Portugal [6] Univ Algarve, Inst Super Engn ISE, Faro, Portugal [7] Univ Algarve, Fac Med & Ciencias Biomed, Faro, Portugal [8] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Básicas, Cunduacán, México [9] Inst Invest Biomed Alberto Sols CS UAM, Madrid, Spain
Resumen	Decavanadate is a polyoxometalate (POMs) that has shown extensive biological activities, including antidiabetic and anticancer activity. Importantly, vanadium-based compounds as well as antidiabetic biguanide drugs, such as metformin, have shown to exert therapeutic effects in melanoma. A combination of these agents, the metformin-decavanadate complex, was also recognized for its antidiabetic effects and recently described as a better treatment than the monotherapy with metformin enabling lower dosage in rodent models of diabetes. Herein, we compare the effects of decavanadate and metformin-decavanadate on Ca^{2+}-ATPase activity in sarcoplasmic reticulum vesicles from rabbit skeletal muscles and on cell signaling events and viability in human melanoma cells. We show that unlike the decavanadate-mediated non-competitive mechanism, metformin-decavanadate inhibits Ca^{2+}-ATPase by a mixed-type competitive–non-competitive inhibition with an IC_{50} value about 6 times higher (87 μM) than the previously described for decavanadate (15 μM). We also found that both decavanadate and metformin-decavanadate exert antiproliferative effects on melanoma cells at 10 times lower concentrations than monomeric vanadate. Western blot analysis revealed that both, decavanadate and metformin-decavanadate increased phosphorylation of extracellular signal-regulated kinase (ERK) and serine/threonine protein kinase AKT signaling proteins upon 24 h drug exposure, suggesting that the anti-proliferative activities of these compounds act independent of growth-factor signaling pathways.
Palabras claves	Decavanadate, Metformin, Metformin-decavanadate.

Revista	**METALS**
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DOI	10.3390/met12061033
Título del Artículo	Corrosion Behavior of Passivated Martensitic and Semi-Austenitic Precipitation Hardening Stainless Steel.
Autores e instituciones de adscripción	Almeraya- Calderón, F [1]; Samaniego-Gámez, O [1]; Maldonado-Bandala, E [2]; Nieves-Mendoza, D [2]; Olguín-Coca, J [3]; Jáquez- Muñoz, JM [1]; Cabral-Miramontes, J [1]; Flores-De los Ríos, JP [4]; Bautista-Margulis, RG [5]; Gaona-Tiburcio, C [1]. [1] Univ Autónoma Nuevo León, FIME Ctr Invest & Innovac Ingn Aeronaut CIIIA, Av. Univ S-N, Ciudad Univ, San Nicolás De Los Garza 66455, Nuevo León, México [2] Univ Veracruzana, Fac Ing. Civil, Xalapa 91000, Veracruz, México [3] Univ Autónoma Estado Hidalgo, Área Acad Ing. & Arquitectura, 42082 Carretera Pachuca Tulancingo Km 4-5, Pachuca 42082, México [4] Tecnol Nacl México, Inst Tecnol Chihuahua, Dept Met Mech, Av. Tecnol 2909, Chihuahua 31130, México [5] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Villahermosa 86040, Tabasco, México
Resumen	This research aimed to conduct a passive layer state study on martensitic and semi-austenitic precipitation hardening stainless steels (PHSS) passivated in citric acid and nitric acid baths at 49 and 70 C for 50 and 75 min and subsequently exposed in 5 wt.% NaCl and 1 wt.% H_2SO_4 solutions. Corrosion behavior of the passivated material was observed by using potentiodynamic polarization (PP) according to the ASTM G5-11 standard. The microstructural analysis was performed by optical microscopy and scanning electron microscopy (SEM), while the passivated layer was characterized by X-ray photoelectron spectroscopy (XPS). The results indicated that the semi-austenitic-NA-50 min-70 C sample showed the best corrosion resistance behavior in both solutions. The XPS characterization confirmed that the martensitic and semi-austenitic surface film presented a mixture of chemical compounds, such as Cr_2O_3 and Fe (OH)O, respectively.
Palabras claves	Martensitic and semi-austenitic, PH stainless steel, Passivation.

Revista	**FOODS**
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Título del Artículo	Application of an Electronic Nose and HS-SPME/GC-MS to Determine Volatile Organic Compounds in Fresh Mexican Cheese
Autores e instituciones de adscripción	Lee-Rangel, HA [1]; Mendoza-Martínez, GD [2]; de León-Martínez, LD [3]; Relling, AE [4]; Vázquez-Valladolid, A [5]; Palacios-Martínez, M [2]; Hernández- García, PA [6]; Chay-Canul, AJ [7]; Flores-Ramírez, R [8]; Roque-Jiménez, JA [2]. [1] Univ Autónoma San Luis Potosí, Ctr Biociencias, Carretera Fed 57 Km 14-5, San Luis Potosí 78321, San Luis Potosí, México [2] Univ Autónoma Metropolitana Xochimilco, Dept Prod Anim, México City 04960, DF, México [3] Univ Autónoma San Luis Potosí, Ctr Invest Aplicada Ambiente & Salud CIAAS, San Luis Potosí 78210, San Luis Potosí, México [4] Ohio State Univ, Ohio Agr Res & Dev Ctr OARDC, Dept Anim Sci, Wooster, OH 44691 USA [5] Univ Autónoma San Luis Potosí, Fac Agron & Vet, Carretera Fed 57 Km 14-5, San Luis Potosí 78321, San Luis Potosí, México [6] Univ Autónoma Estado México, Ctr Univ UAEM Amecameca, Amecameca 56900, Estado De México, México [7] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Agr, Km 25, R-A Huasteca 2a Secc, Villahermosa 86280, Tabasco, México
Resumen	Electronic devices have been used to describe chemical compounds in the food industry. However, there are different models and manufacturers of these devices; thus, there has been little consistency in the type of compounds and methods used for identification. This work aimed to determine the applicability of electronic nose (e-nose) Cyroanose 320 to describe the differentiation of volatile organic compounds (VOCs) in fresh Mexican cheese (F-MC) formulated with milk from two different dairy cattle breeds. The VOCs were described using a device manufactured by Sensigent and Solid-Phase Micro-extraction (SPME) coupled to GC-MS as a complementary method. The multivariate principal components analysis (PCA) and the partial least squares discriminant analysis (PLS-DA) were used to describe the relationships of VOCs to electronic nose data, sensory data, and response levels. In addition, variable importance in projection (VIP) was performed to characterize the e-nose signals to the VOCs. The e-nose distinguishes F-MC prepared with milk from two dairy breeds. Sensor number 31 correlated with carboxylic acids most in F-MC from Jersey milk. The HS-SPME/GC-MS identified eighteen VOCs in F-MC made with Holstein milk, while only eleven VOCs were identified for F-MC made with Jersey milk. The more significant peaks in both chromatogram analyses were Propanoic acid, 2-methyl-, 1-(1,1-dimethylethyl)-2-methyl-1,3-propanediyl ester in cheese made from Holstein milk and Propanoic acid, 2-methyl-, 3-hydroxy-2,4,4-trimethylpentyl ester in Jersey milk cheese. Both compounds are considered essential carboxylic acids in the dairy industry. Thus, sensor 31 in the electronic nose Cyranose 320 increased its response by essential carboxylic acids identified by HS-SPME/GC-MS as a complementary method. The e-nose Cyranose 320 is potentially helpful for evaluating fresh Mexican cheese authentication independent of cows' milk samples from different breeds.
Palabras claves	VOCs, Sensors, GC-MS.

Revista	**ISRAEL MEDICAL ASSOCIATION JOURNAL**
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Número	5
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Título del Artículo	Risk Factors and Outcomes for COVID-19 in Autoimmune Inflammatory Diseases during the SARS-CoV-2 Pandemic: A Comparative Study.
Autores e instituciones de adscripción	Vera-Lastra, O [1,2,3]; Cimé-Aké, E [1,2]; Navarro, AO [1,2]; Morales-Gutiérrez, JE [1,2,4]; Cobos-Quevedo, OD [1,2]; Hurtado-Díaz, J [1,2]; Espinoza-Sánchez, ML [1,2,5]; Peralta-Amaro, AL [1,2,3]; Cruz-Domínguez, MP [3,6]; Medina, G [3,7]; Fraga-Mouret, A[9]; Sepúlveda-Delgado, J [8]; Jara, LJ [3,6]. [1] Antonio Fraga Mouret Natl Med Ctr, Dept Internal Med & Pathol Anat, México City, DF, México

Autores e instituciones de adscripción	[2] Antonio Fraga Mouret Natl Med Ctr, High Specialty Med Unit, México City, DF, México [3] Natl Univ Autonomous México, Fac Med, Dept Postgrad Studies, México City, DF, México [4] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México [5] Hosp Gen Reg 251 Metepec, Dept Internal Med, Metepec, Mexico [6] IMSS, Ctr Med Raza, Res Div, Hosp Especialidades, México City, DF, México [7] IMSS, Ctr Med Raza, Translat Res Unit, Hosp Especialidades, México City, DF, México [8] Hosp Reg Alta Especialidad, Tapachula, Chiapas, México [9] Univ St Luck, Sch Med, Mexico City, DF, Mexico
Resumen	Background: Patients with autoimmune disease (AID) and coronavirus disease 2019 (COVID-19) could have higher mortality due to the co-morbidity and the use of immunosuppressive therapy. Objectives: To analyze the risk factors and outcomes of patients with AID and COVID-19 versus a control group. Methods: A prospective cohort study included patients with and without AID and COVID-19. Patients were paired by age and sex. Clinical, biochemical, immunological treatments, and outcomes (days of hospital stay, invasive mechanical ventilation [IMV], oxygen at discharge, and death) were collected. Results: We included 226 COVID-19 patients: 113 with AID (51.15 ± 14.3 years) and 113 controls (53.45 ± 13.3 years). The most frequent AIDs were Rheumatoid arthritis (26.5%), systemic lupus erythematosus (21%), and systemic sclerosis (14%). AID patients had lower lactate dehydrogenas, C-reactive protein, fibrinogen, IMV (P = 0.027), and oxygen levels at discharge (P ≤ 0.0001) and lower death rates (P ≤ 0.0001). Oxygen saturation (SaO_2) ≤ 88% at hospitalization provided risk for IMV (RR [relative risk] 3.83, 95% confidence interval [95%CI] 1.1–13.6, P = 0.038). Higher creatinine and LDH levels were associated with death in the AID group. SaO_2 ≤ 88% and CO-RADS ≥ 4 were risk factors for in-hospital mortality (RR 4.90, 95%CI 1.8–13.0, P = 0.001 and RR 7.60, 95%CI 1.4–39.7, P = 0.016, respectively). Anticoagulant therapy was protective (RR 0.36, 95%CI 0.1–0.9, P = 0.041) Conclusions: AID and COVID-19 patients had better outcomes than controls. Anticoagulation was associated with a lower death in patients with AID.
Palabras claves	Autoimmune/inflammatory diseases, Autoimmunity, Coronavirus disease 2019 (COVID-19).

Revista	**JOURNAL OF COMPOSITES SCIENCE**
Volumen	6
Número	1
ISSN	ISSN: 2504-477X
DOI	10.3390/jcs6010004
Título del Artículo	Platinum-Decorated TiO_2: One Step Fast Monometallic Impregnation and Plasma Effect on Nanoparticles
Autores e instituciones de adscripción	Trejo-Tzab, R [1]; Ávila-Ortega, A [1]; Quintana-Owen, P [2]; Rangel, R [3]; Álvarez-Lemus, MA [4]. [1] Univ Autónoma Yucatán, Fac Ingn Quim, Mérida 97203, Yucatán, México [2] CINVESTAV, Unidad Mérida, Dept Fis Aplicada, AP 73, Mérida 97310, Yucatán, México [3] Univ Michoacana SNH, Fac Ingn Quim, Morelia 58060, Michoacán, México [4] Univ Juárez Autónoma Tabasco, Div Acad Ingn & Arquitectura, Lab Nanotecnol, Cunduacán 86690, Tabasco, México
Resumen	In the present work, N-TiO_{2-x}/Pt was synthesized using a homemade nitrogen plasma (AC) discharge system. The overall procedure use of low-power nitrogen plasma (100 watts) with 1 and 2 h of plasma discharge to successfully impregnate platinum nanoparticles on P25 titanium dioxide. The obtained samples were characterized using X-ray diffraction (XRD), UV–Vis diffuse reflectance spectroscopy (DRS), X-ray photoelectron spectroscopy (XPS), and high-resolution transmission electron microscopy (HRTEM). The results reveal the incorporation of metallic Pt up to 2.9% on the surface of TiO_2 by increasing the duration of plasma discharge by up to two hours with a constant power of 100 watts. Likewise, the incorporation of nitrogen atoms into a lattice crystal was also favored, confirming a direct relationship between the amount of Pt and nitrogen atoms introduced in TiO_2 as a function of the duration of plasma treatment. By characterizing nanoparticles

Resumen	loaded on a N-TiO_{2-x}/Pt surface, we show that joined platinum nanoparticles have two different patterns, and the boundary between these two regions coalesces. The results demonstrate that the use of nitrogen plasma to impregnate platinum nanoparticles on the surface of TiO_2 to obtain N-TiO_{2-x}/Pt allows wide and relevant physics and chemistry applications.
Palabras claves	Metal-decorated, N-doped TiO_2, Chemical deposition.

Revista	**MOLECULES**
Volumen	27
Número	14
ISSN	eISSN: 1420-3049
DOI	10.3390/molecules27144659
Título del Artículo	Piperidine-Iodine as Efficient Dual Catalyst for the One-Pot, Three-Component Synthesis of Coumarin-3-Carboxamides
Autores e instituciones de adscripción	Velasco, M [1]; Romero-Ceronio, N [1]; Torralba, R [2]; Abreu, OH [1]; Vilchis-Reyes, MA [1]; Alarcón-Matus, E [1]; Ramos-Rivera, EM [1]; Aparicio, DM [3]; Jiménez, J [4]; García, EA [4]; Cruz, DC [5]; Gómez, CV [5]; Alvarado, C [1]. [1] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Básicas, Carretera Cunduacán Jalpa Km 1, Cunduacán 86690, Tabasco, México [2] Benemérita Univ Autónoma Puebla, Complejo Reg Mixteca, Campus Izucar Matamoros, Carr Atlixco Izucar Matam, Puebla 74570, México [3] Benemérita Univ Autónoma Puebla, Inst Ciencias, Edif IC 9 Complejo De Ciencias CU, Puebla 72570, México [4] Benemérita Univ Autónoma Puebla, Fac Ciencias Quim, Puebla 72570, México [5] Univ Guanajuato, Dept Quim, Div Ciencias Naturales y Exactas, Noria Alta S-N, Guanajuato 36050, México
Resumen	A simple and efficient one-pot, three-component synthetic method for the preparation of coumarin-3-carboxamides was carried out by the reaction of salicylaldehyde, aliphatic primary/secondary amines, and diethylmalonate. The protocol employs piperidine-iodine as a dual system catalyst and ethanol, a green solvent. The main advantages of this approach are that it is a metal-free and clean reaction, has low catalyst loading, and requires no tedious workup.
Palabras claves	Multicomponent reaction, Molecular iodine, Coumarin-3-carboxamides.

Revista	**EXPERIMENTAL PARASITOLOGY**
Volumen	240
Número	n/a
ISSN	ISSN: 0014-4894 eISSN: 1090-2449
DOI	10.1016/j.exppara.2022.108336
Título del Artículo	*In vitro* ovicidal activity of *Brongniartia montalvoana* against small ruminant gastrointestinal nematodes
Autores e instituciones de adscripción	Cortes-Morales, JA [1]; Olmedo-Juárez, A [2]; González- Cortázar, M [3]; Zamilpa, A [3]; López-Arellano, MA [2]; Blé- González, EA [4]; Tapia- Maruri, D [5]; Flores-Franco, G [1]; Salinas-Sánchez, DO [1] [1] Univ Autónoma Estado Morelos, Lab Fitoquim & Prod Nat, Ctr Invest Biodivers & Conservac, Ave Univ 1001, Cuernavaca 62209, Morelos, México [2] INIFAP, Ctr Nacl Invest Disciplinaria Salud Anim & Inocu C, Carretera Fed Cuernavaca Cuautla 8534 Col Progreso, Jiutepec 62550, Morelos, México [3] Inst Mexicano Seguro Social, Ctr Invest Biomed, Argentina 1 Col Ctr, Xochitepec 62790, Morelos, México [4] Univ Juárez Autónoma Tabasco, Carretera Cunduacán Jalpa Km 0-5, Cunduacán 86690, Tabasco, México [5] Inst Politecn Nacl, Ctr Desarrollo Prod Biot, Dept Biotecnol, POB 24, Yautepec 62730, Morelos, México
Resumen	Several plants of the Fabaceae family have been assessed regarding their high nutritional value and anthelmintic properties. The ovicidal effect of the hydroalcoholic extract (Bm-HAE) and subfractions from the aerial parts of *Brongniartia montalvoana* (Fabaceae) against a mixed strain of gastrointestinal nematodes

Resumen	(GIN) (Haemonchus spp., Trichostrongylus spp. and Oesophagostomum spp.) resistant to albendazole sulfoxide, ivermectin and levamisole was evaluated by the egg hatch test (EHT). The Bm-HAE was subjected to liquid-liquid chemical separation with ethyl acetate giving two fractions, an aqueous (Bm-Aq) and an organic (Bm-EtOAct). The purification of the bioactive fraction (Bm-EtOAct) through chromatographic separation resulted in four bioactive subfractions (BmR6, BmR7, BmR8 and BmR10). The treatments were designed as follows: Bm-HAE at 800, 1,500, 3,000 and 6,000 µg/mL, and Bm-Aq, Bm-EtOAct and subfractions (BmR6, BmR7, BmR8 and BmR10) at 100, 200, 400 and 800 µg/mL. Two properly negative controls (distilled water and 2% methanol) and thiabendazole (100 µg/mL) as a positive control were used for each bioassay. The chemical identification of the extract, fractions and subfractions was performed through chromatographic processes like open column chromatography, thin-layer chromatography (TLC) and high-performance liquid chromatography (HPLC-PDA). Additionally, the GIN eggs exposed to the bioactive compounds were observed through confocal laser scanning microscopy (CLSM). The Bm-HAE showed 99.5% egg hatching inhibition (EHI) at 6,000 µg/mL with a lethal concentration (LC_{50}) of 1110 µg/mL. The Bm-EtOAc fraction displayed 99.1% EHI at 800 µg/mL with LC_{50} = 180 µg/mL. The ovicidal activity of the four subfractions was similar at 800 µg/mL: BmR6 (92% EHI); BmR7 (100% EHI); BmR8 (97.8%); and BmR10 (99.1%). The HPLC-PDA analysis of the bioactive subfractions allowed identification of p-coumaric acid, ferulic acid and coumarin derivatives as major compounds. The CLSM analysis allowed observation of morphological alterations in unhatched larvae caused by bioactive compounds present in the Bm-EtOAc and BmR10. In addition, the flavonoids eriodyctiol, luteolin and cynaroside were described for the first time for *B. montalvoana.*
Palabras claves	Brongniartia montalvoana leaves, Egg hatch test, Ovicidal activity.

Revista	**AMERICAN JOURNAL OF PHYSICAL MEDICINE & REHABILITATION**
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ISSN	ISSN: 0894-9115 eISSN: 1537-7385
DOI	10.1097/PHM.0000000000001918
Título del Artículo	Hypertonic Dextrose Prolotherapy, an Alternative to Intra-Articular Injections with Hyaluronic Acid in the Treatment of Knee Osteoarthritis Systematic Review and Meta-analysis
Autores e instituciones de adscripción	Arias-Vázquez,PI [1]; Tovilla-Zárate, CA [1]; Castillo-Ávila, RG [2]; Legorreta-Ramírez, BG [3]; López- Narváez, ML [4]; Arcila-Novelo, R [5]; González-Castro, TB [6]. [1] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Comalcalco, Cuarta Secc, Comalcalco 86650, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Salud, Av. Gregorio Méndez Magaña 2838-A, Villahermosa 86100, Tabasco, México [3] Ctr Rehabil Infantil Teletón, Subdirecc Med Clin, Tlalnepantla, Estado De México, México [4] Hosp Chiapas Nos Dr. Gilberto Gómez Maza, secretaria Salud Chiapas, Tuxtla Gutiérrez, Chiapas, México [5] Univ Autónoma Yucatán, Mérida, Yucatán, México [6] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Jalpa de Méndez, Jalpa de Méndez, Tabasco, México
Resumen	Intra-articular injections with hyaluronic acid are recommended in the treatment of knee osteoarthritis; however, hypertonic dextrose prolotherapy has been reported as effective and safe. The aim was to evaluate the effectiveness of hypertonic dextrose prolotherapy for pain reduction and improvement of function in individuals with knee osteoarthritis in comparison with hyaluronic acid by meta-analysis. The search was performed in electronic databases. Six studies were included (395 participants). No statistically significant differences were found between prolotherapy and hyaluronic acid in pain control in the short-term; however, in the subanalysis that included only the studies that used intra-articular injection within the prolotherapy scheme, an effect was found in favor of the prolotherapy groups (d = −1.33; 95% confidence interval, −2.50 to −0.16; P (z) = 0.03). Also, an effect was found in favor of the prolotherapy group in the improvement in function (d = −1.05; 95% confidence interval, −2.03 to −0.08; P (z) = 0.03). No major adverse reactions or side effects were reported in any of the studies. Hypertonic dextrose

Resumen	prolotherapy seems to be an effective intervention to decrease pain and improve function in knee osteoarthritis, with efficacy similar to intra-articular injections with hyaluronic acid in the short-term follow-up. Nonetheless, better-quality clinical trials are necessary.
Palabras claves	Hyaluronic Acid, Osteoarthritis, Knee.

Revista	**RESTORATION ECOLOGY**
Volumen	30
Número	8
ISSN	ISSN: 1061-2971 eISSN: 1526-100X
DOI	10.1111/rec.13639
Título del Artículo	Do surfactants influence the growth of *Rhizophora mangle* during restoration of contaminated soil with emulsified oil?
Autores e instituciones de adscripción	Ojeda-Morales, ME [1,2]; Domínguez- Domínguez, M [3]; Herrera-Haro, JG [4]; Hernández-Rivera, MA [2]; Córdova-Bautista, Y [2]; Martínez-Zurimendi, P [5,6]. [1] Colegio Postgrad, Postgrad Doctorate Res Sci, Campus Tabasco, Perifer Carlos A Molina Km 3-5, Cárdenas 86500, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Biotechnol Lab, Carretera Cunduacán Jalpa Km 1 Colonia Esmeralda, Cunduacán 86400, Tabasco, México [3] Colegio Postgrad, Campus Tabasco, Perifer Carlos A Molina Km 3-5, Cárdenas 86500, Tabasco, México [4] Colegio Postgrad, Campus Montecillo, Texcoco 56230, Estado De, México [5] Colegio Frontera Sur, Unidad Villahermosa, Carretera Villahermosa Reforma Km 15-5, Villahermosa 86280, Tabasco, México [6] Univ Valladolid, Inst Univ Invest & Gest Forestal Sostenible IUFOR, INIA, Avda. Madrid 57, Palencia 34004, Spain
Resumen	Mangrove forests are ecosystems subject to contamination by oil spills. The objective of this study was to evaluate the development of *Rhizophora mangle* plants in soil contaminated with oil emulsified with surfactants. These ecosystems have diverse and economically valuable ecological functions. Mangrove soil and propagules were collected in southeastern Mexico. The propagules were sown under greenhouse conditions and the plants were grown for 3 months. Two bioassays were applied: (1) the soil was contaminated by oil emulsified with a biosurfactant synthesized by *Azospirillum lipoferum*, and (2) the soil was contaminated with oil emulsified with a surfactant based on pine essential oil. Emulsified oil was applied to the substrate in containers with 3-month-old plants until several concentrations were reached (0, 30,000, 40,000, 50,000, 60,000, and 70,000 ppm). Subsequently, 5 plants for each treatment were randomly extracted every 30 days for 12 months, and the stem length and diameter, root length, leaf area, and fresh and dry weights of the plants were evaluated. Plant development was evaluated through an analysis of variance and a test of means. At the end of the bioassay, the treatments with oil emulsified with pine oil yielded no surviving plants, whereas the treatments with oil emulsified with the biosurfactant yielded a 100% survival rate. Treatment with 30,000 ppm of oil emulsified with the biosurfactant yielded the greatest increases in the leaf area and total dry biomass. The heavy oil fraction concentration decreased by 93.9% with the 30,000-ppm treatment and by 82.64% with the 70,000-ppm treatment.
Palabras claves	Oil spill, Red mangrove, Surfactant.

Revista	**DATA IN BRIEF**
Volumen	43
Número	n/a
ISSN	ISSN: 2352-3409
DOI	10.1016/j.dib.2022.108410
Título del Artículo	Data that support the use of agro-industrial residues from orange peel and sugarcane bagasse for the production of carbonaceous structures and their application in the removal of metal ions

Autores e instituciones de adscripción	Licona-Aguilar, AI [1,4]; Torres-Huerta, AM [2]; Domínguez-Crespo, MA [2]; Palma-Ramírez, D [3]; Conde-Barajas, E [4]; Negrete-Rodríguez, MXL [4]; Rodríguez-Salazar, AE [5]; García- Zaleta, DS [6]. [1] Inst Politecn Nacl, CICATA Altamira, CIAMS, Km 14-5 Carretera Tampico Puerto Ind Altamira, México City 07738, DF, México [2] Inst Politecn Nacl, UPIIH, Ciudad Conocimiento & Cultura, Carretera Pachuca Actopan Km 1 500, San Agustín Tlaxicala 42162, Hidalgo, México [3] Inst Politecn Nacl, Ctr mexicano Prod Mas Limpia CMPL, Av. Acueducto S-N, México City 07340, DF, México [4] TecNM IT Celaya, Dept Ingn Ambiental, Dept Ingn Bioquim, Av. Tecnol & A García Cubas 600, Guanajuato 38010, México [5] Inst Politecn Nacl, CICATA Querétaro, Cerro Blanco 141, Santiago De Querétaro, Querétaro, México [6] Univ Juárez Autónoma Tabasco, Carretera Estatal Libre Villahermosa Comalcalco, Villahermosa 86205, Tabasco, México
Resumen	This document contains additional information for the production of activated carbons (AC) and carbon foams (CF) from agroindustrial wastes, orange peel (OP) and sugarcane bagasse (SCB). In particular, a set of data is presented for the characterization of carbonaceous structures (AC and CF) and their application in the removal of metallic ions contained in polluted waters. The adsorbent materials were obtained combining chemical and physical activation processes. Data presented here included characterization of AC and CF using dynamic light scattering (DLS), BET (Brunauer, Emmet and Teller) surface area analysis, Barrett-Joyner-Halenda (BJH) method to assess pore size distribution and zeta potential (ζ) to evaluate electrokinetic potential of carbonaceous structures. In addition, energy dispersive spectroscopy (SEM/EDS) to identify heavy metals on the surface of carbonaceous materials is shown and complementary adsorption capacity data for metal ion removal are presented in the paper. The data can be used as a reference to promote reuse of agroindustrial wastes and provide added value; particularly for the synthesis of carbonaceous structures applied to the water purification.
Palabras claves	Activate carbons, Carbon foams, Heavy metal ions removal.

Revista	**JOURNAL OF COLLOID AND INTERFACE SCIENCE**
Volumen	622
Número	n/a
ISSN	ISSN: 0021-9797 eISSN: 1095-7103
DOI	10.1016/j.jcis.2022.04.114
Título del Artículo	CeO_{2-x} quantum dots decorated nitrogen-doped hollow porous carbon for supercapacitors
Autores e instituciones de adscripción	Kar, T [1]; Casales-Díaz, M [1]; Ramos-Hernández, JJ [1]; Sotelo-Mazón, O [2,3]; Henao, J [4]; Rodríguez, SV [1]; Godavarthi, S [5]; Liu, SD [6]; Yamauchi, Y [6,7]; Kesarla, MK [1]. [1] Univ Nacl Autónoma México, Labs Ciencia Mat Biofis & Ciencia Mat, Inst Ciencias Fis, Ave Univ S-N, Cuernavaca 62210, Morelos, México 2 FCQel UAEM, Fac Ciencias Quim & Ingn, Ave Univ 1001, Cuernavaca 62209, Morelos, México 3 CIICAp UAEM, Ctr Invest Ingn & Ciencias Aplicadas, Ave Univ 1001, Cuernavaca 62209, Morelos, México 4 CONACyT CIATEQ AC, Ave Manantiales 23-A, Parque Ind Bernardo Quintana, El Marques 76246, Querétaro, México 5 Univ Juárez Autónoma Tabasco, Ctr Invest Ciencia & Tecnol Aplicada Tabasco CICTA, CONACYT, Cunduacán 86690, Tabasco, México 6 Natl Inst Mat Sci, JST ERATO Yamauchi Mat Space Tecton Project, 1-1 Namiki, Tsukuba, Ibaraki 3050044, Japan 7 Univ Queensland, Australian Inst Bioengn & Nanotechnol AIBN, Brisbane, Qld 4072, Australia
Resumen	The pseudocapacitive properties of CeO_2 are largely dependent on its surface Faradaic redox reaction kinetics; however, its electrochemical performance is still limited by the low utilization due to the inefficient diffusion freeways and the limited active sites. Herein, we prepare a 0D/3D composite composed of oxygen-deficient CeO_2 quantum dots (0D) anchored on a 3D hollow porous N-doped carbon framework (CeO_{2-x} QD@PHC) via a facile template-confined strategy followed by a chemical co-precipitation. The refined QDs and hollow structure greatly shorten the ion diffusion paths and lower the internal strain during cycling. The integration of CeO_{2-x} QDs with PHC structure endows enriched accessible active sites and enhances the electrical properties. As a result, the optimized CeO_{2-x} QD@PHC exhibits an improved specific capacitance and good rate performance in comparison to those of the CeO_{2-x}-free PHC. Moreover, a symmetric supercapacitor with CeO_{2-x} QD@PHC as an electrode is constructed, delivering a high energy density of 3.874 Wh kg^{-1} at a power density of 149.98 W kg^{-1}.
Palabras claves	3D architecture, Fast diffusion kinetics, Supercapacitors.

Revista	**CHAOS SOLITONS & FRACTALS**
Volumen	157
Número	n/a
ISSN	ISSN: 0960-0779 eISSN: 1873-2887
DOI	10.1016/j.chaos.2022.111921
Título del Artículo	Biological control in a simple ecological model via subcritical Hopf and Bogdanov-Takens bifurcations.
Autores e instituciones de adscripción	Chan-López, E [1]; Castellanos, V [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Km 1, Carretera Cunduacán Jalpa de Méndez, Cunduacán 86690, Tabasco, México
Resumen	Parasitoids are ubiquitous in nature and they play a fundamental role in the equilibrium of ecosystems. Their interactions with other species are particularly crucial for agricultural activities, since they act as a biological control of invasive hosts. In this paper we study Hopf, generalized Hopf and nondegenerate Bogdanov-Takens bifurcations in a simple model which describes the biological control of invasive species through predation by generalist parasitoids. We assume logistic growth for the generalist parasitoid in the absence of host species, and their interaction is described by a Holling type II functional response. We determine a geometric condition which characterizes local bifurcations associated with the appearance of periodic orbits. Further, we find conditions on the parameters which yield to the extinction of the host species, independently of the initial conditions and the charge capacity of the generalist parasitoid. Our results are supported by numerical examples.
Palabras claves	Host-Generalist parasitoid model, Hopf bifurcation, Bogdanov-Takens bifurcation.

Revista	**MICROORGANISMS**
Volumen	10
Número	7
ISSN	eISSN: 2076-2607
DOI	10.3390/microorganisms10071264
Título del Artículo	Bacteria Halotolerant from Karst Sinkholes as a Source of Biosurfactants and Bioemulsifiers.
Autores e instituciones de adscripción	Desena, FM [1]; Ceferino, ND [1]; Cornelio, SG [2]; Villagómez, CA [1]; Candelario, JLH [1]; García, SD [1] [1] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Biol, Carr Villahermosa Cárdenas Km 0-5, Villahermosa 86150, Tabasco, México [2] Univ Politecn Ctr, Ingn Biotecnol, Carretera Fed, Villahermosa Teapa Km 22-5, Villahermosa 86290, Tabasco, México
Resumen	Halotolerant bacteria with biosurfactant (BS) and bioemulsifiers (BE) activity can coexist in Karstic sinkholes with marine influence. Two sinkholes in the Yucatan peninsula were selected to isolate bacteria with BE and BS activity stable in NaCl. The optimal time, the effect of nitrogen and carbon source in the medium, and the conditions (agitation, pH and salinity) for the production of BS and BE compounds in planktonic and sessile (stimulate the formation of biofilms in cell roller) culture were determined. Eighty strains showed the highest emulsification activity (EI_{24} ≥ 50%) and drop-collapse ≥ 4 mm. 87% of the strains are moderately halotolerant, and 21% bordered the limit of extreme halotolerance. Twenty-four strains maintained or improved their BS and BE activity under salinity conditions at 5% and 10%, being the most active genera *Bacillus*, *Paenibacillus* and *Lysinibacillus*, identified by sequencing of the 16S rRNA gene. The results show that the nitrogen

Resumen	source positively affects the BS and BE activity, regardless of the type of culture. The sessile culture markedly stimulated BS activity with significant differences. However, we did not find a greater influence on the culture conditions. The results suggest that halotolerant bacteria from sinkholes could be implemented in bioremediation and other biotechnological applications.
Palabras claves	Halotolerance, bioremediation, optimization.

Revista	**JOURNAL OF ETHNOPHARMACOLOGY**
Volumen	288
Número	n/a
ISSN	ISSN: 0378-8741 eISSN: 1872-7573
DOI	10.1016/j.jep.2022.114996
Título del Artículo	Anti-arthritic and anti-inflammatory effects of *Baccharis conferta* Kunth in a kaolin/carrageenan-induced monoarthritis model.
Autores e instituciones de adscripción	Gutiérrez- Román, AS [1,2]; Trejo-Tapia, G [1]; González- Cortázar, M [2]; Jiménez-Ferrer, E [2]; Trejo-Espino, JLA [1,3]; Zamilpa, A [2]; Blé-González, E [3]; Camacho-Díaz, BH [1]; Herrera-Ruiz, M [2]. [1] Inst Politecn Nacl, Ctr Desarrollo Prod Biot, Morelos 62731, México [2] Inst Mexicano Seguro Social, Ctr Invest Biomed, Morelos 62790, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Cunduacán 86690, Tabasco, México
Resumen	Ethnopharmacological relevance: Popularly known as *"escoba"* (broom) or *"escobilla china"* (Chinese brush), *Baccharis conferta* Kunth (Asteraceae), is a plant widely used in Mexican folk medicine for alleviating muscular and rheumatic pain. A recent study described that dichloromethane extract as well as fractions and isolated compounds, possess anti-inflammatory activity in TPA-induced acute edema. Aim of the study: Based on the popular medicinal uses of *B. conferta* as well as previous studies on its anti-inflammatory activity, the aim of this research was to evaluate the anti-arthritic and anti-inflammatory effects of dichloromethane extract, fractions, and compounds from *B. conferta* in a monoarthritis model induced with kaolin/carrageenan (K/C). Materials and methods: Aerial parts of *B. conferta* were collected, dried, and macerated with dichloromethane. The dichloromethane extract (BcD) was separated by open column chromatography to obtain the BcD2 fraction where the diterpene kingidiol (KIN) was isolated and from the BcD3 fraction the flavonoid cirsimaritin (CIR), which are the most active compounds in the TPA model. In addition, the flavonoids acacetin, pectolinaringenin and 6-methoxykaempferide were identified and isolated from the BcD2 fraction. The content of the main compounds was estimated in BcD, BcD2 and BcD3. The anti-arthritic and anti-inflammatory effects of *B. conferta* were investigated by evaluating ankle joint inflammation, hyperalgesia using the hot plate test, and pro- and anti-inflammatory cytokine levels in the synovial capsule as well as histological changes in ankle joint tissue in a monoarthritis model induced with K/C in Balb/c mice. Results: Oral administration of BcD2 fraction (25 mg/kg) and KIN (10 mg/kg) reduced the ankle thickness induced by K/C and decreased the levels of TNF-α, IL-1β, IL-6 and IL-17, while BcD2 increased IL-10. In addition, BcD2 and KIN showed significant edema attenuation of the synovial membrane and decreased inflammatory infiltration and cartilage erosion compared to the VEH group. Finally, BcD (50 mg/kg), KIN (10 mg/kg) and CIR (5 mg/kg) decreased hyperalgesia. Conclusions: *B. conferta* constitutes a therapeutic or preventive candidate for osteoarthritis, because of decreased articular inflammation and pain accompanied with the modulation of cytokine concentrations, which confirms the anti-arthritic and anti-inflammatory activities of *B. conferta* and support its popular use.
Palabras claves	Kingidiol, Osteoarthritis, Thermal hyperalgesia.

Revista	**WATER**
Volumen	14
Número	23
ISSN	eISSN: 2073-4441
DOI	10.3390/w14233931
Título del Artículo	Water Quality Indicators in Three Surface Hydraulic Connection Conditions in Tropical Floodplain Lakes
Autores e instituciones de adscripción	Salcedo, MA [1]; Cruz-Ramírez, AK [1]; Sánchez, AJ [1]; Álvarez-Pliego, N [1]; Florido, R [1]; Ruiz-Carrera, V [1]; Morales-Cuetos, SS [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Diagnost & Manejo Humedales Trop, Villahermosa 86040, Tabasco, México
Resumen	Water quality indicators have been tied to natural or man-made surface hydraulic connection (SHC) conditions. Among these, temporally connected lakes (TCL) are hydraulic intermediates between isolated (IL) and permanently connected lakes (PCL). Therefore, the aim of this study is to answer if water quality indicators can estimate the possible overlap between the two opposed conditions of SHC (IL and PCL) with the intermediate one (TCL) in lakes with similar modifications in the water level regulation at the basin level. Among nine water variables sampled in six lakes with the three SHC conditions mentioned, chlorophyll a (Chl-*a*), Secchi disk (SD), and total phosphorus (TP) were identified as quality water indicators through principal component analysis. Furthermore, said indicators were used to measure their overlap and trophic state index deviations. The Chl-*a*, SD, and TP values in TCL showed a 0.72 overlap of PCL and IL. TP surplus measured in all the lakes was meaningful in urbanized ILs and lessened in a rural lake (PCL6) with submerged rooted macrophytes. The estimated overlap of trophic indicators between TCL, IL, and PCL in this study must be verified at a global representative scale for predictive and preventive use in the conservation of tropical coastal plain lakes.
Palabras claves	Environmental impact, Overlapped indicators, Physicochemical homogenization.

Revista	**REVISTA CHAPINGO SERIE CIENCIAS FORESTALES Y DEL AMBIENTE**
Volumen	28
Número	n3
ISSN	ISSN: 2007-3828 eISSN: 2007-4018
DOI	10.5154/r.rchscfa.2022.01.001
Título del Artículo	Vegetation cover and land use change (1947-2019) in the region of Los Rios, Tabasco, Mexico
Autores e instituciones de adscripción	Ramírez- García, AR [1]; Zavala-Cruz, J [1]; Rincón- Ramírez, JA [1]; Guerrero-Peña, A [1]; García- López, E [1]; Sánchez- Hernández, R [2]; Castillo-Acosta, O [3]; Alfaro-Sánchez, G [4]; Ortiz-Pérez, MA [4]. [1] Colegio Postgrad, Campus Tabasco, Perifer Carlos A Molina S-N Km 3, Cárdenas 86500, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Agr, Carretera Villahermosa Teapa Km 25 2, Villahermosa 86298, Tabasco, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Carretera Villahermosa Cárdenas Km 0-5, Villahermosa 86150, Tabasco, México [4] Univ Nacl Autónoma México, Inst Geog, Av. Univ 3000, Ciudad De México 04510, México E-mail Addresseszavala_cruz@colpos.mx
Resumen	Introduction: The spread of agricultural use leads to changes in vegetation cover, loss of biodiversity and ecosystem services. Objective: To analyze land use change and its effect on natural vegetation in the region of Los Ríos, Tabasco, Mexico, during the period 1947-2019. Materials and methods: A total of 14 land use and vegetation classes were identified using aerial photographs from 1947 and supervised classification of

Resumen	satellite images, verifying those from 1947 to 2000 with published cartography and those from 2019 (Landsat 8) in the field. Land use and vegetation cover change was analyzed by overlaying and comparing the maps with the Land Change Modeler module integrated in the TerrSet program. Results and discussion: In 72 years, natural vegetation was mostly replaced by crops, grassland and forest plantations, followed by human settlements. These uses, together, represented 14.2 % of the region's surface and increased to 61.8 %; that is, an increase of 435 %. These uses replaced areas of rainforest, secondary vegetation and hydrophytes, which went from 82.3 % to 29.7 %, representing a loss of 64 % of these coverages. Between 1947 and 1984, natural vegetation suffered the greatest loss of area (53.7 %). Conclusions: The loss of natural vegetation in the region occurred because of the increase in agricultural land and human settlements. The increase in agricultural land was driven by government programs without considering the environmental factor.
Palabras claves	Agricultural crops, Grassland, Human settlements.

Revista	**REVISTA INTERNACIONAL DE CONTAMINACION AMBIENTAL**
Volumen	38
Número	n/a
ISSN	ISSN: 0188-4999
DOI	10.20937/RICA.54244
Título del Artículo	Uv-vis detection of sexual differentiation markers in hydroethanolic extracts of *Vallisneria americana*
Autores e instituciones de adscripción	Jiménez- Pérez, MC [1]; Bautista- Regil, J [1]; Hernández-Piedra, G [1]; Gamboa-Angulo, M [2]; Sánchez, AD [1]; Ruiz-Carrera, V [1]. [1] Univ Juárez Autónoma Tabasco, Ctr Invest Conservac & Aprovechamiento Recursos T, Div Acad Ciencias Biol, Km 0-5 Carretera Villahermosa Cárdenas, Villahermosa Tabasco 86150, México [2] Ctr Invest Cient Yucatán, Calle 43 130 32 & 30, Mérida 97205, Yucatán, México
Resumen	The sexuality of submerged dioecious macrophytes acquires importance to strengthen research on environmental stress and repopulation of aquatic ecosystems. The objective of this work was to determine biomarkers that allow the sexual identification of *Vallisneria americana* by spectrophotometry analysis of the hydroethanolic extracts of its leaves or roots. Within the water column of the male and female vegetation, the parameters of pH, temperature, dissolved oxygen, conductivity, dissolved solids, and redox potential were measured *in situ*. For each reproductive morphotype, the number of leaves and the length of the predominant leaf and main root in each plant were analyzed. Spectral scanning of the extracts in the range of 340 to 750 nm was used both to compare the dominant wavelengths of the metabolites present and to quantify chlorophylls (a and b), carotenoids, and monomeric anthocyanins. The chlorophyll quotient was also obtained. The biomarkers of sexuality of this submerged macrophyte can be related to the content of the four pigments in the leaves that were invariably high in males, whereas the physics and chemistry of water and the vegetative morphology of each sex were almost similar. A possible microalgal influence is described by the inverse relationship of chlorophylls in roots and the finding of phycobilins in male leaves. The results offer the potential for ecological and biotechnological applications of *V. americana* aimed at the repopulation of wetlands affected by abiotic and biotic factors.
Palabras claves	Restoration, sex pigments, UV-Vis spectrophotometry.

Revista	**AMPHIBIAN & REPTILE CONSERVATION**
Volumen	16
Número	2
ISSN	ISSN: 1083-446X eISSN: 1525-9153
DOI	n/a
Título del Artículo	The herpetofauna of Tabasco, Mexico: composition, distribution, and conservation status.
Autores e instituciones de adscripción	Barragán-Vázquez, MD [1]; Ríos-Rodas, L [2]; Fucsko, LA [3]; Porras, LW [4]; Mata-Silva, V [5]; Rocha, A [5]; De Santis, DL [6]; García-Padilla [7], E; Johnson, JD [5]; Wilson, LD,[8] [1] Univ Juárez Autónoma Tabasco, Ctr Invest Conservac & Aprovechamiento Recursos T, Div Acad Ciencias Biol, Villahermosa, Tabasco, México [2] Univ Autónoma Chiapas, Fac Maya Estudios Agr, Carretera Catazajá Palenque, Km 4, Catazajá 29980, Chiapas, México [3] Swinburne Univ Technol, Dept Humanities & Social Sci, Melbourne, Vic, Australia [4] 7705 Wyatt Earp Ave, Eagle Mt, UT 84005 USA [5] Univ Texas El Paso, Dept Biol Sci, El Paso, TX 79968 USA [6] Georgia Coll & State Univ, Dept Biol & Environm Sci, Milledgeville, GA 31061 USA [7] Oaxaca de Juárez, Oaxaca 68023, MEXICO [8] Escuela Agr Panamer Zamorano, Ctr Zamorano Biodiversidad, Dept Francisco Morazan, Tegucigalpa, Honduras and 1350 Pelican Court, Homestead, FL 33035 USA
Resumen	The herpetofauna of Tabasco, Mexico, consists of 170 species, including 39 anurans, five caudates, one caecilian, two crocodylians, 111 squamates, and 12 turtles. We catalogued the distribution of these species among the three physiographic regions we recognize in the state: the Gulf Coastal Plain (88 species), the Sierras Bajas de Petén (93 species), and the Sierra Norte de Chiapas (145 species). The individual species are found in either one, two, or all three regions (mean = 1.9). Approximately 68% of the herpetofauna in Tabasco occupies only one or two of the three regions, which is of important conservation significance. The largest number of single-region species is found in the Sierra Norte de Chiapas (50), followed by the Gulf Coastal Plain (12) and the Sierras Bajas de Petén (nine). Coefficient of Biogeographic Resemblance (CBR) calculations indicate that the Sierra Norte de Chiapas and the Sierras Bajas de Petén share the greatest number of species (79), followed by 71 species between the Sierra Norte de Chiapas and the Gulf Coastal Plain, and 61 between the Gulf Coastal Plain and the Sierras Bajas de Petén. Fifty-five species occupy all three regions. A similarity dendrogram based on the Unweighted Pair Group Method with Arithmetic Averages (UPGMA) illustrates that the Sierras Bajas de Petén clusters with the Gulf Coastal Plain at the 0.67 level and the Sierra Norte de Chiapas clusters with the previous pair at the 0.64 level, and overall indicates an intermediate level of similarly. With reference to distributional categories, the greatest number of species is represented by the non-endemic species (146 of 170), followed by the country endemics (20), and the non-natives (five). Of the 146 non-endemic species, the majority (95) are MXCA species (i.e., those found only in Mexico and Central America). The principal environmental threats to the Tabasco herpetofauna are deforestation, agricultural activities, roads, soil contamination and oil extraction, myths and cultural factors (gastronomy), illegal commerce, and forest fires. We evaluated the conservation status of each of the native species by using the SEMARNAT, IUCN, and EVS systems, of which the EVS system provided the most inclusive assessment of the state's herpetofauna. We also employed the Relative Herpetofaunal Priority (RHP) method to determine the rank order of the three physiographic regions and found the highest values in the Sierra Norte de Chiapas. Most of the protected areas in the state are located in the Gulf Coastal Plain, which is only the second or third most important region from a conservation perspective. Nonetheless, about 95% of the native herpetofauna has been documented within the system of protected areas. Finally, we provide a set of conclusions and recommendations for the future protection of the Tabasco herpetofauna.
Palabras claves	Protection recommendations, Squamates, Turtles.

Revista	**TEORIA DE LA EDUCACION**
Volumen	34
Número	2
ISSN	ISSN: 1130-3743 eISSN: 2386-5660
DOI	10.14201/teri.28599
Título del Artículo	The Problem of The University's Social Responsibility
Autores e instituciones de adscripción	Vallaeys, F [1]; Álvarez- Rodríguez, J [2]. [1] Univ Pacífico, Lima, Perú [2] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	In the era of planetary unsustainability, it is necessary to manage collective impacts. This is called social responsibility, which requires learning to visualize the organization from its environment in order to change its routines. This is a major educational challenge that, according to Dewey, constitutes the political challenge of democracy, as a community capable of managing its own social and environmental problems. University Social Responsibility (USR) is crucial for collective democratic success, but it is still embryonic, because powerful brakes prevent institutional change in the university: there is no external social pressure for the university to be socially responsible; and from within, the siloed design of specialties, the isolation of teachers and the alienated quality criteria hinder the institutional permeability of USR. The birth of the USR is therefore inscribed not only within the secular debate on the social role of the university. It is also situated within the more general debate on the behavior that any organization (public or private, profit or non-profit) must adopt in order to face the global risk of planetary unsustainability of humanity, as planetary unsustainability calls for an international and trans-institutional macro-ethics. USR is also a theory of education that is strongly bound to the organizations themselves.
Palabras claves	Knowledge management, Sustainable development, Democracy.

Revista	**APPLIED SCIENCES-BASEL**
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ISSN	ISSN: 1130-3743 eISSN: 2386-5660
DOI	10.3390/app12146887
Título del Artículo	Sustainable Microalgae and Cyanobacteria Biotechnology
Autores e instituciones de adscripción	López- Hernández, JF [1,2]; Kean-Meng, T [3]; Asencio-Alcudia, GG [1]; Asyraf-Kassim, M [3]; Álvarez- González, CA [1]; Márquez-Rocha, FJ [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, LAFIRA, Villahermosa 86150, Tabasco, México [2] Inst Politecn Nacl, Ctr mexicano Prod Mas Limpia, Lab Bioproc, Unidad Tabasco, Cunduacán 86691, México [3] Univ Sains Malaysia, Sch Ind Technol, Bioproc Technol Div, George Town 11800, Malaysia
Resumen	Marine organisms are a valuable source of new compounds, many of which have remarkable biotechnological properties, such as microalgae and cyanobacteria, which have attracted special attention to develop new industrial production routes. These organisms are a source of many biologically active molecules in nature, including antioxidants, immunostimulants, antivirals, antibiotics, hemagglutinates, polyunsaturated fatty acids, peptides, proteins, biofuels, and pigments. The use of several technologies to improve biomass production, in the first step, industrial processes schemes have been addressed with different accomplishments. It is critical to consider all steps involved in producing a bioactive valuable compound, such as species and strain selection, nutrient supply required to support productivity,

Resumen	type of photobioreactor, downstream processes, namely extraction, recovery, and purification. In general, two product production schemes can be mentioned; one for large amounts of product, such as biodiesel or any other biofuel and the biomass for feeding purposes; the other for when the product will be used in the human health domain, such as antivirals, antibiotics, antioxidants, etc. Several applications for microalgae have been documented. In general, the usefulness of an application for each species of microalgae is determined by growth and product production. Furthermore, the use of OMICS technologies enabled the development of a new design for human therapeutic recombinant proteins, including strain selection based on previous proteomic profiles, gene cloning, and the development of expression networks. Microalgal expression systems have an advantage over traditional microbial, plant, and mammalian expression systems for new and sustainable microalga applications, for responsible production and consumption.
Palabras claves	Biorefineries, Wastewater treatment, Recombinant protein production.

Revista	**A CIENCIA UNEMI**
Volumen	15
Número	38
ISSN	ISSN: 1390-4272 eISSN: 2528-7737
DOI	10.29076/issn.2528-7737vol15iss38.2022pp73-83p
Título del Artículo	Strategic management in small and medium enterprises in Mozambique
Autores e instituciones de adscripción	Muibo, AVC [1]; Calacich, SN [2]; Caraveo, MDS [2]. [1] Univ Juárez Autónoma Tabasco, Studios Econ Adm, Villahermosa, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	The article aims to analyze the strategic management adopted by SMEs in Mozambique, in addition to investigating how these companies develop strategically. Most of the SM Es in Mozambique are not structured to have a sustainable strategic management, adapting to the market in a reactive way. Most of these companies are not capable of developing strategies that give them a sustainable competitive advantage in the market in which they operate. The article was prepared from a qualitative approach, with a descriptive scope, using documentary review as a collection technique, and the data search was carried out in Scielo, Dialnet, EBSCO, Elsevier, Emerald, Scopus, Google Scholar, Science Direct and Conricyt. The results of the investigation indicate that the growth in the number of SM Es in Mozambique is not satisfactory, in addition, most of the SM Es are currently adopting the maintenance or diversification strategy to avoid their disappearance in the market. Likewise, in the face of the COVID-19 pandemic, SMEs in Mozambique seek to develop their businesses by adopting reactive strategies, namely the introduction of electronic commerce. It is concluded that the SWOT analysis tool is the most suitable for SM Es due to its ease of use.
Palabras claves	Management, Strategic management, Small and Medium Businesses.

Revista	**REVISTA INTERNACIONAL DE CONTAMINACION AMBIENTAL**
Volumen	38
Número	n/a
ISSN	ISSN: 0188-4999
DOI	10.20937/RICA.54024
Título del Artículo	Stoichiometric calculations of emission factors to estimate fugitive greenhouse gases emissions of a solid waste management center

Autores e instituciones de adscripción	Hernández- Gerónimo, G [1]; Laines-Canepa, JR [1]; Ávila- Lázaro, I [1]; Solís-Sílvan, R [2]; Sosa-Olivier, JA [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Km 0-5 Carretera Villahermosa Cárdenas, Villahermosa 86150, Tabasco, México [2] Inst Tecnol Super Comalcalco, Km 2 Carretera Vecinal Paraíso Comalcalco, Comalcalco 86650, Tabasco, México
Resumen	Emission Factors (EF) are representative values which relate the amount of gases released into the atmosphere by the development of an activity, allowing the estimation of emission rates (e.g., in the solid waste generated). The organic fraction of municipal solid waste (OFMSW) requires particular EF. In this study, emissions of carbon dioxide equivalent (CO_{2e}) in a higher education institution (HEI) were estimated. The EFs from OFMSW were obtained based on stoichiometry calculations considering the aerobic and anaerobic decomposition processes. The monitoring of municipal solid waste (MSW) daily generation during 2017 in the HEI and the use of bibliographic EF allowed the calculation of the initial emission rate. The HEI studied has 26 sources of waste generation. It generated 31.05 t/yr of MSW, an average of 146.5 kg/d and a per capita generation of 0.07 kg/d. Eighteen by-products were identified, 13 of them recoverable. Initially, the negative emission was 7617.4 kg CO_{2e}, attributable to 7.08 t of recoverable MSW, and the positive emission was 1178.1 kg CO_{2e} from final disposal. The EFs obtained adjusted the negative final emission to 8153 t CO2e and the positive final emission to 651.3 kg CO_{2e}. Proper management of the MSW generated in work or educational centers allows reducing environmental impacts, recovering raw materials and energy.
Palabras claves	Organic Waste, Municipal Solid Waste, University.

Revista	**JOURNAL OF INFECTION IN DEVELOPING COUNTRIES**
Volumen	16
Número	9
ISSN	ISSN: 1972-2680
DOI	10.3855/jidc.15545
Título del Artículo	Side effects of the Pfizer BioNTech vaccine in health workers of a hospital in the southeast of Mexico
Autores e instituciones de adscripción	Ruiz-Quiñones, JA [1]; Narváez-Osorio, VM [1]; Ulín-Tejeda, OA [1]; Flores-Barrientos, OI [1]; Suárez-Méndez, S [1,2]; Baeza-Flores, GD [1,2]. [1] High Specialty Reg Hosp Dr. Juan Graham Casasus, Res Ctr Trop & Emerging Dis, Villahermosa, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Acad Div Hlth Sci, Villahermosa, Tabasco, México
Resumen	Introduction: The goal of this study was to evaluate the side effects of application of the Pfizer BioNTech vaccine on the workers at a Mexican hospital. Methodology: A cross-sectional study was carried out, in which 1351 workers from a tertiary care center in the Mexican southeast were included. Sociodemographic data, comorbidities, and side effects after the Pfizer BioNTech vaccine were obtained through an online survey. The variables were analyzed through descriptive statistics. The presence or absence of side effects was analyzed through the Chi-square test or t-test, as appropriate. The result was considered statistically significant at $p < 0.05$. Results: A total of 1351 health workers participated in the online survey. The mean age was 37.8 ± 10.9 years and 56.4% were women. Among them, 8.2% suffered from high blood pressure. In addition, 76.7% manifested pain in the application area. The presence of side effects was associated with the female gender ($p < 0.01$). Side effects were more prevalent in younger age (37.2 ± 10.7) than older age (41.5 ± 10.8) ($p < 0.01$). There was no association with the presence of comorbidities ($p > 0.05$). Conclusions: The data suggest that pain in the application area is the most frequent side effect among workers in a Mexican hospital who received the Pfizer BioNTech vaccine against COVID-19. In addition, we observed sialorrhea as a side effect in the studied population and this had not previously been reported. The highest number of adverse events occurred between 24 to 72 hours after application.
Palabras claves	COVID-19, Hospital, Workers.

Revista	**MATERIALS**
Volumen	15
Número	21
ISSN	eISSN: 1996-1944
DOI	10.3390/ma15217707
Título del Artículo	Recycled Fine Aggregates from Mortar Debris and Red Clay Brick to Fabricate Masonry Mortars: Mechanical Analysis
Autores e instituciones de adscripción	Mora-Ortiz, RS [1]; Díaz, SA [1]; Del Ángel-Meraz, E [1]; Magaña -Hernández, F [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ingn & Arquitectura DAIA, Carretera Cunduacán Jalpa de Méndez Km 1, Cunduacán 86690, Tabasco, México
Resumen	In this research, the mechanical behavior of masonry mortars made with partial substitution of sand by recycled fine aggregates (RFAs) of mortar (MT) and recycled clay brick (RCB) was compared. Mortar specimens were built in two groups (MT and RCB) considering different replacement proportions by dry weight. To reduce the water absorption of RFAs during mortar making, the prewetting method was utilized. All the mixtures were assembled with a volumetric cement-to-aggregate ratio of 1:4 and a consistency of 175 ± 5 mm. The properties in the fresh and hardening state of mortars were analyzed separately. The experimental results showed that the properties of mortars in a fresh state (bulk density and air content) were affected if RFA was added to the mixture; however, mortars assembled with up to 40% and 50% of MT and RCB, respectively, accomplished a compressive strength value of reference for new mixtures. Both mortar groups showed good results in adhesive strength values, with the RCB mortars standing up as they achieved greater adherence than the control mortar with substitution percentages of up to 30%. Therefore, the reutilization of both RFAs is feasible, notably in rendering and bonding functions.
Palabras claves	Sustainable construction, Mortars, Red clay brick waste.

Revista	**SYSTEM**
Volumen	110
Número	n/a
ISSN	ISSN: 0346-251X eISSN: 1879-3282
DOI	10.1016/j.system.2022.102918
Título del Artículo	Recognition of conventional expressions by EFL learners in Mexico and China
Autores e instituciones de adscripción	Bardovi- Harlig, K [1,4]; Izquierdo, J [2]; Su, YW [3]. [1] Indiana Univ, Bloomington, IN USA [2] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México [3] Univ Utah, Salt Lake City, UT USA [4] Indiana Univ, Dept Language Studies 2, Ballantine Hall 709, 1020 E Kirkwood, Bloomington, IN 47405 USA
Resumen	This paper examines the role of EFL instructional contexts in the acquisition of conventional expressions as pragmalinguistic resources. This study compares the performance of 303 EFL students in two culturally and linguistically different countries and 89 native speakers of American English. The students were enrolled in university EFL programs in China (n = 193) and Mexico (n = 110), and were recruited from courses that estimate the learners' proficiency to be CEFR B1. Age-matched native speakers of English were recruited from university classes on second language studies and linguistics. All groups completed an aural multiple-choice discourse completion task comprised of 20 items with options generated by native-speakers and learners during a production task. The EFL learners at the two sites, with the same level of proficiency, selected the targeted conventional expressions from the multiple-choice task with equal frequency. Most of their alternative selections showed sociopragmatic knowledge of the preferred speech

Resumen	act. Identical alternative choices reflect the learners' proficiency level, whereas their different choices suggest possible lexical influence from their distinct L1s. The paper ends by considering instruction and media access as variables that may account for the degree of success in the pragmatic development of conventional expressions in EFL contexts.
Palabras claves	Situation-bound utterances, Aural MC-DCT, EFL contexts.

Revista	**LOBACHEVSKII JOURNAL OF MATHEMATICS**
Volumen	43
Número	1
ISSN	ISSN: 1995-0802 eISSN: 1818-9962
DOI	10.1134/S1995080222040023
Título del Artículo	Periodic Orbits for a Fifth-Order Generalized Henon-Heiles Hamiltonian System
Autores e instituciones de adscripción	Álvarez- Ramírez, M [1]; Cornelio, JL [2]; Medina, M [1]. [1] UAM Iztapalapa, Dept Matemat, México City 09340, DF, México [2] Univ Juárez Autónoma Tabasco, DACB, Cunduacán 86690, Tabasco, México
Resumen	In this paper we study the periodic orbits of the Hamiltonian system with a fifth-order generalized Hénon-Heiles potential and its C-1 non-integrability in the sense of Liouville-Arnold.
Palabras claves	Averaging method, Periodic solution, Non-integrability.

Revista	**REVISTA DE LA UNIVERSIDAD DEL ZULIA**
Volumen	13
Número	38
ISSN	ISSN: 0041-8811 eISSN: 2665-0428
DOI	10.46925//rdluz.38.23
Título del Artículo	Performance and Competitive Advantage: Aspects Related to Small and Medium Enterprises in Mexico
Autores e instituciones de adscripción	Muibo, AVC [1]; Fernández, AMDE [2]; Caraveo, MDS [2]. [1] Univ Juárez Autónoma Tabasco, Estudios Econ Adm, Villahermosa, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	The dominant theories in strategic management consider that competitive advantage is the performance of the company, while the opposition affirms that it is the ability of companies to achieve superior performance. The latter states that competitive advantage could determine the performance of the company, but that many other factors can modify the relationship. The purpose of this study was to analyze the importance of competitive advantage and business performance in the context of small and medium enterprises in Mexico. It's was carried out from a qualitative approach, with a descriptive scope through an in-depth bibliographic review. In the Mexican case, the competitive advantage of small and medium-sized companies has been negatively affected by the lack of access to financing, administrative failures, technological backwardness and lack of qualified labor, which negatively affects their performance. Therefore, research results have shown that human capital, innovation, process technology, strategic planning, productivity, quality assurance, supply chain management, and adaptability play a role. crucial in the competitiveness and success of the studied business sector.
Palabras claves	Competitiveness, Strategic resources, SMEs.

Revista	**ECOLOGICAL ENGINEERING**
Volumen	184
Número	n/a
ISSN	ISSN: 0925-8574 eISSN: 1872-6992
DOI	10.1016/j.ecoleng.2022.106785
Título del Artículo	On predicting of some consequences of planned dam construction in a pristine sand-gravel river large catchment: Rio San Pedro, Nayarit, Northwest Mexico
Autores e instituciones de adscripción	Rivera-Trejo, F [1]; Radecki- Pawlik, A [2]; Filipczyk, J [3]; Priego-Hernández, G [4]; Soto-Cortes, G [5]. [1] Juárez Autonomous Univ Tabasco, Div Architecture & Engn, Tabasco, México [2] Cracow Univ Technol, Fac Civil Engn, Warszawska 24, PL-31155 Krakow, Poland [3] PBW Inzynier Sp Zoo, Sokolnicza 5-74-75, PL-53676 Wroclaw, Poland [4] Juárez Autonomous Univ Tabasco, Div Basic Sci, Villahermosa, Tabasco, México [5] Autonomous Metropolitan Univ, Div Basic Sci & Engn, Lerma, México
Resumen	The pressure on water and energy resources is increasing globally, particularly in emerging countries. Some of them use their rivers for electric power generation, paying little or no attention to the hydromorphological changes generated in the rivers due to the infrastructure associated. One case is the St. Pedro River in the Northwest of Mexico (Rio San Pedro), where it is planned to build a hydroelectric dam. The importance is due to its flow discharges directly to a marsh system called Marismas Nacionales, considered a Biosphere Reserve that includes approximately 20% of all mangroves in Mexico. The alteration of its natural conditions is a critical issue for the ecosystem. There are many studies about the effects of dams on rivers after their construction, but only a few related to the river characterization before intervention within its channel. In this work, we highlight the relevance of the latter. We conducted extensive fieldwork, including morphological survey, sediment transport measurement, hydrodynamics, and bathymetry over 80 km of the river. We establish a baseline with the hydromorphological parameters in the river and run a numerical simulation with 2-D HEC-RAS 6.1 model to compare natural and controlled runoff. The goal of our study was to discuss possible scenarios and some consequences that could be generated with the dam construction—alterations in the lower basin— and suggest actions that can help to minimize the detrimental consequences. The novelty of our work is the scope of fieldwork, the wide range of the data, careful modeling based on detailed field data, and finally, the possible way one might use our results in the future to minimize the adverse consequences of dam construction. The methodology presented can be used as a guide to other dam projects worldwide, which face all these issues and need to redesign the dam and consider modern techniques to preserve the riverine conditions close to the more natural possible.
Palabras claves	Fieldwork, Numerical simulation, Riverine system

Revista	**REVISTA INTERNACIONAL DE CONTAMINACION AMBIENTAL**
Volumen	38
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ISSN	ISSN: 0188-4999
DOI	10.20937/RICA.54242
Título del Artículo	Orange peel as substrate to synthesize conductive carbon nanostructures by a green thermal process
Autores e instituciones de adscripción	Suárez-Velázquez, GG [1,2]; Pech- Rodríguez, WJ [2]; Ramírez-De León, JA [3]; Castañón- Rodríguez, JF [3]; Meléndez- González, PC [4]; Galaviz-Pérez, JA [5]. [1] Univ Autónoma Tamaulipas, Ctr Univ, Victoria 87138, Tamaulipas, México [2] Univ Politecn Victoria, Parque Cient & Tecnol Tamaulipas, Cd Victoria 87138, Tamaulipas, México

Autores e instituciones de adscripción	[3] Univ Autónoma Tamaulipas, Unidad Acad Trabajo Social & Ciencias Desarrol Hu, Cd Victoria 87120, Tamaulipas, México [4] Inst Politecn Nacl, Ctr Invest & Estudios Avanzados, Zona Ind 25900, Ramos Arizpe, Coahuila, México [5] Univ Juárez Autónoma Tabasco, Ave Univ S-N, Villahermosa 86040, Tabasco, México
Resumen	Orange (*Citrus sinensis L.*) peel (OP) has been considered a waste due to its high processing costs and complicated management, resulting in environmental pollution issues. Alternatives have been proposed to generate economic benefits by developing efficient technologies to produce and store electrical energy. Moreover, valorization of OP will bring municipal and agro-industrial waste management reduction. This work aimed to develop a cost-effective and environmentally friendly thermal process to synthesize a conductive carbon from OP using a new methodology herein described. First, the OP was washed using an ultrasonic bath and dried by sun and dehydrated in muffle. Then, dehydrated pieces of OP were covered with fine-grained sea sand to limit air interaction and was carbonized at 1000 C for one hour. The resulting biocarbon was analyzed by cyclic voltammetry. The electrical double layer capacitance was estimated to assess the electrochemical behavior of the carbon in the electrolyte. Interestingly, with the newly proposed heat treatment, the carbon material showed a specific capacitance of 272 F/g at 20 mV/s. Therefore, the new proposed thermal process allows the synthesis of graphitized carbon with good electrochemical properties at a low cost. The results show the potential for the development of new conductive carbon materials from residual biomass by a simple, economical, and environmentally friendly air-limited heat treatment.
Palabras claves	Cyclic Voltammetry, Nanotechnology, Supercapacitors

Revista	**COMMUNICATIONS ON APPLIED MATHEMATICS AND COMPUTATION**
Volumen	5
Número	2
ISSN	ISSN: 2096-6385 eISSN: 2661-8893
DOI	10.1007/s42967-021-00162-1
Título del Artículo	Numerical Simulation of Bed Load and Suspended Load Sediment Transport Using Well-Balanced Numerical Schemes
Autores e instituciones de adscripción	González-Aguirre, JC [1]; González -Vázquez, JA [2]; Alavez- Ramírez, J [1]; Silva, R [3]; Vázquez- Cendón, ME [4] [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Carr Cunduacán Jalpa de Méndez KM 1, Cunduacán 86690, Tabasco, México [2] Univ Autónoma Metropolitana, Unidad Iztapalapa, Av. San Rafael Atlixco 186, México City, DF, México [3] Univ Nacl Autónoma México, Inst Ingn, México City 04510, DF, México [4] Univ Santiago de Compostela, Dept Matemat Aplicada, Santiago De Compostela 15706, Spain
Resumen	Sediment transport can be modelled using hydrodynamic models based on shallow water equations coupled with the sediment concentration conservation equation and the bed conservation equation. The complete system of equations is made up of the energy balance law and the Exner equations. The numerical solution for this complete system is done in a segregated manner. First, the hyperbolic part of the system of balance laws is solved using a finite volume scheme. Three ways to compute the numerical flux have been considered, the Q-scheme of van Leer, the HLLCS approximate Riemann solver, and the last one takes into account the presence of non-conservative products in the model. The discretisation of the source terms is carried out according to the numerical flux chosen. In the second stage, the bed conservation equation is solved by using the approximation computed for the system of balance laws. The numerical schemes have been validated making comparisons between the obtained numerical results and the experimental data for some physical experiments. The numerical results show a good agreement with the experimental data.
Palabras claves	Finite volume method, Numerical simulation, Well-balanced schemes.

Revista	**INTERNATIONAL JOURNAL OF ENGINEERING AND GEOSCIENCES**
Volumen	7
Número	3
ISSN	ISSN: 2548-0960
DOI	doi.org/10.26833/ijeg.978990
Título del Artículo	LiDAR modeling to determine the height of shade canopy tree in cocoa agrosystems as available habitat for wildlife
Autores e instituciones de adscripción	Sánchez -Diaz, B [1]; Mata-Zayas, EE [2]; Gama-Campillo, LM [2]; Rincón -Ramírez, JA [3]; Vidal- García, F [2]; Rullán -Silva, CD [2]; Sánchez -Gutiérrez, F [4]. [1] Inst Tecnol Nacl México, Inst Tecnol Super Comalcalco, Comalcalco, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Biol, Villahermosa, Tabasco, México [3] Colegio Postgrad, Campus Tabasco, Cárdenas, Tabasco, México [4] Univ Autónoma Chiapas, Fac Maya Estudios Agr, Palenque, Chiapas, México
Resumen	Agrosystems have different canopy strata due to shade trees that serve as available habitats for endangered species such as birds, reptiles, and mammals. LiDAR is a technology used to assess habitat quality as a support for designing conservation strategies. The objective of this research was to develop a model with data derived from LiDAR to obtain the height of the shade canopy in cocoa agrosystems, as a habitat available for wildlife species. Through the data of the height of the vegetation taken in the field and the data obtained from a LiDAR point cloud, the Canopy Height Model was generated. The data from the mapping of the canopy height model of the agrosystems taken as study sites were validated using the coefficient of determination (R2), mean absolute error (MAE), and the RMSE. The mean canopy height at the study sites was 14.63, 13.84, and 13.95 m, and the results of the validation using the model predicted canopy height shows good agreement with the actual value with an R2 of 0.86, and very low values of MAE=1.88, MSE=5.64, and RMSE=2.37, which indicates that they have an acceptable degree regarding the canopy height model between the LiDAR data and the data taken in the field. Research using LiDAR provides useful information to determine the height of the canopy, in the cocoa agrosystems up to 3 strata are found, this is due to the diversity of tree species used as shade, ranging from timber, fruit, ornamental, which are used as feeding, nesting, and resting of wildlife, in the study area populations of howler monkey species that are listed as endangered by the International Union for Conservation of Nature (IUCN), in addition to other species such as bats and birds, with the presence of these species indicate that the cocoa agrosystems, serve as a habitat for a diversity of species, which is why it is important to conserve these agrosystems in the humid tropics.
Palabras claves	Humid Tropics, Point Cloud, Model.

Revista	**TELOS: REVISTA DE ESTUDIOS INTERDISCIPLINARIOS EN CIENCIAS SOCIALES,**
Volumen	24
Número	3
ISSN	ISSN: 2343-5763 eISSN: 1317-0570
DOI	10.36390/telos243.16
Título del Artículo	Job environment and its effect on the emotional moral judgment of workers
Autores e instituciones de adscripción	Francia, VHR [1]; Caballero, AMD [2]; Ramos, VAR [3]; Ramos, AVR [4]. [1] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México [2] Tecnol Nacl México, Campus Centla, México City, DF, México [3] Univ Autónoma Metropolitana, México City, DF, México [4] Univ Autónoma Estado Hidalgo, Inst Ciencias Sociales & Humanidades, Pachuca, Hidalgo, México
Resumen	The labor framework has high demands for the correct behavior of the worker. This often feels serious levels of shame, guilt, or, conversely, feel organizational pride. The human organizational experience makes people get used to moral feelings. Several studies show that the female gender is more emotionally reactive. The study's general objective was to identify the effect of the work environment, gender, and age on emotional moral judgment, moral horror, pride, guilt, and emotional

Resumen	moral balance. A statistical factorial and variance analysis was applied on the indices and subindices. The participants were 154 employees, 78 female and 76 male, in four different work environments: educational, commercial, global corporate, and industrial, located in the Tabasco state, Mexico. Work environments had a medium impact on the level of workers' moral emotions and moral judgment. Contrarily, neither gender nor age represented differences in the indices. It is concluded that judgment and moral emotions are regularly affected by the work environment, and, finally, neither age nor gender affects emotions or moral judgment.
Palabras claves	Pride. Guilt, Work environment.

Revista	**COLONIAL LATIN AMERICAN REVIEW**
Volumen	31
Número	3
ISSN	ISSN: 1060-9164 eISSN: 1466-1802
DOI	10.1080/10609164.2022.2104033
Título del Artículo	Japanese objects in New Spain: nanban art and beyond
Autores e instituciones de adscripción	Ruiz, SIO [1]; Arimura, R [2]. [1] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México [2] Univ Nacl Autónoma México, Morelia, Michoacán, México
Resumen	Material evidence and documents attest to the circulation, consumption, and adaptation of Asian raw materials in the Americas, whose role in these processes has long been underestimated.
Palabras claves	Globalization.

Revista	**TELOS: REVISTA DE ESTUDIOS INTERDISCIPLINARIOS EN CIENCIAS SOCIALES,**
Volumen	24
Número	2
ISSN	ISSN: 2343-5763 eISSN: 1317-0570
DOI	10.36390/telos242.04
Título del Artículo	Informal economy: Conceptual description and look at the Mexican context
Autores e instituciones de adscripción	Prats, GM [1]; Hernández, FS [1]; Domínguez, AAJ [1]. [1] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	The informal economy is multifactorial, dynamic, and evolutionary; it falls on various stages of the economic growth of societies and can exist within those people who are in the formal market and among those who are not on formality, which leads to evasion of the payment of the contributions. Still, it continues to help circulate money to be able to continue with day-to-day operations. This document aims to identify the international conceptualization of the informal economy, having as a reference ILO (1972, 2015) Conde González and Marie Delaplace (2016), to identify elements considered by the authors analyzed for its optimal measurement. Therefore, through a qualitative methodology based on a documentary review, descriptive process, and critical content analysis, this document identifies the characteristic elements of the construction of the term informal economy, as well as the indicators that allow specifying the informal economy attributions. It is associated with legal and institutional framework processes, the transformation of the labor market, and labor conditions according to the work or service provided by the person.
Palabras claves	Labor informality, Labor market, Working person.

Revista	**ECOSISTEMAS**
Volumen	31
Número	2
ISSN	ISSN: 1697-2473
DOI	10.7818/ECOS.2294
Título del Artículo	Incorporating taxonomic distinctness in diversity studies: Amphibians from Parque Estatal de la Sierra de Tabasco, Mexico
Autores e instituciones de adscripción	Gerónimo-Torres, JD [1]; Barragán- Vázquez, MD [2]; Ríos-Rodas, L [1]. [1] Univ Autónoma Chiapas, Fac Maya Estudios Agr, Carretera Catazajá Palenque Km 4, Catazajá 29980, Chiapas, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Carretera Villahermosa Cárdenas, Km 0-5 S-N, Villahermosa 86150, Tabasco, México
Resumen	This work compares amphibian diversity between forest and secondary vegetation, incorporating taxonomic distinctiveness in the diversity analyses. For the sampling of individuals, four transects of 200 m in length were established in both ecosystems. The samplings were carried out once a month, for six months, with day and night searches. A total of 424 individuals from nine families were recorded, belonging to 19 species of 14 genera, and for the first time *Bolitoglossa veracrucis* is reported for the state of Tabasco. In both ecosystems, a richness of 14 species was recorded, being the forest the one with the highest abundance with 269 individuals and the lowest in secondary vegetation with 155. The index of true diversity of order ^{1}D and ^{2}D, determined that the secondary vegetation (6.28 and 4.61) is more diverse than the forest (3.43 and 1.90), with a similarity of species of 64%. The taxonomic diversity index (Δ) and taxonomic distinctness index (Δ*), showed the highest values in the secondary vegetation (Δ=2.36, Δ*=2.99) and the lowest in the jungle (Δ=1.07, Δ*=2.42). However, the average taxonomic distinctness index (Δ+), showed similar values among ecosystems. The incorporation of taxonomic distinctness in diversity studies allows to evaluate beyond the number of species, considering taxonomic distances and relationships, which could reflect the functional diversity of a community.
Palabras claves	Habitat influence, Rainforest, Secondary vegetation.

Revista	**PATHOGENS**
Volumen	11
Número	7
ISSN	eISSN: 2076-0817
DOI	10.3390/pathogens11070774
Título del Artículo	In Vitro Analysis of Extracts of Plant Used in Mexican Traditional Medicine, Which Are Useful to Combat Clostridioides difficile Infection
Autores e instituciones de adscripción	Martínez-Alva, JE [1]; Espinoza-Simón, E [1]; Bayona-Pérez, Y [2]; Ruiz-Pérez, NC [2]; Ochoa, SA [3]; Xicohtencatl-Cortes, J [3]; Torres, J [4]; Romo-Castillo, M [5]. [1] Univ Valle México, Campus Chapultepec, México City 11810, DF, México [2] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Salud, Villahermosa 80040, Tabasco, México [3] Hosp Infantil México Dr. Federico Gómez, Lab Invest Bacteriol Intestinal, México City 06720, DF, México [4] Hosp Pediat México City, Ctr Med Nacl Siglo XXI, IMSS, Unidad Invest Med Enfermedades Infecciosas & Para, México City 06720, DF, México [5] Colegio Postgraduados, Posgrad Fitosanidad Fitopatol, Catedras Consejo Nac Ciencia & Tecnol CONACYT, Texcoco 56230, México
Resumen	Recently, a worrying acceleration of the emergence of antibiotic-resistant bacteria has been reported. The increase in antibiotic-associated diseases, such as *Clostridioides Difficile* Infection (CDI), has promoted research on new treatments that could be more effective and less aggressive for CDI patients. This study evaluates eight plants with antimicrobial activity commonly used in Mexican traditional medicine to evaluate their potential against *C. difficile*. We provide essential information about these plants' activities and action mechanisms

Resumen	against *C. difficile* and their effect on different bacterial infection activities: motility, adherence, sporulation, and germination. The selected plants are rosemary, estafiate, rue, epazote, mint, toloache, ajenjo, and thyme. We used clinical isolates to test their activity against strains responsible for current outbreaks to provide more information about the clinical impact of these extracts. We found that thyme, ajenjo, and mint were the most effective against the isolates. We identified that the extracts affected protein synthesis. In addition, the extracts affect the strains' motility, and some, such as thyme extract, affect adherence, whereas rue extract affects sporulation. These results led to the identification of new compounds beneficial to CDI treatment.
Palabras claves	Action mechanism, Clinical strains, Antibiotic resistance.

Revista	**PLANTS-BASEL**
Volumen	11
Número	14
ISSN	eISSN: 2223-7747
DOI	10.3390/plants11141805
Título del Artículo	In Silico Conformation of the Drug Colchicine into Tubulin Models and Acute Phytotoxic Activity on Cucumis sativus Radicles
Autores e instituciones de adscripción	Peña-Morán, OA [1]; Jiménez -Pérez, J [2]; Cerón -Romero, L [2]; Rodríguez-Aguilar, M [1]. [1] Univ Autónoma Estado Quintana Roo, Div Ciencias Salud, Chetumal 77039, Quintana Roo, México [2] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Básicas, Cunduacán 86690, Tabasco, México, Posgrad Fito sanidad Fitopatol, Catedras Consejo Nacl Ciencia & Tecnol CONACYT, Texcoco 56230, México
Resumen	Many tests are used to determine the toxic activity of miscellaneous substances, and those that are simple, fast, and inexpensive are useful for screening compounds with applications in different fields. The *Cucumis sativus* root growth inhibition test is an example of acute toxicity determinations. On the other hand, colchicine has been used as a herbicide to generate polyploids in plant species finally reaching the environment; for this reason, colchicine could become a point of attention in ecotoxicology. This work established that *Cucumis sativus*, at the colchicine binding site (CBS) in tubulin, shares 100% similarity with humans. Colchicine was docked on seven *Cucumis sativus* computational models of the αβ-tubulin heterodimer, allowing us to understand a possible conformation in tubulin to trigger its antimitotic effect. Furthermore, an in vitro phytotoxicity assay of colchicine-treated cucumber radicles indicated a hormetic-type concentration-dependent response with macroscopic changes in radicles and hypocotyl. These results support the highly preserved grade of tubulins in several species, and using microtubule inhibitors could require attention in ecotoxicological issues. The *Cucumis sativus* root growth test could help evaluate small molecules (colchicine analogs), chiefly by CBS interactions, a known druggable site, still a target in the search for antimitotic compounds.
Palabras claves	Microtubules, Phytotoxicity, Tubulin-models.

Revista	**QUESTION**
Volumen	3
Número	71
ISSN	ISSN: 1669-6581
DOI	10.24215/16696581e685
Título del Artículo	Hypertext, multimedia and interactivity in the cyberjournalism: The website of the Tabasco Hoy newspaper
Autores e instituciones de adscripción	Rodríguez, FCD [1]; Martínez, VG [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Educ & Artes, Villahermosa, Tabasco, México

Resumen	A study of a regional newspaper's digital resources is presented in reference to the use and limitans of its hypertext, its multimedia and its interactivity, variables which are inherent to cyberjournalism. The publications of the newspaper were followed up from October to December 2021 using quantitative content analysis. A data collection instrument was designed in order to observe the way and the frequency in which these resources are used in its digital platform. It is concluded that the newspaper's website has partially and unevenly developed the characteristics of cyberjournalism. The journalistic elements that constitute these genres due to the informative nature of their content are usually brief in text, marginalize their hypertextual and intranodal structure and their capacity to give strength through multimedia resources.
Palabras claves	Hypertextuality, Multimediality, Interactivity.

Revista	**INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH**
Volumen	19
Número	22
ISSN	eISSN: 1660-4601
DOI	10.3390/ijerph192214735
Título del Artículo	High Serum Levels of IL-6 Are Associated with Suicide Attempt but Not with High Lethality Suicide Attempts: A Preliminary Case–Control Study
Autores e instituciones de adscripción	Castillo-Ávila, RG [1]; Genis -Mendoza, AD [2]; Juárez- Rojop, IE [1]; López -Narváez, ML [3]; Dionisio- García, DM [1]; Nolasco-Rosales, GA [1]; Ramos-Méndez, MA [1]; Hernández -Díaz, Y [4]; Tovilla-Zárate, CA [5]; González-Castro, TB [4]; Nicolini, H [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Salud, Villahermosa 86100, Tabasco, México [2] Inst Nacl Med Genom, Lab Genom Enfermedades Psiquiatr & Neurodegenerat, Ciudad De México 14610, México [3] Hosp Chiapas Nos Une Dr. Gilberto Gómez Maza, secretaria Salud, Tuxtla Gutiérrez 29045, México [4] Univ Juárez Autónoma Tabasco, Div Academ Multidisciplinaria Jalpa de Méndez, Jalpa De Méndez 86040, México [5] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Comalcalco, Comalcalco 86040, México
Resumen	Suicide attempts are an emerging health problem around the world. Increased levels of IL-6 have been associated with suicidal behavior. Therefore, the aims of this study were to evaluate the serum levels of IL-6 in individuals with suicide attempts and a comparison group and to associate the IL-6 levels with the lethality of the suicide attempt. Additionally, we associated the rs2228145 polymorphism of the *IL6R* gene with suicide attempts or with the IL-6 serum levels. Suicide attempts and their lethality were evaluated using the Columbia Suicide Severity Rating Scale. The serum concentrations of IL-6 were measured by the ELISA technique in individuals with suicide attempts and then compared to a control group. The rs2228145 polymorphism of the *IL6R* gene was analyzed by real-time polymerase chain reaction. We found elevated serum levels of IL-6 in the suicide attempt group when compared to the control group ($F = 10.37$, $p = 0.002$). However, we found no differences of the IL-6 levels between high and low lethality. The *IL6R* gene polymorphism rs2479409 was not associated with suicide attempts. Our data suggest that IL-6 serum is increased in individuals with suicide attempts.
Palabras claves	Polymorphism, IL6R gene, Lethality.

Revista	**ENEUROBIOLOGIA**
Volumen	13
Número	32
ISSN	ISSN: 2007-3054
DOI	n/a
Título del Artículo	Glucose transport in glial cells from obese brain

Autores e instituciones de adscripción	Gabriel, LR [1]; Orquidia, MF [1]. [1] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Salud, Villahermosa 86690, Tabasco, México
Resumen	The pandemic of metabolic diseases, associated with the recent nutritional transition and sedentary lifestyle, affects the health of the individual and modifies the functionality of the brain. Widespread low-grade inflammation (chronic and systemic immune dysregulation, associated with adipose tissue) during metabolic conditions triggers neurodegeneration, brain aging, and cognitive decline. These functional changes are correlated with low metabolic rate, neuronal loss, and reactive gliosis. The objective of the present work was to condense and analyze the information regarding the participation of glucose transport of glial lineages, during the maintenance of metabolic homeostasis in the obese brain. For this purpose, we reviewed the PubMed database and gathered the most recent information on it. We conclude that pro-inflammatory cytokines and chemical mediators of food are involved in the modulation of the main glucose transporters (GLUT1 - GLUT5) in the glial cells of the brain, in addition to being related to the decrease in the expression of the main transporter of the blood-brain barrier, GLUT1, and the starvation condition in the brain. The molecular mechanisms involved in obesity share a great resemblance to the metabolic changes in overweight and under conditions of excess malnutrition. These early dysregulations are linked to the brain's low metabolic rate, neurodegeneration, and may also explain the identified changes in behavior and cognition that are associated with the obese brain.
Palabras claves	Obesity, Metabolism, Glial Cells.

Revista	**REVISTA DE LA UNIVERSIDAD DEL ZULIA**
Volumen	13
Número	38
ISSN	ISSN: 0041-8811 eISSN: 2665-0428
DOI	10.46925//rdluz.38.22
Título del Artículo	Globalization and its Effects on the Harmonization of Financial Information for Small and Medium Enterprises.
Autores e instituciones de adscripción	Muibo, AVC [1]; Prats, GM [2]; Guzmán, CA [1]. [1] Univ Juárez Autónoma Tabasco, Estudios Econ Adm, Villahermosa, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	Small and medium-sized enterprises represent a preponderant part of developed and developing economies. As a consequence of globalization and its importance for economies, the need to harmonize and standardize financial information is essential for this business segment. The adoption of International Financial Reporting Standards (including International Accounting Standards) will allow the financial statements prepared by small and medium-sized enterprises to be comparable in different countries of the world. The main objective of the article is to analyze the effect of globalization on the harmonization of the financial information of small andmedium-sized enterprises, through a documentary review to check the recent international solutions for the achievement of their activity. The article is developed from a qualitative approach, with a descriptive scope. For the collection of information, databases such as EBSCO, Elsevier, Emerald, Scopus, Google Scholar and Science Direct stand out. The study shows that the implementation of the International Financial Reporting Standards is observed in many countries in the world, although many others still do not use them, it is expected that they will be able to implement them in the near future.
Palabras claves	Financial Information, Accounting Standards, Standardization.

Revista	**INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH**
Volumen	19
Número	14
ISSN	eISSN: 1660-4601
DOI	10.3390/ijerph19148840
Título del Artículo	Gender Differences in Suicide and homicide rates in Mexico City during 2019
Autores e instituciones de adscripción	Nicolini, H [1]; Sánchez -de la Cruz, JP [2]; Ávila, RGC [3]; López -Narváez, ML [4]; González -Castro, TB [5]; Chávez -Manjarrez, S [1]; Montes-de-Oca, JE [1]; Magaña, JM [1]; Tovilla-Zárate, CA [1]; Mendoza, ADG [1,6]. [1] Inst Nacl Med Genom, Lab Genom Enfermedades Psiquiatr & Neurodegenerat, Ciudad De México 14610, México [2] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Comalcalco, Comalcalco 86658, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Salud, Villahermosa 86100, Tabasco, México [4] Hosp Chiapas Nos Dr. Gilberto Gómez Maza, secretaria Salud Chiapas, Tuxtla Gutiérrez 29045, México [5] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Jalpa de Méndez, Jalpa De Méndez 86205, México [6] Hosp Psiquiatr Infantil Juan N Navarro, Serv Atenc Psiquiatr, México City 14080, DF, México
Resumen	Suicides and homicides are public health problems around the world. The rates of suicide and homicide have increased in the past years. The objectives of this study are to estimate the rates of suicide and homicide in Mexico City, and to determine the rates of suicide and homicide by sex in the different municipalities of Mexico City during 2019. Data analyzed were obtained from files of governmental organizations in Mexico City. From the general victims-in-research-folders, we choose "victims of crime" or "loss of life by suicide" that happened in 2019. Sex and municipality of residence were obtained. The rate of suicide was of 5.65 cases per 100,000 habitants. Stratified by gender and by municipalities, the highest rates observed were 6.8 suicides per 100,000 males and 29.6 suicides per 100,000 females. The sex ratio was 4.2:1 (males: females). Regarding homicides, the rates were 16.68 homicides per 100,000 females and 67.41 homicides per 100,000 males. The Venustiano Carranza Municipality showed the highest homicide rate in men with 131.72 homicides per 100,000 males. The homicide sex ratio was 7.8:1. The findings of the present study highlight that death by suicide is more common in men with 7.8 more times than in women. The municipalities with higher deaths by suicide have lower rates of homicides and the municipalities with higher deaths by suicide showed lower rates of suicide in men.
Palabras claves	Homicide, Mexico City, Rates and Gender.

Revista	**VETERINARY PARASITOLOGY- REGIONAL STUDIES AND REPORTS**
Volumen	28
Número	n/a
ISSN	ISSN: 2405-9390
DOI	10.1016/j.vprsr.2021.100682
Título del Artículo	First report and risk of infection of Fasciola hepatica (Linnaeus, 1761) in water buffaloes (Bubalus bubalis - Linnaeus, 1758) in Mexico
Autores e instituciones de adscripción	Ojeda- Robertos, NF [1]; Peralta-Torres, JA [1]; Parra-Bracamonte, GM [2]; Cruz-González, AR [1]; Luna-Palomera, C [1]; Ulin-Yzquierdo, C [1]; Pires, LA [3]; Molento, MB [3]. [1] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Agr, Carretera VHSA Teapa Km 25, Villahermosa 86290, Tabasco, México [2] Inst Politecn Nacl, Ctr Biotecnol Genom, BLVD Maestro SN, Esq Elias Pina, Col Narciso Men, Reynosa 88710, Tamaulipas, México [3] Univ Fed Parana, Lab Parasitol Clin Vet, Setor Ciencias Agrarias, Rua Funcarios 1540, BR-80035050 Curitiba, PR, Brazil
Resumen	The aim of this study was to determine the prevalence and risk of Fasciola hepatica infection in water buffaloes (*Bubalus bubalis*) during peripartum in southeastern Mexico. An observational study was designed, in which 94 pregnant buffalo cows near calving and naturally exposed to *F. hepatica* were included. Farm visits were made on days 60, 30, 15 prepartum, at calving, and on days 15 and 30 postpartum. Feces were obtained from all animals to confirm the presence of *F. hepatica* eggs A group of 49 animals was randomly treated twice at day 60 prepartum and at. calving with nitroxynil and the other group (*n* = 45) was kept untreated. Buffaloes

Resumen	would be treated once presenting a positive coproparasitological diagnosis up to 30 days postpartum. *F. hepatica* was detected in 5.3% of the buffaloes (5/94) with a prevalence between 1.7 and 12%. It was observed that treated buffaloes had a lower risk (4.08%) of being positive than untreated buffaloes (6.67%) (P > 0.05). It was also found that untreated animals had 1.6 times more risk of being positive than treated buffaloes. This paper presents the first report of *F. hepatica* in water buffaloes in Mexico, demonstrating that the two preventive treatments reduced *F. hepatica* egg shedding during parturition. These findings highlight the need for monitoring for *F. hepatica* even in unreported/silent potential disease areas.
Palabras claves	Infection risk, Epidemiology, Liver fluke.

Revista	**INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY**
Volumen	20
Número	n/a
ISSN	ISSN: 1735-1472 eISSN: 1735-2630
DOI	10.1007/s13762-022-04616-8
Título del Artículo	Fertility impacts in crude oil-contaminated soil based on type and quantity of clay
Autores e instituciones de adscripción	G. Álvarez-Coronel[1], V. I. Domínguez-Rodríguez[1]; R. H. Adams[1], D. J. Palma-López[2], J. Zavala-Cruz[2]; & J. A. Gaspar-Génico[1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Carretera Villahermosa Cárdenas Km 0-5, Villahermosa 86150, Tabasco, México [2] Colegio Postgrad, Campus Tabasco, Perifer Carlos A Molina S-N AP 24, Cárdenas 86500, Tabasco, México
Resumen	Artificial soil mixtures were prepared with 10–40% of either kaolinite or bentonite clay, plus *Sphagnum* moss, and clean sand. Mixtures were placed in plastic containers in the field, and let mature for six months (in a tropical climate). They were then contaminated with 3% of either light, medium or heavy crude oil, and let weather for another six months. Afterward, compaction was measured in the field, and core samples were taken for laboratory determinations. No correlation was found between soil density and compaction, and it appeared that some of the density determinations were unreliable due to interferences from the petroleum. Compaction was low (<0.5 MPa) for smectite-based soil, but much higher (up to 1.24 MPa) in kaolinite-based soil, especially with higher clay levels contaminated with heavy crude. Water repellency for kaolinite-based soil was low to null (especially for 30 and 40% clay), but repellency for smectite-based soil was three orders of magnitude higher, in the severe to extreme range. However, it is uncertain whether these laboratory determinations on smectite-based soils could be applied to the field. Regional, smectite-rich soils tend to be moist and low-lying in the landscape, unlikely to manifest water repellency, even during the dry season. Field capacity in smectite-based soil showed low impacts (reductions of 0–1% of moisture content with higher amounts of clay), but kaolinite-based soil showed considerable reduction, especially at 30% clay (being 15% less). The importance of these results for contamination, characterization and remediation of regional soils is discussed, as well as recommendations for future research.
Palabras claves	Soil, Oil contamination, Fertility.

Revista	**JOURNAL OF BUILDING PHYSICS**
Volumen	46
Número	3
ISSN	ISSN: 1744-2591 eISSN: 1744-2583
DOI	10.1177/17442591221127279
Título del Artículo	Experimental study and numerical analysis of radiative losses of single-channel solar chimney

Autores e instituciones de adscripción	Torres-Aguilar, CE [1]; Arce, J [1]; Xamán, J [1]; Macías -Melo, EV [2]. [1] Tecnol Nacl México, CENIDET, Pról. Av. Palmira S-N Col Palmira, Cuernavaca 62490, Morelos, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ingn & Arquitectura DAIA UJAT, Carretera Cunduacán Jalpa de Méndez Km 1, Cunduacán, Tabasco, México
Resumen	Solar chimneys provide natural ventilation for buildings, reducing the energy consumption of mechanical systems. Therefore, analyzing energy losses through solar chimney components and inlet/outlet of air channel is critical to develop a suitable design for this passive ventilation system. In this study, the performance and energy losses analysis of a single-channel solar chimney (SC-SOCH) is described; a parametric study under laboratory conditions was conducted regarding the air gap (0.10, 0.15, and 0.20 m) and heat flux of absorber plate (100, 200, 300, 400, and 500 Wm^{-2}). The energy losses were analyzed with temperature sensors, heat flow transducers, and a net radiation transfer model. The parametric study results showed that between 10% and 15% of the total energy supplied to the absorber plate was dissipated to the laboratory environment through the glass cover. Furthermore, combining the different thermal insulation layers on the backside of the absorber plate and sidewalls of the air channel permitted only energy losses below 8% of the total energy supplied. The highest energy losses occurred due to radiative exchange; the radiative losses through the inlet and outlet of the air channel were between 9.38% and 25.78% of the total energy supplied. However, the radiative energy loss rate decreased as airflow increased; the volumetric flow rate was from 34.11 to 94.92 m^3h^{-1}, which was enough to satisfy the requirements of total ventilation rate for spaces of 9, 18, and 36 m^2 according to ASHRAE 62.2–2019. Therefore, solar chimney designs must be optimized to minimize energy losses and increase airflow for natural ventilation.
Palabras claves	Radiative losses, Airflow, Natural ventilation.

Revista	**FERMENTATION-BASEL**
Volumen	8
Número	10
ISSN	eISSN: 2311-5637
DOI	10.3390/fermentation8100511
Título del Artículo	Evaluation of Three Marine Algae on Degradability, In Vitro Gas Production, and CH4 and CO2 Emissions by Ruminants
Autores e instituciones de adscripción	Lee-Rangel, HA [1]; Roque- Jiménez, JA [1,2]; Cifuentes-López, RO [1]; Álvarez -Fuentes, G [1]; De la Cruz- Gómez, A [1]; Martínez -García, JA [2]; Arévalo -Villalobos, JI [1]; Chay-Canul, AJ [3]. [1] Univ Autónoma San Luis Potosí, Fac Agron & Vet, Ctr Biociencias, Inst Invest Zonas Desert, Km 14-5 Carr San Luis Potosí Matehuala, San Luis Potosí 78321, San Luis Potosí, México [2] Univ Autónoma Metropolitana Xochimilco, Dept Prod Agr & Anim, México City 04960, DF, México [3] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Agr, Km 25, R-A La Huasteca 2a Secc, Villahermosa 86280, Tabasco, México
Resumen	Livestock production systems are responsible for producing ~18% of the total anthropogenic greenhouse gas (GHG) emissions. Numerous alternatives, such as feed additives or supplements, have been proposed to meet these challenges. Marine algae have been proposed for gas reduction in ruminants; nevertheless, there are still very few experimental reports. Thus, the objective of the current study was to identify the volatile organic compounds (VOCs) in three marine algae—Kelp (*Macrocystis pyrifera*), Ulva (*Ulva spp.*), and Silk (*Mazzaella spp.*)—and to test their in vitro ruminal fermentation characteristics, gas profiles, and ability to mitigate biogas production. The evaluation of the VOCs in marine algae was performed using a flash gas chromatography electronic nose (FGC-E-Nose). The in vitro study was elaborated through in vitro incubation and gas production. The data obtained were analyzed using a completely randomized design. In total, forty-three volatile compounds were identified for Kelp algae, thirty-eight were identified for Ulva algae, and thirty-six were identified for Silk algae; the compounds were from different chemical families and included aromas, alcohols, aldehydes, phenolics, carboxylic acids, esters, and nutraceutical properties.

Resumen	Dry matter degradability was significantly ($p < 0.05$) affected by the algae type. The cumulative ruminal gas production was different ($p < 0.05$) between treatments. Kelp algae presented a major (V; $p < 0.05$) volume of gas produced compared to the other algae. Lag time (l; $p < 0.05$) was increased by Kelp alga; however, there were no differences ($p>0.05$) between the Silk and Ulva algae. The gas production rate was higher (s; $p < 0.05$) for Silk algae compared to the others. Ulva and Silk algae demonstrated a significant ($p < 0.05$) decrease in carbon dioxide emissions. Nevertheless, Kelp algae reduced the proportional methane (CH_4) production ($p < 0.05$) after 48 h of incubation, with the lowest emission rate of 47.73%. In conclusion, algae have numerous bio compounds that provide some properties for use in ruminant diets as additives to reduce methane and carbon dioxide emissions.
Palabras claves	Ruminant, Methane, Volatile Organic Compounds.

Revista	**REMOTE SENSING APPLICATIONS-SOCIETY AND ENVIRONMENT**
Volumen	25
Número	n/a
ISSN	ISSN: 2352-9385
DOI	10.1016/j.rsase.2021.100664
Título del Artículo	Evaluating the best spectral indices for burned areas in the tropical Pantanos de Centla Biosphere Reserve, Southeastern Mexico
Autores e instituciones de adscripción	Pérez, CC [1]; Olthoff, AE [1]; Hernández -Trejo, H [1]; Rullán -Silva, CD [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Ctra. Villahermosa Cárdenas, Km 0-5, Tabasco, México
Resumen	Tropical wetlands are ecosystems of great ecological importance, but their loss has accelerated in recent decades. Even though its hydrological, geological, and chemical characteristics make the Pantanos de Centla Biosphere Reserve (PCBR) the most significant wetland in Mesoamerica, it is the worst affected by forest fires area each year of Tabasco, México. Satellite remote sensing is proposed as a cost-effective alternative to locate and delimit fire-affected surfaces in these difficult-to-access environments more precisely. The objective of the present study was to determine the optimal Landsat 8 spectral index for the detection of burned areas within the PCBR. It was possible to identify and extract 41 disturbed areas in six years. These areas were submitted to calculate six spectral burn indices, widely tested in detecting fire scars in forest areas, BAI, MIRBI, NBR, NBR2, NBRT1, NBRT3, including the best-known vegetation index NDVI. The capacity of each index to discriminate burned areas was estimated by comparing them with each other by using a separability index. The comparisons of the annual coefficients of variation allowed the evaluation of separability dispersion, indicating how homogeneous each index was. MIRBI was identified as the index with the highest potential for discrimination of burned areas in the PCBR, followed by far by NBR2. It is expected that these results can serve, among other things, to characterize, evaluate and prioritize monitoring areas to contribute by updating and improving the fire management plan in the PCBR. They are also expected to help subsequent studies on fire dynamics associated with human activities that cause and impact fire, such as burn severity, biomass loss, and post-fire vegetation regeneration.
Palabras claves	Wildfires, Spectral burn detection, MIRBI index.

Revista	**ANIMALS**
Volumen	12
Número	22
ISSN	ISSN: 2076-2615
DOI	10.3390/ani12223154
Título del Artículo	Effects of the Inclusion of Ground Pouteria sapota Kernel on Intake, Digestibility, and Growth Performance in Lambs

Autores e instituciones de adscripción	Sánchez -Zárate, A [1]; Chay-Canul, AJ [2]; Aguilar- Urquizo, E [1]; Sanginés -García, JR [1]; Moo -Huchin, VM [3]; Vargas-Bello- Pérez, E [4]; Pineiro- Vázquez, AT [1]. [1] Inst Tecnol Conkal, Div Estudios Posgrad & Invest, Tecnol Nacl México, Conkal 97345, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Agr, Villahermosa 86040, Tabasco, México [3] Inst Tecnol Mérida, Tecnol Nacl México, Mérida 97118, Yucatán, México [4] Univ Reading, Sch Agr Policy & Dev, Dept Anim Sci, POB 237, Reading RG6 6EU, Berks, England
Resumen	The concept of sustainable diets that are profitable, ethical, socioculturally acceptable, and environmentally beneficial is emerging as one of the key solutions to ensure the efficiency of livestock production systems. In this regard, agro-industrial by-products obtained from fruit processing have emerged as an alternative. Mamey pulp generates residual biomass from which the kernel is the main by-product that, due to its composition, can be used as ruminant feed. This study determined the effects of the inclusion of ground mamey kernel on intake, digestibility, and growth performance in lambs. No effects on nutrient intake or productive performance were observed. However, protein and fiber digestibility were reduced by ground mamey kernel inclusion. These findings suggest that mamey kernels can be included in ruminant diets. This study determined the effect of replacing ground corn and soybean meal with ground *Pouteria sapota* kernel (PSSM) in lamb diets on nutrient intake and digestibility, performance, and carcass traits. Twenty-one male hair sheep lambs with an average body weight of 22 ± 3.5 kg were randomly assigned to three treatment diets containing PSSM at 0, 10, and 20% of the total dry matter (DM) inclusion. The study lasted 60 days, which included 15 days for adaption and 45 days for sample collection. The PSSM inclusion did not affect intake or performance ($p > 0.05$). However, ether extract (EE) digestibility linearly increased ($p < 0.0001$), while crude protein (CP) and acid detergent fiber (ADF) linearly decreased. Final body weight, total weight gain, average daily weight gain, feeding efficiency, and carcass traits were not affected by PSSM inclusion. In conclusion, these results suggest that PSSM can replace up to 200 g/kg DM of ground corn and soybean meal without affecting intake or animal performance.
Palabras claves	Growth performance, Hair sheep, Tropical regions.

Revista	**ITALIAN JOURNAL OF ANIMAL SCIENCE**
Volumen	21
Número	1
ISSN	ISSN: 1594-4077 eISSN: 1828-051X
DOI	10.1080/1828051X.2022.2121667
Título del Artículo	Effects of slaughter age and gender on carcase characteristics and meat quality of native Mexican Turkey (M. g. gallopavo) reared under an extensive production system
Autores e instituciones de adscripción	Portillo-Salgado, R [1]; Herrera-Haro, JG [1]; Bautista-Ortega, J [2]; Chay-Canul, AJ [3]; Ramírez- Bribiesca, JE [1]; Ortega-Cerrilla, ME [1]; Flota- Bañuelos, C [4]; Cigarroa- Vázquez, FA [5]. [1] Colegio Postgrad, Programa Ganadería, Texcoco, México [2] Colegio Postgrad, Dept Ciencias Agr, Champotón, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Agr, Villahermosa, Tabasco, México [4] CONACyT Colegio Postgrad, Champotón, México [5] Univ Autónoma Chiapas, Escuela Estudios Agropecuarios Mezcalapa, Copainalá, México
Resumen	The study aimed to investigate the effects of slaughter age and gender on carcase characteristics and meat quality of native Mexican turkeys raised under an extensive production system. Forty-five native turkeys (36 males and 9 females) were used. They were sacrificed at 24, 32, and 40 weeks of age. Slaughter age significantly affected slaughter weight (SW), hot carcase weight (HCW) and cold carcase weight (CCW). Also, dressing percentages, non-carcase components, internal organs, abdominal fat, and most carcase parts and proportions were affected. Gender significantly affected SW, HCW and CCW, non-carcase components, internal organs, and carcase parts weights. Regarding the physical properties of breast and

Resumen	leg meat, pH values and colour parameters taken at 45 min and 24 h *post-mortem*, as well as the water-holding capacity (WHC), cooking (CL), and drip loss (DL), were significantly affected by slaughter age, except CL in leg meat. Meanwhile, gender influenced L^*_{45min}, b^*_{24h}, the pH_{24h} values, and CL in breast meat. Concerning the chemical composition of the meat, slaughter age had a significant effect on the ether extract (EE) content of breast meat and on dry matter (DM), crude protein (CP), EE, ash, and energy contents of leg meat. Gender significantly affected the DM, CP, and energy contents of breast meat and DM, EE, and energy contents of leg meat. These results indicate that the carcase weight and yield, and its components, as well as meat quality, were better in older male turkeys than in adult females.
Palabras claves	Native Mexican turkeys, Poultry genetic resource, Slaughter age.

Revista	**INTERNATIONAL JOURNAL OF PSYCHIATRY IN CLINICAL PRACTICE**
Volumen	27
Número	2
ISSN	ISSN: 1365-1501 eISSN: 1471-1788
DOI	10.1080/13651501.2022.2100264
Título del Artículo	Effect of risperidone on serum IL-6 levels in individuals with schizophrenia: a systematic review and meta-analysis
Autores e instituciones de adscripción	Ramos- Méndez, MA [1]; Tovilla-Zárate, CA [2]; Juárez- Rojop, IE [1]; Villar-Soto, M [3]; Genis -Mendoza, AD [4]; González -Castro, TB [5]; López -Narváez, ML [6]; Martínez- Magaña, JJ [4]; Castillo-Ávila, RG [1]; Villar- Juárez, GE [7]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Salud, Villahermosa, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Comalcalco, Comalcalco, México [3] Hosp Reg Alta Especialidad Salud Mental, Villahermosa, Tabasco, México [4] Inst Nacl Med Genom, Lab Genom Enfermedades Psiquiatr & Neurodegenerat, Ciudad De México, México [5] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Jalpa de Méndez, Jalpa De Méndez, México [6] Hosp Chiapas Une Dr. Gilberto Gómez Maza, secretaria Salud Chiapas, Tuxtla Gutiérrez, México [7] Univ Anáhuac Querétaro, Escuela Ciencias Salud, Querétaro, México
Resumen	Background Risperidone has been significant correlated with a direct effect of interleukin-6 (IL-6) levels in patients with schizophrenia. This fact allows the opportunity to link the probable immunomodulatory effect of antipsychotic medication. Specially, a proper functioning of IL-6 pathway plays a potential role in the treatment or development of schizophrenia. Objective Our primary aim was to perform a systematic review and meta-analysis to determine the effect of risperidone on IL-6 levels in individuals with schizophrenia. Methods Studies were identified through a systematic search using PubMed, Scopus, and Web of Science databases. The articles found were subjected to the inclusion and exclusion criteria; then, the mean and standardised differences were extracted to calculate the standardised mean differences using the CMA software. Results IL-6 levels in individuals with schizophrenia were compared before and after receiving risperidone as treatment. Increased levels of IL-6 levels were observed in individuals with schizophrenia who received risperidone (point estimate 0.249, lower limit 0.042, upper limit 0.455, *p*-value 0.018). In the Asian population sub-analysis, no statistically significant differences were observed (point estimate 0.103, lower limit −0.187, upper limit 0.215, p value 0.890). When we compared individuals with schizophrenia to the control groups, a significant increase of IL-6 levels was observed in the group with schizophrenia (point estimate 0.248, lower limit 0.024, upper limit 0.472, *p*-value 0.30). Conclusions Risperidone appears to play an important role in IL-6 levels in schizophrenia. Potential implications of increased IL-6 levels in people with schizophrenia should be considered in future studies.
Palabras claves	Schizophrenia, IL-6 levels, Meta-analysis.

Revista	**FRONTIERS IN VETERINARY SCIENCE**
Volumen	9
Número	n/a
ISSN	eISSN: 2297-1769
DOI	10.3389/fvets.2022.980619
Título del Artículo	Effect of different dietary inclusion levels of whole plant green tomato (*Physalis philadelphica*) silage on nutrient intake and digestibility, and in vitro rumen fermentation kinetics in sheep
Autores e instituciones de adscripción	Robles- Jiménez, LE [1]; Narváez- López, AC [2]; Chay-Canul, AJ [2]; Sainz-Ramírez, A [1]; Castelán -Ortega, OA [1]; Zhang, NF [3]; González -Ronquillo, M [1]; Vargas-Bello- Pérez, E [4]. [1] Univ Autónoma Estado México, Fac Med Vet & Zootecnia, Dept Prod Anim, Toluca, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Agr, Villahermosa, Tabasco, México [3] Chinese Acad Agr Sci, Key Lab Feed Biotechnol, Minist Agr & Rural Affairs, Inst Feed Res, Beijing, Peoples R China [4] Univ Reading, Sch Agr, Dept Anim Sci, Reading, Berks, England
Resumen	Mexico has many agricultural by-products that can be used for animal feed, and green tomatoes are produced throughout the country and can be an alternative to overcome the high prices of cereal-based feeds. This study determined *in vitro* fermentation kinetics, production performance, nutrient intake, digestibility, and nitrogen balance from sheep supplemented with whole plant green tomato (GT) on corn silage (CS) based diets. For 21 days, eighteen Suffolk lambs (38 ± 4 kg of live weight) were grouped into three dietary GT inclusion levels to replace CS: a control diet based on 100% CS (GT0, 570 g /kg dry matter, DM), while 100 g/kg DM (GT100) and 200 g/kg DM (GT200) of GT were included as a replacement for CS. A completely randomized design was used to measure *in vitro* gas production, *in vitro* rumen fermentation, chemical composition, and *in vivo* parameters. *In vitro* gas production, “A” (ml/g DM), fermentation rates “B,” (h^{-1}), and “C” ($h^{-½}$), were lower for GT200, while DM disappearance (mg/100mg) was lower for GT100 compared with GT0. Compared to GT0, GT100 and GT200 did not affect ($P > 0.05$) DM and organic matter (OM) intake ($g/kg^{LW0.75}$). Ether extract intake was higher for GT0 and GT100 ($P < 0.001$) compared to GT200. Neutral detergent fiber (NDF) intake was higher ($P < 0.05$) for GT200 compared with GT0. Intake of lignin was higher ($P < 0.001$) for GT200 than that of GT0 and GT100. Digestibility coefficients for DM, OM, NDF, and Acid detergent fiber (ADF) were lower ($P < 0.05$) in GT100 than in the rest of the treatments. Nitrogen intake and N excreted in feces and urine were lower ($P < 0.001$) for GT0. N balance was negative for all treatments, being higher for GT200 ($P < 0.05$). Overall, the addition of GT at 100 or 200 g/kg DM in sheep diets negatively affects nutrient digestibility and N balance, so their dietary inclusion is not recommended.
Palabras claves	Sheep, Fermentation Kinetics, Crop Residues.

Revista	**ECOSISTEMAS Y RECURSOS AGROPECUARIOS**
Volumen	9
Número	1
ISSN	ISSN: 2007-901X
DOI	10.19136/era.a9n1.3018
Título del Artículo	Effect of Zilpaterol and Ractopamine on biometric parameters and muscle fiber thickness in Pelibuey lambs
Autores e instituciones de adscripción	Rivera-Alegría, FM [1,3]; Téllez-Medina, DI [1]; Cardador-Martínez, A [2]; Cruz-Hernández, A [3]; Álvarez- González, CA [4]; Piña-Gutiérrez, JM [3]; Jiménez -Martínez, C [1]. [1] Inst Politecn Nacl, Escuela Nacl Ciencias Biol, Unidad Profes Adolfo López Mateos, Av. Wilfrido Massieu Esq Cda Miguel Stampa S-N, Ciudad De México 07738, México [2] Tecnol Monterrey, Dept Bioingn, Av Epigmenio González 500, Querétaro 76130, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Agr, Km 25 Carretera Villahermosa Teapa, Villahermosa 86298, Tabasco, México [4] Univ Juárez Autónoma Tabasco, Div. Acad Ciencias Biol. Carretera Villahermosa Cárdenas Km 0-5 S-N, Villahermosa 86150, Tabasco, México [5] Av Univ S-N, Villahermosa 86040, Tabasco, México

Resumen	The objective of this study is to evaluate the effect ofβ-agonists (BA), Zilpaterol Hydrochloride (ZH), and Ractopamine Hydrochloride (RH) on the biometric parameters and the muscle fiber thickness in Pelibuey lambs (n = 6). The control group was fed a standard diet (16% protein content and 12 MJ per day); treatment groups received a standard diet supplemented with ZH or RH for 37 days and was assessed presence of BA in samples of muscle tissues, and urine. The effect of Daily Weight Gain (DWG) and Food Conversion Rate (FCR) on muscle fiber thickness was determined by Scanning Electron Microscopy (SEM) and Digital Image Analysis (DIA). Results showed an increase of 30% in DWG in the ZH group, compared with RH. While FCR was lower in ZH (3.83) than in RH (4.85). In both BA treatments, the withdrawal time was sufficient to minimize drug concentration in meat. In contrast with the control group, muscle fiber thickness increased in BA treated groups (ZH = 69.2%, and RH = 15.6%). In conclusion, ZH displayed a higher carcass yield in Pelibuey lambs.
Palabras claves	Digital Image Analysis, Meat, Pelibuey sheep.

Revista	**ANIMALS**
Volumen	12
Número	19
ISSN	ISSN: 2076-2615
DOI	10.3390/ani12192588
Título del Artículo	Effect of Adding Extra Virgin Olive Oil to Hair Sheep Lambs' Diets on Productive Performance, Ruminal Fermentation Kinetics and Rumen Ciliate Protozoa
Autores e instituciones de adscripción	Arcos-Álvarez, DN [1]; Aguilar-Urquizo, E [1]; Sanginés-García, JR[1]; Chay-Canul, AJ[2]; Molina-Botero, I [3]; Tzec-Gamboa, M [4]; Vargas-Bello-Pérez, E [5]; Piñeiro-Vázquez, AT [1]. [1] Tecnol Nacl México, Campus Conkal, Ave Tecnol S-N, Conkal 97345, Yucatán, México [2] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Agr, Carretera Villahermosa Teapa, Km 25, Villahermosa 86280, Tabasco, México [3] Univ Agr La Molina, Fac Zootecnia, Dept Nutr Anim, Lima 15024, Perú [4] Univ Autónoma Yucatán, Fac Med Vet & Zootecnia, Mérida 97300, Yucatán, México [5] Univ Reading, Sch Agr Policy & Dev, Dept Anim Sci, POB 237, Reading RG6 6EU, Berks, England
Resumen	The use of added lipids in the diets of ruminants has been found to have beneficial effects. In this study, the effects of different doses of extra virgin olive oil on the productive traits and ruminal fermentation parameters in lambs were evaluated. The relationship between nutrient intake and digestibility was optimal with 2% oil inclusion. The concentration of propionic acid increased with 2 and 4% DM of olive oil, while butyric acid decreased. The intake of olive oil did not affect the population of protozoa or animal performance. The inclusion of olive oil in low concentrations (2% of DM) positively influences feed intake and nutrient digestibility in hair sheep lambs. This study determined productive performance, ruminal fermentation kinetics and rumen ciliate protozoa in hair sheep lambs fed different levels of olive oil. Twenty-four growing lambs were used, with an initial live weight of 10.5 ± 2.9 kg, and randomly assigned into four treatments (six animals per treatment) containing increasing levels of extra virgin olive oil (0, 2, 4 and 6% of dry matter). Animals were fed for 80 days, and sampling was carried out weekly. Intake of dry matter (DM), organic matter (OM), crude protein (CP), neutral detergent fiber (NDF), acid detergent fiber (ADF) and metabolizable energy (ME) differed between treatments ($p < 0.05$), with a linear and cubic tendency to decrease when oil concentrations were increased. Digestibility coefficients of OM, CP and NDF were not affected; however, the relationship between total intake and nutrient digestibility (DM, OM, NDF, ADF) increased with 2% DM olive oil. Compared with all treatments, the concentration of propionic acid increased by 16% with 4% olive oil. The intake of olive oil did not affect the protozoa population and live weight gain. Overall, the inclusion of olive oil in low concentrations (2% of DM) positively influences feed intake and nutrient digestibility in hair sheep lambs.
Palabras claves	Supplementation, Conjugated Linoleic Acid, Ruminants.

Revista	**ESTUDIOS FRONTERIZOS**
Volumen	23
Número	n/a
ISSN	ISSN: 0187-6961 eISSN: 2395-9134
DOI	10.21670/ref.2221105
Título del Artículo	Eco-frontier building in the Maya Forest borderlands
Autores e instituciones de adscripción	Laako, H [1]; Muñoz, DR [2]; Alvarado, EP [3]; Márquez, B [4]. [1] Univ Eastern Finland, Dept Geog & Hist Studies, Joensuu, Finland [2] El Colegio Frontera Sur, San Cristóbal de las Casa, México [3] Ctr Invest & Estudios Super Antropol Social Sede, San Cristóbal de las Casa, México [4] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	The concept of eco-frontier examines the actions of ecological actors to analyze the ways in which these contribute to transform biodiversity-rich territories. Eco-frontiers are discursive and spatial appropriations that evolve in different historical stages. This article analyzes the case of the Maya Forest as an emerging eco-frontier since the 1970s. The Maya Forest is a concept constructed by ecological actors to conserve tropical rainforest that covers the border region between Mexico, Guatemala, and Belize. Based on analysis of various first-hand materials, the article shows how the construction of the Maya Forest-concept has transformed the borderland into a scenic eco-region subject to tropical conservation. Simultaneously, the appropriation of the Maya in its scientific and touristic dimension suggests the construction of international biocultural borderlands. However, the issue of indigenous rights, multicultural context and that of multispecies remain subject to debate.
Palabras claves	Ecological Actors, Territories, Mesoamerica.

Revista	**BOTANICAL SCIENCES**
Volumen	101
Número	1
ISSN	ISSN: 2007-4298 eISSN: 2007-4476
DOI	10.17129/botsci.3081Mt
Título del Artículo	Ecogeographical distribution and areas of occupancy of Castilla Elastica Cerv. in Mexico
Autores e instituciones de adscripción	Montero -Hernández, DB [1]; Vargas- Simón, G [1]; Núñez -Piedra, ML [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Villahermosa, Tabasco, México [2] Colegio Frontera Sur, Villahermosa, Tabasco, México
Resumen	Castilla elastica is a tree known since pre-Hispanic times for its latex production. It is an emblematic species for Mexico, imminent deforestation is a threat for its survival in Mexico and Tabasco. Questions: In which ecological conditions is C. elastica distributed in Mexico? In how many areas of occupancy is it located? Studied species: Castilla elastica Cerv. Study site and dates: The Mexico and the state of Tabasco, January-December 2019.Methods: Records were obtained from different virtual sources and in herbaria, also field visits in Tabasco. The distribution points were georeferenced, were converted to the shapefile format through the QGis 3.16.16 program. The areas of occupancy (AOO) were calculated according to the Cartographic method by conglomerates. Results: 615 records were obtained. It was found that the species is generally distributed in tropical areas of Mexico, mostly identified in Chiapas; its altitudinal range goes from 0-1,660 m. Associated with 11 soil units, forest ecosystems and agro-ecosystems. The total of the AOO

Resumen	consisted of 43 conglomerates and 20 satellites, which were located mainly in the Gulf of Mexico. Conclusions: Historically, C. elastica has a distribution on both sides in Mexico, prefers warm climates (A), de transition A(C) and Leptosol soils. Current records were established for Tabasco where it is found particularly in cocoa-plantations. The AO with the largest surface corresponds to Campeche, Yucatan, and Quintana Roo, coincides with the area of the Mesoamerican Biological Corridor; this work provides data on their ecological predilections that will serve for their sustainable conservation.
Palabras claves	Cartographic methods by Conglomerates, Ecological Requirements, Latex.

Revista	**CUADERNOS DE DESARROLLO APLICADOS A LAS TIC**
Volumen	11
Número	1
ISSN	ISSN: 2254-6529
DOI	10.17993/3ctic.2022.111.133-143
Título del Artículo	ENGINEERING CONTRIBUTIONS IN ARTIFICIAL INTELLIGENCE APPLIED IN EDUCATION
Autores e instituciones de adscripción	Hernández, FS [1]; Prats, GM [1]. [1] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	Engineering in Artificial Intelligence (AI) is multidisciplinary in nature that entails through an intelligent system the ability to perform actions independently based on algorithms. In the educational field, the contributions of the applicability of artificial intelligence represent challenges and opportunities in educational programs. This document aims to describe the contributions of some resources that strengthen educational quality from engineering in artificial intelligence with digital tools and technological innovation. In the face of a situation of constant changes, they represent a mechanism of action to work on the inequality gap with digital means and resources based on intelligent systems that undoubtedly in the process of transition in greater development and growth of every nation, copes with applying advances in science and technology in the education sector.
Palabras claves	Innovation, Social Responsibility, Technology.

Revista	**QUALITATIVE THEORY OF DYNAMICAL SYSTEMS**
Volumen	21
Número	2
ISSN	ISSN: 1575-5460 eISSN: 1662-3592
DOI	10.1007/s12346-022-00562-5
Título del Artículo	Dynamics of a Discrete-Time Predator-Prey System with Holling II Functional Response
Autores e instituciones de adscripción	Arias, CF [1]; Blé, G [1]; Falconi, M [2]. [1] UJAT, Div Acad Ciencias Básicas, Km 1 Carretera Cunduacán Jalpa Méndez, Cunduacán 86690, Tabasco, México [2] UNAM, Fac Ciencias, Dept Matemat, C De Méxic, 04510, México
Resumen	The dynamics behavior of a discrete-time predator–prey system, with Holling II functional response, is analyzed. The model shows a rich dynamical behavior in the feasible region. Some invariant sets are found and parameter conditions for the existence and stability of the fixed points are given. A parameter region where the system exhibits either a period-doubling or a Neimark–Sacker bifurcation is shown. In addition, conditions are provided on parameters that lead to chaotic dynamics. Finally, to illustrate our theoretical analysis some numerical simulations are shown.
Palabras claves	Holling II functional response, Local dynamics, Chaos.

Revista	**LATIN AMERICAN JOURNAL OF AQUATIC RESEARCH**
Volumen	50
Número	3
ISSN	ISSN: 1575-5460 eISSN: 1662-3592
DOI	10.3856/vol50-issue3-fulltext-2784
Título del Artículo	*Dormitator latifrons (Richardson*, 1844) a Pacific fat sleeper, but skinny in research: a scientometric study
Autores e instituciones de adscripción	Aréchiga -Palomera, MA [1]; Nieves- Rodríguez, KN [1]; Chong-Carrillo, O [1]; Nolasco-Soria, H [2]; Peña- Marín, ES [3,4]; Álvarez- González, CA [3]; Palma -Cancino, DJ [1]; Martínez -García, R [3]; Badillo-Zapata, D [4]; Vega- Villasante, F [1]. [1] Univ Guadalajara, Ctr Univ Costa, Dept Ciencias Biol, Lab Calidad Agua & Acuicultura Expt, Puerto Vallarta, Jalisco, México [2] Ctr Invest Biol Noroeste SC, La Paz, Baja California, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Lab Fisiol Recursos Acuat, Villahermosa, Tabasco, México [4] Consejo Nacl Ciencia & Technol, Programa Catedra CONACYT, Ciudad De México, México
Resumen	In order to provide information on the current knowledge about the native fish *Dormitator latifrons* and identify the gaps that must be filled to achieve correct resource management, a scientometric study was carried out using different scientific databases. A total of 103 publications were registered between the years 1972 and 2021. Results indicate that the species has been addressed since 2001 with less than one publication per year, with 2008 being the year with the highest number of publications (10). The main topics addressed were ecology, physiology, and parasitology of fish. The available knowledge generated about the species is concentrated in 68 journals, with Mexico as the most productive country, followed by USA and Ecuador, and the most productive research centers about this fish were Mexico's Instituto Politécnico Nacional and Universidad de Guadalajara. A total of 285 authors were detected contributing knowledge to the species, with Violante-González in the top with ten publications. The co-authorship co-occurrence maps suggest there is no solid collaborative relationship between the scientific community and that the information generated is insufficient for conserving and exploiting this fish. It is essential to increase the study of thematic areas that allow their comprehensive management in the medium term; topics like reproduction in captivity, aquaculture, and nutrition must be addressed in the future to assure a sustainable use of this resource.
Palabras claves	Worldwide Database, Regional Database, Co-Occurrence Maps.

Revista	**ACTA BIOLOGICA COLOMBIANA**
Volumen	27
Número	1
ISSN	ISSN: 1900-1649
DOI	10.15446/abc.v27n1.89421
Título del Artículo	Diversity and annual fluctuation of cerambicids (Coleoptera: Cerambycidae) in a tropical forest of southeast Mexico
Autores e instituciones de adscripción	Álvarez-Ramón, OI [1]; Pérez-de la Cruz, M [1]; Magaña-Alejandro, MA [1]; Oporto-Peregrino, S [1]; Gerónimo-Torres, JD [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Carretera Villahermosa Cárdenas, Km 0-5 S-N, Villahermosa, Tabasco, México [2] Univ Autónoma Chiapas, Fac Maya Estudios Agr, Carretera Catazajá Palenque, Km 4, Catazajá, Chiapas, México
Resumen	The diversity and annual fluctuation of cerambicids associated with the rain forest edge and interior was estimated. The capture of insects was performed with interception traps baited with ethyl alcohol and ultraviolet light traps used as attractants. 295 specimens from three subfamilies, belonging to 56 species of 38 genera were collected. Lamiinae was the richest subfamily, with 40 species distributed in 20 genera, for Cerambycinae 14 species from 12 genera were

Resumen	collected and for Parandrinae two species of one genus. The most abundant genus was Leptostylus with eight species. Six species were identified as new records for Mexico and 29 for Tabasco. In the forest edge, 155 specimens from two subfamilies, belonging to 37 species from 26 genera, were collected. In the forest interior 140 specimens were collected from three subfamilies, belonging to 36 species from 26 genera. It was determined that the communities have 17 shared species. The maximum value of true diversity was obtained in the forest edge with 15.96 and the minimum value in the forest interior with 12.69. The values of Δ, Δ* and Δ+ were determined and implied a low phylogenetic separation between the cerambycid species in both communities. The temporal fluctuation of the Cerambycidae community presented the maximum values abundance in February, May and August, months where there is a reduction in the precipitation. Finally, the species accumulation curve does not present an asymptote, so new records may increase.
Palabras claves	Ecosystems, Forestry, Insects.

Revista	**JOURNAL OF COMPUTATIONAL CHEMISTRY**
Volumen	44
Número	3
ISSN	ISSN: 0192-8651 eISSN: 1096-987X
DOI	10.1002/jcc.26843
Título del Artículo	Dismantlement of ammonia upon interaction with Be_n ($n \leq 10$) clusters
Autores e instituciones de adscripción	Yañez, M [1,2]; Ortiz-Chi, F [3]; Merino, G [4]; Alkorta, I [5]. [1] Univ Autónoma Madrid, Fac Ciencias, Dept Quim, Modulo 13, Madrid, Spain [2] Univ Autónoma Madrid, Inst Adv Res Chem Sci IAdChem, Madrid, Spain [3] Univ Juárez Autónoma Tabasco, CONACYT, Ctr Invest Ciencia & Tecnol Aplicada Tabasco, Cunduacán, Tabasco, México [4] Ctr Invest & Estudios Avanzados, Unidad Mérida, Dept Fis Aplicada, Mérida, Yucatán, México [5] Inst Quim Med CSIC, Madrid, Spain
Resumen	The interaction of ammonia with Be_n (n < 1–10) clusters has been investigated by density functional theory and ab initio calculations. The main conclusion is that, regardless of the size of the Be cluster, neither the structure of ammonia nor that of the Be clusters are preserved due to a systematic dissociation of its N-H bonds and a spontaneous H-shift toward the available Be atoms. This H migration not only leads to rather stable BeH bonds, but dramatically enhances the strength of the Be-N bonds as well. Accordingly, the maximum stability is found for the interaction with the beryllium trimer, leading to a complex with three N-Be and three Be-H bonds. Another maximum in stability, although lower than that reached for n = 3, is found for the Be heptamer, since from n = 6, a new N-Be bond is formed, so that complexes from n = 6 to n = 10 are characterized by the formation of a NBe_4 moiety, whose stability reaches a maximum at n = 7. The bonding characteristics of the different species formed are analyzed by means of AIM, NBO, ELF and AdNDP approaches.
Palabras claves	Beryllium clusters, DFT and ab initio calculations, Non-nuclear attractors.

Revista	**COMPUTACION Y SISTEMAS**
Volumen	26
Número	1
ISSN	ISSN: 1405-5546 eISSN: 2007-9737
DOI	10.13053/CyS-26-1-4162

Título del Artículo	Development of a Platform for Generation of CNN and Multilayer Neural Networks
Autores e instituciones de adscripción	González -Arriaga, DM [1]; Vargas- Treviño, MAD [2]; García, JG [1]; Gómez, JL [3]. [1] Benemérita Univ Autónoma Puebla, Fac Ciencias Comp, Puebla, México [2] Benemérita Univ Autónoma Puebla, Fac Ciencias Elect, Puebla, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ingn & Arquitectura, Villahermosa, Tabasco, México
Resumen	This research presents the design of a platform that assists in the generation of convolutional (CNN) and multilayer neural networks to provide a user-friendly interface for the design, formation, and development of neural networks. This platform is developed in LabVIEW as this software allows to perform inter-faces and generate an executable for use. It aims to reduce the development time of neural networks by providing an assistant-like graphical interface that guides the user through various common scenarios (data import, neural network construction and adjustment), allows the user to focus on solving their problems without having to write code, edit text files, or manually analyze recorded data. The user interface with the options offered is described. The way the neural network is generated is described. The results generated with the platform are presented producing an image with the proposed methodology applying a complete convolution layer. The usefulness of this platform is explained by presenting a case where there is a significant improvement in the development of a neural network, in time and reduction of errors.
Palabras claves	Platform, LabVIEW platform, MATLAB platform.

Revista	**INFORMATICS-BASEL**
Volumen	9
Número	1
ISSN	eISSN: 2227-9709
DOI	10.3390/informatics9010001
Título del Artículo	Design Thinking: Methodological Strategy for the Creation of a Playful Application for Children with Dyslexia
Autores e instituciones de adscripción	Yedra, RJ [1]; Aguilar, MAA [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias & Tecnol Informac, Villahermosa 86040, Tabasco, México
Resumen	The use of a methodology to address a problem facilitates work in an efficient, effective, and highly productive way. The design thinking methodology (also known as design thinking) is user-centric and oriented towards offering solutions by breaking down a problem into small parts to analyze it, to explore it, to test the results, and to create solutions that benefit the end-user. Many children have problems related to learning disorders, such as dyslexia, which occur due to the way that their brain incorporates and processes information. This can lead to them showing difficulty in some learning areas, even when their intelligence or motivation does not appear to be affected. In this research, through a mixed approach, a playful application is developed using new information and communication technologies (ICT), following a design thinking methodology, with the aim of supporting the learning of children with dyslexia through content designed with respect to their needs in order to help improve their academic performance. Data collection was carried out through observation, an interview, and record reviews. Analysis of the didactic materials allowed for the observation that content designed for the specific needs of children can work as a reinforcement for incorporating the information in an entertaining, dynamic, and friendly way, ultimately contributing to improved academic performance.
Palabras claves	Design thinking, Dyslexia, Learning.

Revista	**AQUACULTURE**
Volumen	560
Número	n/a
ISSN	ISSN: 0044-8486 eISSN: 1873-5622
DOI	10.1016/j.aquaculture.2022.738587
Título del Artículo	*Debaryomyces hansenii CBS 8339 promotes larval development in Seriola rivoliana*
Autores e instituciones de adscripción	Teles, A [1]; Álvarez- González, CA [1]; Llera-Herrera, R [2]; Gisbert, E [3]; Salas-Leiva, J [4]; Rodríguez -Jaramillo, MD [5]; Tovar- Ramírez, D [5]. [1] UJAT, DACBIOL, Lab Acuicultura Trop, Carretera Villahermosa Cárdenas KM 0-5, Villahermosa 86139, Tabasco, México [2] Univ Nacl Autónoma México, Inst Ciencias Mar & Limnol, Unidad Acad Mazatlán, Joel Montes Camarena S-N, POB 811, Mazatlán, Sinaloa, México [3] IRTA, Ctr San Carlos de la Rapita IRTA SCR, Programa Acuicultura, Tarragona, Spain [4] Consejo Nacl Ciencia & Tecnol CONACyT, Ctr Invest Mat Avanzados CIMAV, Miguel Cervantes 120, Complejo Ind Chihuahua, Chihuahua 31136, Chih, México [5] Ctr Invest Biol Noroeste, Inst Politecn Nacl S-N, La Paz 23096, BCS, México
Resumen	The present study aimed to know the effect of the administration of *Debaryomyces hansenii* yeast on growth, development and skeletal deformities, through the quantification of molecular and morphophysiological indicators in longfin yellowtail larvae. Larvae from the yeast group were fed with the rotifers and Artemia metanaupli half enriched with *D. hansenii* (50% of live prey) and half enriched with Origreen® (50% of live prey) and were compared to control (100% Origreen®) from 5 to 30 days post-hatching (DPH). Each treatment had two methodological replicates. Studies on bone mineralization, skeletal deformities, intestinal histological analysis, digestive enzyme activity, differential gene expression (RT-qPCR) and transcriptome analysis (RNA-Seq) were performed in whole larvae. Results showed that larvae fed *D. hansenii* encapsulated within enriched live preys had higher survival and growth, higher intestinal mucin secretion, as well as higher activity of alkaline phosphatase, pepsin and α-amylase. The degree of bone mineralization in the cranial and caudal fin complex was higher in larvae fed *D. hansenii* and a lower incidence of deformities at the vertebral column was also observed. In general, the gene expression throughout the development fluctuated between the control group and the yeast treatment; however, at 30 DPH, a higher expression of the bone morphogenetic protein type 2 (*bmp2*), collagen type 1α1 (*col1α1*) and proliferating cell nuclear antigen (*pcna*) genes was detected in larvae fed with yeast. The transcriptomic analyses using RNA-Seq revealed that the main genes related to bone mineralization degree and digestive tract maturation, were overrepresented in the *D. hansenii* treatment, 1,25-dihydroxyvitamin D (3) 24-hydroxylase (*cyp24*), cytochrome P450 family 27 subfamily A (*cyp27a*), protein 5 related to the low-density lipoprotein receptor (*lrp5*), myocyte-specific enhancing factor 2C (*mef2*), enterokinase (*entk*), pepsin and *alkaline phosphatase*. Based on the results, *S. rivoliana* larvae supplemented with the yeast *D. hansenii* presented higher growth and survival, a higher degree of maturation of the digestive tract, a higher degree of bone mineralization and a reduction in skeletal deformities, for which the continuous use of yeast is recommended as a food supplement to larvae from 5 days post-hatching onwards.
Palabras claves	Transcriptomic, Digestive enzyme, Bone.

Revista	**JOURNAL OF OPTOELECTRONIC AND BIOMEDICAL MATERIALS**
Volumen	14
Número	2
ISSN	ISSN: 2066-0049
DOI	n/a
Título del Artículo	DSSCs based on ZnO photoelectrodes sensitized with natural dyes extracted from the bark of Brazil and Taray
Autores e instituciones de adscripción	Robledo, AGF [1]; Enríquez, JP [1,2]; Avendaño, CAM [1]; Hernández, GP [2]; Gutiérrez, PJJ [1]. [1] Univ Sci & Arts. Chiapas, Inst Res & Innovat Renewable Energies, Tuxtla Gutiérrez 39039, Chiapas, México [2] Univ Juárez Autónoma Tabasco, Acad Div Engn & Architecture, Villahermosa 86040, Tabasco, México
Resumen	We report the extraction of natural dyes from Brazil and Taray bark, the impregnation of these dyes in thin films of ZnO synthesized via sol-gel method and deposited by Doctor Blade and finally the fabrication of dye sensitized solar cells (DSSC). The ZnO/dyes structures were characterized using UV-Visible and infrared spectroscopy. The analysis of the infrared spectra shows that the semiconductors impregnated with the extracted dyes exhibit the characteristic of dye anchorage in ZnO. The photovoltaic performance and efficiency of the assembled DSSCs was evaluated.
Palabras claves	DSSC, Natural dyes, ZnO.

Revista	**ETIC NET REVISTA CIENTÍFICA ELECTRÓNICA DE EDUCACIÓN Y COMUNICACIÓN EN LA SOCIEDAD DEL CONOCIMIENTO**
Volumen	22
Número	1
ISSN	ISSN: 1695-324X
DOI	10.30827/eticanet.v22i1.23946
Título del Artículo	Cuestiones Críticas, Retos y Oportunidades en la Formación Científica y tecnológica de Jóvenes Rurales en la Zona Maya de México
Autores e instituciones de adscripción	González, RJG [1]; Cisneros- Cohernour, EJ [1]; Suárez, AS [1]; Medina, DEM [2]. [1] Univ Autónoma Yucatán, Mérida, México [2] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	This research presents the experiences and challenges of young people from rural communities in the Mayan zone of Mexico who are training in competencies towards scientific and technological research. The project was designed as a qualitative case study, framed in the interpretive paradigm, meaning that the results are not applicable to other contexts or participants, but sought to delve deeper into the experiences of rural youth in the Mayan region who are training in areas such as science and technology. The results indicate that participants face critical issues related to the quality of rural education, poverty, coloniality, discrimination, gender stereotypes in science and technology, academic migration, moreover, to access to scientific and technological training.
Palabras claves	Mayan region, Rural youth, Critical issues.

Revista	**BIOINVASIONS RECORDS**
Volumen	11
Número	3
ISSN	ISSN: 2242-1300
DOI	10.3391/bir.2022.11.3.23
Título del Artículo	Coyote recent expansion in Quintana Roo State, Northeast Yucatan Peninsula, Mexico
Autores e instituciones de adscripción	Hidalgo-Mihart, MG [1]; Torres, FC [2]; González, CAL [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Villahermosa, Tabasco, México [2] Univ Autónoma Querétaro, Fac Ciencias Nat, Santiago De Querétaro, Querétaro, México
Resumen	Coyotes are successful generalist carnivores that are favored by anthropogenic activities. We document a range expansion for the species into the State of Quintana Roo, Mexico. We used camera traps to determine the presence and documented two separate events during 2020 and 2021. We discuss the implications for the presence of the species in highly developed areas dedicated to tourism and livestock. Habitat transformation seems to be a conducive factor that facilitates colonization and will have future impacts on urban developments in the region.
Palabras claves	Carnivores, Deforestation, Urban expansion.

Revista	**JOURNAL OF CHEMICAL TECHNOLOGY AND BIOTECHNOLOGY**
Volumen	97
Número	11
ISSN	ISSN: 0268-2575 eISSN: 1097-4660
DOI	10.1002/jctb.7065
Título del Artículo	Controlling growth of phototrophic biofilms on limestone using $CaZn_2(OH)_6 \cdot 2H_2O$ and ZnO nanoparticles
Autores e instituciones de adscripción	Lázaro- Mass, S [1]; De la Rosa- García, S [3]; García- Solís, C [4]; Reyes-Trujeque, J [5]; Soria-Castro, M [5]; Fuentes, AF[6]; Quintana, P [1]; Gómez-Cornelio, S [2]. [1] Ctr Invest & Estudios Avanzados, Dept Fis Aplicada, Unidad Mérida, Km 6 Antigua Carretera Progreso Apdo. Postal 73, medida 97310, Yucatán, México [2] Univ Politecn Ctr, Carretera Fed, Villahermosa Teapa Km 22-5, Villahermosa 86290, Tabasco, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Lab Microbiol Aplicada, Villahermosa, Tabasco, México [4] Ctr INAH Yucatán, Secc Conservac & Restaurac, Mérida, Yucatán, México [5] Univ Autónoma Campeche, Ctr Invest Corros LANCIC CICORR, Lab Nacl Ciencias Invest & Conservac Patrimonio C, Campeche, Campeche, México [6] CINVESTAV IPN, Unidad Saltillo, Ramos Arizpe, México
Resumen	Deterioration by microbial activity is common in the built cultural heritage, where phototrophic microorganisms are primary colonizers that form complex communities associated with heterotrophic microorganisms. Therefore, this article analyses the antiphototrophic effect of ZnO and $CaZn_2(OH)_6 \cdot 2H_2O$ (CZ) nanoparticles (NPs) on three limestone lithotype coupons (Xcambo, red limestone and shellstone). The nanomaterials were obtained via sol–gel (SG), hydrothermal (HT) and mechanochemical (MS) routes and characterized using powder X-ray diffraction and scanning electron microscopy. Two concentrations of NPs (5000 and 10 000 $\mu g\, mL^{-1}$) were applied to the coupons; afterwards, phototrophic microorganisms isolated from Chichén-Itzá, Yucatan were inoculated. The percentage of protection was calculated with ImageJ software, and chromatic parameters were measured to identify visible changes in the stones. RESULTS The results show differences in the protective effect and color variations depending on the nanomaterials and phototrophic microorganisms applied in the limestone coupons. CZ and ZnO protect more than 72% on the surface of shellstone and Xcambo except for ZnO-SG in shellstone. The growth of *Gloeocapsa* sp. in red limestone with ZnO-SG and CZ-SG was equal to or greater than that of the

Resumen	control without NPs. In general, the NPs protect the limestone surface against phototrophic microorganisms up to 10% more than commercial algaecide. The coupons treated with ZnO-HT and CZ-HT have greater protection against biofilm formation than other coatings. CONCLUSIONS In general, the coatings show a higher antiphototrophic protection than the controls, mainly the CZ-HT coatings, with better results at lower concentration. Therefore, these nanomaterials could be used to inhibit the formation of biofilms on built cultural heritage. © 2022 Society of Chemical Industry (SCI).
Palabras claves	Cultural Heritage, Nanomaterials, Phototrophs.

Revista	**JOURNAL OF THE MEXICAN CHEMICAL SOCIETY**
Volumen	66
Número	3
ISSN	ISSN: 1870-249X eISSN: 1665-9686
DOI	10.29356/jmcs.v66i3.1611
Título del Artículo	Comparative effect of Adsorption and Photodegradation on Benzene and Naphthalene using Bismuth Oxide modify Graphene Oxide
Autores e instituciones de adscripción	Jiménez, JMO [1]; González, RL [1]; Mendoza, CG [1]; Cuauhtémoc- López, I [1]; Lemus, MAA [1]; Mendoza, GM [1]. [1] Juárez Autonomous Univ Tabasco, Acad Div Engn & Architecture, Nanotechnol Lab, Carr Cunduacán Jalpa Méndez Km 1, Cunduacán 86690, Tabasco, México
Resumen	The removal of pollutants derived from oil industry takes relevance in industrial zones moreover if some of them has been reported as carcinogenic and detrimental to public health at low concentrations. In this research was explored the synergic effect between adsorption of the hydrocarbon's benzene and naphthalene and its photodegradation under visible irradiation. The capabilities of system graphene oxide (GO) - bismuth oxide (Bi_2O_3) were evaluated both as adsorbent and active semiconductor for the removal of benzene and naphthalene in aqueous media. The content ratio between materials was changed to evaluate the effect on its properties. The X-ray diffraction indicates the stability of α-bismuth oxide which is known as an efficient photocatalyst meanwhile Raman spectroscopy indicates the successfully obtaining of detached layer of graphene oxide. The energy band gap of the most photoactive composites materials indicates an increase comparing with bare GO, this increase is favorable to decrease the high electron transfer in its surface. The removal efficiency of benzene and naphthalene indicate the predominance of the adsorption process; the highest elimination was for naphthalene removing 73 percent of the pollutant in aqueous media. The results indicate the system as a promising alternative for the elimination of contaminants derived from the hydrocarbons industry when present in aqueous media.
Palabras claves	Adsorption, Photodegradation, Photocatalysis.

Revista	**ECOSISTEMAS Y RECURSOS AGROPECUARIOS**
Volumen	9
Número	1
ISSN	ISSN: 2007-901X
DOI	n/a
Título del Artículo	Colorimetric method to estimate the soil organic matter in karst areas
Autores e instituciones de adscripción	García-Ruiz, R [1]; Sánchez- Hernández, R [2]; Bautista, F [3]; Goguitchaichvili, A [4]. [1] Univ Nacl Autónoma México, Inst Geofis, Serv Arqueomagnet Nacl, Antigua Carretera Pátzcuaro 8701, Morelia 58190, Michoacán, México

Autores e instituciones de adscripción	[2] Univ Juárez Autónoma Tabasco, Div Ciencias Agr, Carretera Villahermosa Teapa Km 25, Centro 86280, Tabasco, México [3] Univ Nacl Autónoma México, Ctr Invest Geog Ambiental, Antigua Carretera Pátzcuaro 8701, Morelia 58190, Michoacán, México [4] Univ Nacl Autónoma México, Inst Geofis, Lab Univ Geofis Ambiental, Antigua Carretera Pátzcuaro 8701, Morelia 58190, Michoacán, México
Resumen	The increase in soil organic matter (SOM) content contributes to the mitigation of the effects of global climate change; thus, it is important to know its levels. However, the SOM analysis can eventually be expensive and time consuming, as well as generating toxic waste. The measurement of soil color may be an indirect method more practical to estimate the SOM than traditional techniques. The principal aim of the study was to use color parameters through the CIE Lab system and some color indices, such as saturation and redness indices, to estimate the SOM in a karst area of the municipality of Chetumal in the Yucatan Peninsula, Mexico. The percentage of SOM was measured in 50 soil samples by conventional methods while the soil color was analyzed with the CIE Lab system. Both variables were correlated with the redness index. Based on color, the samples were separated into five groups, ranging from pinkish white to brownish gray. Multiple regression equations (SOM vs soil color parameters) were performed for each group and a medians comparison analysis was applied. The correlation adjustment between the redness index and SOM is R^2> 0.86. The values of the multiple regression equations were R^2> 0.8. We conclude that the soil redness index, now named soil organic matter index, can be used as a relatively quick approach to estimate the percentage of SOM in karst areas.
Palabras claves	Soil color, Proxy method, Karst.

Revista	**THE AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE**
Volumen	106
Número	5
ISSN	ISSN: 0002-9637 eISSN: 1476-1645
DOI	10.4269/ajtmh.21-0409
Título del Artículo	Cluster Analysis of Dengue Morbidity and Mortality in Mexico from 2007 to 2020: Implications for the probable case definition
Autores e instituciones de adscripción	Baak -Baak, CM [1]; Cigarroa -Toledo, N [2]; Pinto-Castillo, JF [3]; Cetina-Trejo, RC [1]; Torres-Chablé, O [4]; Blitvich, BJ [5]; García -Rejón, JE [1]. [1] Univ Autónoma Yucatán, Ctr Invest Regionales Dr. Hideyo Noguchi, Lab Arbovirol, Calle 43 613 X Calle 96, Mérida 97225, Yucatán, México [2] Univ Autónoma Yucatán, Ctr Invest Reg Dr. Hideyo Noguchi, Lab Biol Celular, Mérida, Yucatán, México [3] Univ Ciencias & Artes Chiapas, Inst Invest Gest Riesgos & Cambio Climat, Lab Geog Ambiental, Chiapas, México [4] Univ Juárez Autónoma Tabasco, Lab Enfermedades Trop & Transmitidas Vector, Villahermosa, Tabasco, México [5] Iowa State Univ, Coll Vet Med, Dept Vet Microbiol & Prevent Med, Ames, IA USA
Resumen	Dengue cases and deaths occur frequently in Mexico, although the trend is not uniform across the country. We performed a Spatio-temporal analysis of dengue cases and deaths in Mexico from 2007 to 2020, and clustered states according to whether there was a low, moderate, or high risk of dengue. A total of 501,600 confirmed dengue cases were registered from 2007 to 2020, with 378,122 cases classified as dengue fever (DF) and 123,478 cases classified as dengue hemorrhagic fever (DHF). For each confirmed case, there were 4.68 probable cases. There were 1,230 dengue deaths, with highest numbers reported in 2009, 2012, 2013, and 2019. The number of deaths had a significant correlation ($P \leq 0.01$) with DF ($r = 0.82$), DHF ($r = 0.94$), and probable dengue cases ($r = 0.84$). States were clustered using Machine Learning technique according to select indices associated with dengue. Cluster 1 (low risk) primarily contained states in the northwest, northcentral, and east. Cluster 2 (moderate risk) includes states in the northeast. Cluster 3 (high risk) mostly contained coastal states in the southeast, southwest, and west. The generation of the clusters was supported by the Kruskal–Wallis test. A significant difference was found in the incidence, mortality rates, and case-fatality rates of dengue among the clusters ($P \leq 0.01$). Notably, cluster 3 contributed 71.4% of the confirmed cases and 89.2% of the deaths. Public health and vector control strategies designed to mitigate the burden of dengue in Mexico should consider the states in cluster 3 as high priority areas.
Palabras claves	S/D.

Revista	**FRONTIERS IN PSYCHIATRY**
Volumen	13
Número	n/a
ISSN	ISSN: 1664-0640
DOI	10.3389/fpsyt.2022.870656
Título del Artículo	Clozapine Long-Term Treatment Might Reduce Epigenetic Age Through Hypomethylation of Longevity Regulatory Pathways Genes
Autores e instituciones de adscripción	Pérez-Aldana, BE [1]; Martínez-Magaña, JJ [2]; Mayén-Lobo, YG [3]; de Montellano, DJDO [4]; Aviña-Cervantes, CL [5]; Ortega-Vázquez, A [3]; Genis-Mendoza, AD [2]; Sarmiento, E [6]; Soto-Reyes, E [7]; Juárez-Rojop, IE [8]; Tovilla-Zarate, CA [9]; González-Castro, TB [10]; Nicolini, H [2,11]; López- López, M [3]; Monroy-Jaramillo, N [4]. [1] Univ Autónoma Metropolitana, Doctorado Ciencias Biol & Salud, México City, México [2] Inst Nacl Med Genom, Lab Genom Enfermedades Psiquiatr & Neurodegenerat, México City, México [3] Univ Autónoma Metropolitana, Dept Sistemas Biol, México City, México [4] Inst Nacl Neurol & Neurocirugía Manuel Velasco Sua, Dept Genet, México City, México [5] Inst Nacl Neurol & Neurocirugía Manuel Velasco Sua, Dept Psiquiatría, México City, México [6] Hosp Psiquiatr Infantil Juan N Navarro, Direcc Gen, México City, México [7] Univ Autónoma Metropolitana, Dept Ciencias Nat, Unidad Cuajimalpa, México City, México [8] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Salud, Villahermosa, México [9] Univ Juárez Autónoma Tabasco, Div Academ Multidisciplinaria Comalcalco, Comalcalco, México [10] Univ Juárez Autónoma Tabasco, Div Academ Multidisciplinaria Jalpa Méndez, Jalpa De Méndez, México [11] GRP Estudios Med & Familiares Carracci, México City, México
Resumen	Long-term studies have shown significantly lower mortality rates in patients with continuous clozapine (CLZ) treatment than other antipsychotics. We aimed to evaluate epigenetic age and DNA methylome differences between CLZ-treated patients and those without psychopharmacological treatment. The DNA methylome was analyzed using the Infinium MethylationEPIC BeadChip in 31 CLZ-treated patients with psychotic disorders and 56 patients with psychiatric disorders naive to psychopharmacological treatment. Delta age (Δage) was calculated as the difference between predicted epigenetic age and chronological age. CLZ-treated patients were stratified by sex, age, and years of treatment. Differential methylation sites between both groups were determined using linear regression models. The Δage in CLZ-treated patients was on average lower compared with drug-naive patients for the three clocks analyzed; however, after data-stratification, this difference remained only in male patients. Additional differences were observed in Hannum and Horvath clocks when comparing chronological age and years of CLZ treatment. We identified 44,716 differentially methylated sites, of which 87.7% were hypomethylated in CLZ-treated patients, and enriched in the longevity pathway genes. Moreover, by protein–protein interaction, AMPK and insulin signaling pathways were found enriched. CLZ could promote a lower Δage in individuals with long-term treatment and modify the DNA methylome of the longevity-regulating pathways genes.
Palabras claves	Psychotic Disorders, Epigenetic Age, Longevity.

Revista	**REPRODUCTION IN DOMESTIC ANIMALS**
Volumen	57
Número	6
ISSN	ISSN: 1664-0640
DOI	10.1111/rda.14101
Título del Artículo	Cloprostenol enhances sexual behaviour and semen quality in growing lambs more effectively than Dinoprost
Autores e instituciones de adscripción	Sánchez- Dávila [1,2], F; Hernández-Melo, VA [1]; Ledezma-Torres, RA [1]; Bernal-Barragán, H [1]; Luna-Palomera, C [3]; Ungerfeld, R [4]. [1] Univ Autónoma Nuevo León, Posgrad Conjunto Fac Agron & Vet, San Nicolas De Los Garza, Nuevo León, México [2] Univ Autónoma Nuevo León, Fac Agron, Lab Reprod Anim, San Nicolas De Los Garza, Nuevo León, México [3] Univ Autónoma Juárez Tabasco, Div Acad Ciencias Agr, Villahermosa, Tabasco, México [4] Univ Republica, Fac Vet, Dept Biociencias Vet, Ruta 8, Km 18, Montevideo 13000, Uruguay

Resumen	Analogues of PGF2α have been used in boars with positive results on sexual behaviour, but limited impact on semen quality. The objective of this study was to determine whether the administration of Dinoprost tromethamine or D-Cloprostenol enhances the sexual behaviour and semen quality of sexually inexperienced growing lambs during the onset of the breeding season. The study lasted 10 weeks, beginning during the non-breeding season, with 24 sexually inexperienced Katahdin lambs (5.1 ± 0.5 months old). Three groups of eight lambs each received: (1) vehicle treatment (group CON); (2) 10 mg of Dinoprost tromethamine (group DIN); or (3) 0.15 mg of Cloprostenol dextrogy (group CLOP). The treatments were all applied im 5 min before the tests of sexual behaviour, or 20 min before the collection of semen. Sexual behaviour was evaluated twice weekly in a pen test with a non-oestrous ewe, and semen was collected once weekly with an artificial vagina. The latency to begin courtship was significantly shorter in both groups that received analogues of PGF2α than in CON lambs. The number of ano-genital sniffs, flehmens and lateral approaches was greater in both treated groups than in CON lambs ($p < .05$). Lambs from DIN group mounted significantly more than CLOP and CON lambs, which did not differ. However, CLOP lambs showed significantly greater mating efficiency (i.e. ejaculations/total mounts) than CON lambs, which exhibited significantly greater mating efficiency that DIN lambs. Lambs treated with CLOP produced significantly more semen volume with more mass motility than those treated with DIN and CON (without differences between DIN and CON). Overall, we concluded that the administration of cloprostenol or dinoprost before sexual evaluation in young rams enhances their sexual behaviour. Cloprostenol had greater effects than dinoprost. The administration of cloprostenol before semen collection also triggered the ejaculation of a greater volume of semen, with greater mass motility. These results open interesting possibilities to study deeply the use of simple and cost-effective treatments to improve the reproductive results of young growing rams.
Palabras claves	Reproductive Performance, Serving Capacity, Sexual Experience.

Revista	**FRONTIERS IN MEDICINE**
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ISSN	eISSN: 2296-858X
DOI	10.3389/fmed.2022.903090
Título del Artículo	Chronic kidney disease risk prediction scores assessment and development in Mexican adult population
Autores e instituciones de adscripción	Colli, VA [1,2]; González-Rocha, A [2]; Canales, D [3]; Hernández -Alcáraz, C [2]; Pedroza, A [3]; Pérez-Chan, M [1]; Barquera, S [2]; Denova -Gutiérrez, E [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Salud, Villahermosa, Tabasco, México [2] Inst Nacl Salud Publ, Ctr Invest Nutr & Salud, Cuernavaca, Morelos, México [3] Inst Nacl Salud Publ, Ctr Invest Evaluac & Encuestas, Cuernavaca, Morelos, México
Resumen	Background: Chronic kidney disease (CKD) is a major public health problem, with considerable growth in prevalence and mortality in recent years. Screening of CKD at primary care is crucial for the implementation of prevention strategies. The aims of this study are to assess CKD risk prediction scores and to develop a risk prediction score for the Mexican adult population. Methods: Data from the Mexican National Health and Nutrition Survey 2016 was utilized and 3463 participants ≥ 20 years old were included. Reduced renal function with Glomerular filtration rate and/or the presence of albuminuria was defined as CKD. Multiple logistic regression models were performed for the creation of a training and validation model. Additionally, several models were validated in our Mexican population. Results: The developed training model included sex, age, body mass index, fast plasma glucose, systolic blood pressure, and triglycerides, as did the validation model. The area under the curve (AUC) was 0.78 (95% CI: 0.72, 0.79) for training

Resumen	model, and 0.76 (95% CI: 0.71, 0.80) in validation model for Mexican adult population. Age, female gender, presence of diabetes and hypertension, elevated systolic and diastolic blood pressure, serum and urinary creatinine, and higher HbA1c were significantly associated with the prevalent chronic kidney disease. Previous CKD risk predictive models were evaluated with a representative sample of the Mexican adult population, their AUC was between 0.61 and 0.78. Conclusion: The designed CKD risk predictive model satisfactorily predicts using simple and common variables in primary medical care. This model could have multiple benefits; such as, the identification of the population at risk, and prevention of CKD.
Palabras claves	Mexican, Prediction, Validation.

Revista	**PLANTS-BASEL**
Volumen	11
Número	19
ISSN	eISSN: 2223-7747
DOI	10.3390/plants11192610
Título del Artículo	Chemical Constituents and Their Production in Mexican Oaks (*Q. Rugosa, Q. Glabrescens and Q. Obtusata*)
Autores e instituciones de adscripción	Castillo-Mendoza, E [1]; Zamilpa, A [2]; González -Cortázar, M [2]; Blé- González, EA [3]; Tovar-Sánchez, E [1]. [1] Univ Autónoma Estado Morelos, Ctr Invest Biodiversidad & Conservac, Av. Univ. 1001, Cuernavaca 62209, Morelos, México [2] Inst Mexicano Seguro Social, Ctr Invest Biomed Sur, Argentina 1, Xochitepec 62790, Morelos, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Carretera Cunduacán Jalpa Km 0-5, Cunduacán 86690, Tabasco, México
Resumen	Mexico is considered one of the main regions of diversification of the genus *Quercus* (oaks). Oak species are one of the most important tree groups, particularly in temperate forests, due to its diversity and abundance. Some studies have shown that oak contains specialized metabolites with medicinal importance. In this work, the acetonic extract from leaves of three Mexican oaks (*Quercus rugosa, Q. glabrescens*, and *Q. obtusata*) was separated using thin-layer chromatography and column chromatography. Chemical identification of the major compounds was determined using high-performance liquid chromatography and nuclear magnetic resonance. Nineteen compounds were identified, three belonging to the terpenoid family (ursolic acid, β-amyrin, and β−sitosterol) and 16 from the phenolic family. Of the isolated compounds, seven are new reports for oak species (scopoletin, ursolic acid, β-amyrin, luteolin−7−O−glucoside, kaempferol−3−O−sophoroside, kaempferol−3−O−glucoside, and kaempferol−3−O−sambubioside). More compounds were identified in *Q. rugosa* followed by *Q. glabrescens* and then *Q. obtusata*. The characterization of specialized metabolites in oak species is relevant, from both phytocentric and anthropocentric perspectives.
Palabras claves	TLC, Terpenoids, Specialized Metabolites.

Revista	**MEAT SCIENCE**
Volumen	194
Número	n/a
ISSN	ISSN: 0309-1740 eISSN: 1873-4138
DOI	10.1016/j.meatsci.2022.108959
Título del Artículo	Characteristics of growth, carcass and meat quality of sheep with different feed efficiency phenotypes

Autores e instituciones de adscripción	Gurgeira, DN [1]; Crisóstomo, C [1]; Sartori, LVC [1]; de Paz, CCP [2]; Delmilho, G [1]; Chay-Canul, AJ [3]; Bedoya, HJN [4]; Vega, WHO [5]; Bueno, MS [1]; da Costa, RLD [1]. [1] Inst Zootecnia, Rua Heitor Penteado 56, BR-13380011 Nova Odessa, SP, Brazil [2] Inst Zootecnia, Rodovia Carlos Tonani, Km 94, BR-14160900 Sertaozinho, SP, Brazil [3] Univ Juárez Autónoma Tabasco, Carretera Villahermosa Teapa, Km 25, Tabasco 86280, México [4] Univ Santander, Calle70 55-210, Bucaramanga, Santander, Colombia [5] Ctr Univ UNINTA, Rua Antonio Rodrigues Magalhaes 359, BR-62050100 Sobral, CE, Brazil
Resumen	The objective was to evaluate the performance, carcass and meat quality of 40 lambs classified by RFI (residual feed intake) and RIG (residual intake and gain). Dry matter intake (DMI) was recorded to calculate the RFI and RIG, classified as efficient, moderately or inefficient. After the confinement period, they were slaughtered and the carcass and meat quality were determined. The efficient animals had DMI scores of 0.700 RFI and 0.400 kg/ d RIG, lower than the inefficient ones with similar weight gain. The RFI efficient animals showed greater shear force, without effect in the RIG classification. In general, the variables analyzed were not influenced by RFI or RIG. Efficiency measures do not affect the carcass and meat quality of sheep, but they do have the advantage of identifying animals with lower feed consumption, making the system more efficient. However, as the dataset is limited to fully assess the effects, this manuscript can be used as preliminary results for future studies.
Palabras claves	Genetic selection, Lamb meat, Residual feed intake.

Revista	**JOURNAL OF PSYCHIATRIC RESEARCH**
Volumen	153
Número	n/a
ISSN	ISSN: 0022-3956 eISSN: 1879-1379
DOI	10.1016/j.jpsychires.2022.06.053
Título del Artículo	Cannabis smoking increases the risk of suicide ideation and suicide attempt in young individuals of 11-21 years: A systematic review and meta-analysis
Autores e instituciones de adscripción	Fresán, A [1]; Dionisio-García, DM [2]; González-Castro, TB [3]; Ramos-Méndez, MA [2]; Castillo-Ávila, RG [2]; Tovilla-Zarate, CA [4]; Juárez-Rojop, IE [2]; López- Narváez, ML [5]; Genis-Mendoza, AD [6]; Nicolini, H [7]. [1] Inst Nacl Psiquiatría Ramón de la Fuente Muniz, Subdirecc Invest Clin, México City, DF, México [2] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Salud, Villahermosa, Tabasco, México [3] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Jalpa de Méndez, Jalpa De Méndez, Tabasco, México [4] Univ Juárez Autónoma Tabasco, Div Acad Multidisciplinaria Comalcalco, Comalcalco, Tabasco, México [5] Hosp Gen Yajalon Dr. José Manuel Velasco Siles, Secretaría Salud, Yajalon, Chiapas, México [6] Inst Nacl Med Genom INMEGEN, SAP, Secretaría Salud, México City, México [7] Inst Nacl Med Genomica INMEGEN, Lab Enfermedades Psiquiatr Neurodegenerat & Adicc, México City, DF, México
Resumen	Background: Cannabis is the most frequently consumed drug around the world. Its use has been associated with increased suicide behaviors; nonetheless, the association of cannabis smoking and suicide behaviors in adolescents has not yet been established. The aim of this systematic review and meta-analysis was to evaluate the risk of suicide attempt, suicidal ideation or suicide planning in individuals of 11–21 years of age who smoke cannabis. Methods: We performed an online searched using PubMed, EBSCO and Science Direct databases, up to July 2021. We calculated odds ratio with 95% confidence intervals to evaluate the association between suicide attempt, suicidal ideation or suicide planning and cannabis smoking in individuals of 11–21 years of age. Results: Twenty studies reported suicide attempts in 34,859 young individuals, suicidal ideation in 26, 937 individuals, and suicide planning in 9054 young individuals. We found an increased risk of suicide attempt in cannabis smokers than in non-cannabis users (OR: 2.33; 95% CI: 1.78–3.05; Z p value; <0.0001; I^2

Resumen	= 97.12%), as well as a significant association between cannabis smoking and suicidal ideation (OR: 2.04; 95%CI: 1.64–2.53; Z p value: <0.001; I^2: 94.88) and suicide planning (OR: 1.674; 95% CI: 1.554–1.804; Z p value: 0.000; I^2: 92.609). Subgroup analyses showed that American teens have an increased risk of suicidal ideation; the meta-regression analysis revealed that age was negatively associated with the risk of suicide attempt. Conclusions: This meta-analysis shows that cannabis smoking increased the risk of suicide attempt, suicidal ideation and suicide planning in young individuals of 11–21 years of age. The high risk of suicide behaviors could vary depending on the population studied; therefore, more studies are necessary to corroborate the risk of presenting suicide behaviors in individuals of 11–21 years of age who smoke cannabis.
Palabras claves	Cannabis, Adolescence, Young adults.

Revista	**AIMS ENERGY**
Volumen	10
Número	1
ISSN	ISSN: 2333-8326 eISSN: 2333-8334
DOI	10.3934/energy.2022003
Título del Artículo	Bioenergetic valorization of *Sargassum fluitans* in the Mexican Caribbean: The determination of the calorific value and washing mechanism
Autores e instituciones de adscripción	Olivier, JAS [1]; Canepa, JRL [1]; Zarate, DG [2]; Díaz, AG [3]; Jaramillo, DAF [4]; García, HKO [5]; López, BE [1]. [1] Univ Juárez Autónoma Tabasco, Acad Div Biol Sci, Pilot Plant Solid Waste & Atmospher Treatment 3, Villahermosa, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Chem Lab, Jalpa de Méndez Multidisciplinary Acad Div, Villahermosa, Tabasco, México [3] Geocycle SA CV, Coproc Lab, Hermosillo, Sonora, México [4] Univ Juárez Autónoma Tabasco, Characterizat Lab, Acad Div Engn & Architecture, Villahermosa, Tabasco, México [5] Technol Inst Morelia Valley, Morelia, Michoacán, México
Resumen	The advent of large volumes of Sargassum sp. on the Mexican Caribbean coast has become an emerging issue for the Mexican population. The most frequent action is harvesting, but a correct treatment or energy recovery strategy is still missing. This work aimed to evaluate the energy potential of Sargassum fluitans, through elemental calculations and direct measurements, considering the effect of its washing. The calorific value determined by the direct method was 9.24 ± 0.28 MJ/kg and 12.64 ± 0.18 MJ/kg for dirty and washed Sargassum, respectively. The washing effect increased the calorific values in Sargassum fluitans by 36.80%. The washing effect increased the calorific values determined by indirect methods, increasing 10.10% and 41.04%, each method, respectively. The content of toxic metals was lower in both materials than that established for non-woody biomass from energy use, concerning the ISO 17225:2014 standard. The unit energy cost of Sargassum fluitans is $0.007 and $0.011 per MJ for dirty and washed conditions, respectively. Finally, the results of this work indicate that the Sargassum wash provides better characteristics to be considered an alternative fuel option in combustion systems such as thermo-electric plants (based on carbon), sugar mills, and cement kilns with co-processing of solid waste. Attending from a bioenergetic approach, Sargassum's emerging seasonal problem affects the Mexican Caribbean coast.
Palabras claves	Calorific Value, Sargassum, Seaweed.

Revista	**3C EMPRESA. INVESTIGACIÓN Y PENSAMIENTO CRÍTICO**
Volumen	11
Número	1
ISSN	ISSN: 2254-3376
DOI	10.17993/3cemp.2022.110149.67-83
Título del Artículo	Companies and Mechanisms to Prevent Money Laundering in Mexico
Autores e instituciones de adscripción	Prats, GM [1]; García, YIA [1]; Hernández, FS [1]. [1] Univ Juárez Autónoma Tabasco, Villahermosa, Tabasco, México
Resumen	The objective of this paper is to analyze the impact of ICTs on the prevention of money laundering in Mexico as a mechanism for the prevention and detection of related activities and atypical behaviors. The study is of a quantitative nature with a descriptive scope, based on the review and study of the evaluations carried out among the members of the Financial Action Task Force (FATF) in the Mutual Evaluation Report (IEM) 2020. Mexico is one of the members that has been significantly affected by this phenomenon derived from organized crime and corruption. Having an impact of considerable impact on the resources to pay to the finances of the public sector and as a consequence to the tax collection. The fight against money laundering becomes a fundamental point to end the financing of crime and corruption, for this, the FATF established the document known as the 40 recommendations, which serves as a parameter to carry out the evaluation in the progress that its member countries are achieving to face this phenomenon. In this regard, the result of this research presents the shortcomings of the Mexican State, in this matter and how the use of ICTs can contribute to the reduction of this problem that impacts on the various sectors of society.
Palabras claves	Mexico, FATF, Evaluations.

Revista	**ACTA APPLICANDAE MATHEMATICAE**
Volumen	181
Número	1
ISSN	ISSN: 0167-8019 eISSN: 1572-9036
DOI	10.1007/s10440-022-00520-y
Título del Artículo	Bifurcation Analysis of a Kolmogorov Type Tritrophic Model
Autores e instituciones de adscripción	Blé, G [1]; Castellanos, V [1]; De la-Rosa, MA [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Km 1, Carretera Cunduacán Jalpa de Méndez, Cunduacán 86690, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Consejo Nacl Ciencia & Tecnol, Km 1, Carretera Cunduacán Jalpa de Méndez, Cunduacán 86690, Tabasco, México
Resumen	A tritrophic food chain model of Kolmogorov type is analyzed. The mesopredator and superpredator populations are specialist, the functional responses are general and the prey has general growth rate function. Independently of the functional responses and of the growth rate of the prey, conditions to have the existence of stable limit sets obtained by a Bogdanov–Takens bifurcation are proved. The general results, fixing Holling type functional responses and logistic growth rate for the prey are illustrated. Moreover, derived from our Bogdanov–Takens bifurcation results, the coexistence of the three species by means of stable limit cycles or quasiperiodic orbits with chaotic motion is numerically shown. Finally, general formulae for the second-order homoclinic predictor are computed and numerically illustrated.
Palabras claves	Holling functional responses, Quasiperiodic orbits, Homoclinic predictor.

Revista	**INTELLIGENT AUTOMATION AND SOFT COMPUTING**
Volumen	32
Número	3
ISSN	ISSN: 0167-8019 eISSN: 1572-9036
DOI	10.32604/iasc.2022.023570
Título del Artículo	Bacterial Foraging based Algorithm Front-end to Solve Global Optimization Problems
Autores e instituciones de adscripción	Hernández- Ocaña, B [1]; García- López, A [1]; Hernández- Torruco, J [1]; Chávez -Bosquez, O [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias & Tecnol Informac, Cunduacán 86690, Tabasco, México
Resumen	The Bacterial Foraging Algorithm (BFOA) is a well-known swarm collective intelligence algorithm used to solve a variety of constraint optimization problems with wide success. Despite its universality, implementing the BFOA may be complex due to the calibration of multiple parameters. Moreover, the Two-Swim Modified Bacterial Foraging Optimization Algorithm (TS-MBFOA) is a state-of-the-art modification of the BFOA which may lead to solutions close to the optimal but with more parameters than the original BFOA. That is why in this paper we present the design using the Unified Modeling Language (UML) and the implementation in the MATLAB platform of a front-end for the TSMBFOA algorithm to calibrate the algorithm parameters faster and with no need for editing lines of code. To test our proposal, we solve a numerical optimization problem with constraints known as tension/compression spring, where 30 independent executions were conducted using the TS-MBFOA and then compared with an earlier version called MBFOA. The runtime configuration and the parameter tuning were fluent using our front-end, and the TS-MBFOA obtained the better results. To date, there is no other user-friendly implementation of this specific algorithm in an open-source code, and the front-end is flexible enough to include other numerical optimization problems with minimal effort.
Palabras claves	Metaheuristics, Optimization, User Interface.

Revista	**EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE**
Volumen	273
Número	1
ISSN	ISSN: 0940-1334 eISSN: 1433-8491
DOI	10.1007/s00406-022-01500-x
Título del Artículo	Association between the *HTR1A* rs6295 gene polymorphism and suicidal behavior: an updated meta-analysis
Autores e instituciones de adscripción	Hernández- Díaz, Y [1]; Tovilla-Zárate, CA [2]; Castillo-Ávila, RG [3]; Juárez-Rojop, IE [3]; Genis-Mendoza, AD [4]; López- Narváez, ML [5]; Villar-Juárez, GE [6]; González-Castro, TB [1]. [1] Univ Juárez Autónoma Tabasco, Div Academ Multidisciplinaria Jalpa Méndez, Carretera Estatal Libre Villahermosa Comalcalco K, Jalpa De Méndez 86205, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Div Academ Multidisciplinaria Comalcalco, Comalcalco, Tabasco, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Salud, Villahermosa, Tabasco, México [4] Inst Nacl Med Genom, Lab Genom Enfermedades Psiquiatr & Neurodegenerat, Ciudad De México, México [5] Hosp Chiapas Nos Dr. Gilberto Gómez Maza, secretaria Salud Chiapas, Tuxtla Gutiérrez, Chiapas, México [6] Univ Anáhuac Querétaro, Escuela Ciencias La Salud, Querétaro, México
Resumen	Several association studies have indicated that the *HTR1A* gene is associated with suicidal behavior (SB). Thus, a systematic assessment of the association of *HTR1A* was performed based on a literature review and pooled analysis. Four electronic databases were comprehensively searched to find and pinpoint all case–control articles related to this study. When analyzing the genetic association with SB, data were divided into: (A) SB cases vs. healthy controls and (B) SB cases vs. psychiatric controls. Odds ratios (ORs) and 95% confidence intervals

Resumen	(CIs) were assessed as measures of association. Heterogeneity among included studies was analyzed using sensitivity test and Q statistics. Publication bias was also explored by Egger and rank correlation test. Thirteen case–control studies were selected in this meta-analysis, involving 2817 SB patients, 2563 healthy controls and 545 psychiatric controls. In the overall comparison between SB cases and healthy controls, result showed that the rs6295 polymorphisms of *HTR1A* gene was associated with SB, but only when using the recessive model (OR = 2.21, 95% CI = 1.80–2.71, $P < 0.001$). In the smaller sample size comparison between SB and psychiatric controls, no significant association was detected with rs6295 in any of the five genetics models tested. The present meta-analysis suggests that rs6295 polymorphism of *HTR1A* gene could increase the risk for SB. Well-designed studies with more patients will be required to validate these results.
Palabras claves	Polymorphism, Suicidal behavior, Meta-analysis.

Revista	**FRONTIERS IN PSYCHIATRY**
Volumen	13
Número	n/a
ISSN	ISSN: 1664-0640
DOI	10.3389/fpsyt.2022.932135
Título del Artículo	Association between TPH1 polymorphisms and the risk of suicide behavior: An updated meta-analysis of 18,398 individuals
Autores e instituciones de adscripción	Genis-Mendoza, AD [1]; Hernández- Díaz, Y [2]; González-Castro, TB [2]; Tovilla-Zarate, CA [3]; Castillo-Ávila, RG [4]; López- Narváez, ML [5]; Ramos -Méndez, MA [4]; Nicolini, H [1]. [1] Inst Nacl Med Genom, Lab Genom Enfermedades Psiquiatr & Neurodegenerat, Ciudad De México, México [2] Univ Juárez Autónoma Tabasco, Div Academ Multidisciplinaria Jalpa Méndez, Jalpa De Méndez, México [3] Univ Juárez Autónoma Tabasco, Div Academ Multidisciplinaria Comalcalco, Comalcalco, México [4] Univ Juárez Autónoma Tabasco, Div Academ Ciencias Salud, Villahermosa, México [5] Hosp Chiapas Nos Dr. Gilberto Gómez Maza, Secretaría Salud, Tuxtla Gutiérrez, México
Resumen	We aimed to examine the association of *TPH1* polymorphisms with the risk of suicide behavior (SB). Design: Systematic review and meta-analysis. Method: All relevant studies that evaluated the association between the A218C (rs1800532), A779C (rs1799913) and A6526G (rs4537731) polymorphisms and the susceptibility to SB published up to September 2021 were identified through a comprehensive systematic search in PubMed, Scopus, EBSCO and Science Direct electronic databases. The association between *TPH1* gene polymorphisms and SB was evaluated using inherence models by odds ratio (OR) and 95% confidence interval (CI). Subgroup analyses, heterogeneity analyses, and publication bias were also tested in this meta-analysis. Results: The meta-analysis for *TPH1* A218C revealed an increased risk of SB in the dominant model (OR = 1.11, 95%CI 1.01–1.22). We also observed a positive association in the allelic (OR = 1.13, 95%CI 1.05–1.21), homozygous (OR = 1.22, 95%CI 1.06–1.40), heterozygous (OR = 1.21, 95%CI 1.08–1.37) and dominant (OR = 1.21, 95%CI 1.09–1.34) inherence models with the suicide attempt. Additionally, in the heterozygous (OR = 0.84, 95%CI 0.73–0.97) and dominant (OR = 0.79, 95%CI 0.68–0.91) inherence models we detected an association with completed suicide. Based on ethnicity, an association of SB in the European population also was observed (OR = 1.29, 95%CI 1.12–1.51). However, for both A779C and A6526G polymorphisms we did not find evidence of an association with SB. Conclusion: This meta-analysis suggests that the A218C polymorphism of *TPH1* gene could be a possible risk factor of SB. Future large-scale studies are required to analyze the molecular mechanisms by which affect the susceptibility of developing suicide behavior.
Palabras claves	Suicide behavior, Polymorphism, Risk allele.

Revista	**CALDASIA**
Volumen	44
Número	2
ISSN	ISSN: 1664-0640
DOI	10.15446/caldasia.v44n2.87087
Título del Artículo	Assessment of a riparian forest by applying the forest quality index (QBR) for its adaptation in tropical areas of Mexico
Autores e instituciones de adscripción	Moreno-Jiménez, V [1,2]; Gama-Campillo, LM [2]; Ochoa-Gaona, S [3]; Contreras-Sánchez, WM [2]; Mata-Zayas, EE [2]; Jiménez- Pérez, ND [2]; Áyalos- Lázaro, AA [1]. [1] Univ Autónoma Chiapas, Fac Maya Estudios Agropecuarios, Carretera Catazaja Palenque Km 4, Catazajá 29980, Chiapas, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Carretera Villahermosa Cárdenas Km 0-5 S-N, Entronque A Bosques De S 86150, Tabasco, México [3] Colegio Frontera Sur, Dept Ciencias Sustentabilidad, Av. Rancho Polígono 2a, Campeche 24500, Campeche, México
Resumen	The QBR index makes it possible the assessment of the quality of riparian forests. Therefore, QBR index was determined and correlated with attributes of vegetation and natural regeneration in five sites of the Tacotalpa River, Tabasco, Mexico: Tapijulapa, Arroyo Chispa, Nuevo Madero, Mexiquito, and Oxolotán. At each site, ten transects of 10 x 100 m sides, 20 squares of 10 × 10 m for vegetation sampling with DBH ≥ 1 cm and, 20 squares of 1 x 1 m for characterizing the natural regeneration. The values of QBR, structure, and diversity, were compared using a single factor ANOVA. In addition, a principal component analysis was performed between the QBR Index with vegetation variables. The QBR index ranged from 48.40 % and 91.10 %. Sites Mexiquito and Oxolotán showed good and very good quality (79.40 % and 91.10 %), with significant differences with Tapijulapa and Arroyo Chispa of acceptable and poor quality (56.60 % and 48.40 % respectively), but Nuevo Madero, of acceptable condition (67.90 %), did not show differences with Tapijulapa and Mexiquito, except Arroyo Chispa and Oxolotán. The QBR values were positively correlated with the richness and diversity of plants species, showing a tendency to improve in Tapijulapa together with Nuevo Madero, Mexiquito and Oxolotán. These values strengthen the hypothesis that ecological attributes provide greater reliability in the scores of the quality of riparian vegetation in tropical rivers.
Palabras claves	Habitat disturbance, True diversity, Natural regeneration.

Revista	**BIOAGRO**
Volumen	34
Número	1
ISSN	ISSN: 1316-3361 eISSN: 2521-9693
DOI	10.51372/bioagro341.5
Título del Artículo	Architecture and foliar anatomy of *Chrysophyllum cainito* L.
Autores e instituciones de adscripción	Mar-Jiménez, R [1]; Vargas-Simón, G [1]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Villahermosa, Tabasco, México
Resumen	*Chrysophyllum cainito* is a fruit tree native to Panama, but despite its nutritional and medicinal importance, there are few studies on its foliar anatomy. A collection of leaves was carried out in Cardenas, Tabasco, Mexico, and in the laboratory, traditional histological techniques were applied to study the architecture and foliar anatomy. The venation pattern was identified and the thickness of the abaxial and adaxial epidermis, mesophyll, type and size of stomata, stomata' frequency, and trichomes were identified, as well as the tissues of the midrib. The foliar architecture of this species is similar in some characteristics to that of C. rufum and Manilkara spp. as the fact that they have brochidodromous venation, and present

Resumen	intersecond and tertiary veins randomly arranged. The rectangular shape of the epidermal cells in this study was found to coincide with Nigerian C. cainito and C. rufum. Paracytic stomata are peculiar only in the analyzed C. cainito leaves and in the Thai species. The main rib of C. cainito is considered bicolateral in a closed arch analogous to C. cainito Thai. Likewise, in this work, coincidences with the species of the Sapotaceae family to which it belongs were identified, such as the presence of a unilayered epidermal layer, hypostomatic leaves, calcium oxalate crystals, and tector and "T" branched trichomes located on the abaxial surface. New attributes such as epidermis thickness, stomata' size, stomata' frequency, and midrib details were added.
Palabras claves	Mesophyll, Paracytic stomata, Sapotaceae.

Revista	**REMEDIATION-THE JOURNAL OF ENVIRONMENTAL CLEANUP COSTS TECHNOLOGIES & TECHNIQUES**
Volumen	33
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ISSN	ISSN: 1051-5658 eISSN: 1520-6831
DOI	10.1002/rem.21739
Título del Artículo	Analysis of Chrysopogon zizanioides used as floating treatment wetlands in the removal of heavy metals present in leachate
Autores e instituciones de adscripción	Alberto, AA [1]; Sugey, LM [1]; Ana, RL [1]; Eduardo, LH [1]; Carlos, MB [2]; Emanuel, HN [3]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Carretera Villahermosa Cárdenas Km 0-5 S-N, Villahermosa 86150, Tabasco, México [2] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Cunduacán, México [3] Inst Politecn Nacl, Dept Recursos del Mar, Ctr Invest & Estudios Avanzados, Unidad Mérida, Mérida, Yucatán, México
Resumen	The objective of this study was to evaluate the potential of Chrysopogon zizanioides using the Floating Wetland Treatment (FWT) technique in the removal of As, Cd, Cr, Cu, Pb, Zn, Fe, and Hg from three different concentrations of landfill leachate (100% crude leachate [L100], 75% leachate + 25% tap water [L75], and 50% leachate + 50% tap water [L50]) for a period of 60 days. The concentration of heavy metals in leachate and C. zizanioides was analyzed by inductively coupled plasma optical emission spectrometry. The results show that heavy metal concentrations decrease significantly ($p < 0.05$) in vegetation treatments. Removal efficiency was higher in the L100 leachate with 100%, 58.1%, 33.4%, 67.8%, 58.3%, 29.4%, 69.2%, and 67.2% for As, Cd, Cr, Cu, Fe, Hg, Pb, and Zn, respectively. This study demonstrates the efficiency of removing heavy metals from landfill leachate using the FWT technique.
Palabras claves	Constructed wetlands, Phytoremediation, Cadmium.

Revista	**CHEMPHYSCHEM**
Volumen	24
Número	2
ISSN	ISSN: 1439-4235 eISSN: 1439-7641
DOI	10.1002/cphc.202200582
Título del Artículo	Acid Dissociation in $(HX)_n(H_2O)_n$ Clusters (X=F, Cl, Br, I; n=2, 3)

Autores e instituciones de adscripción	Vargas-Caamal, A [1,2]; Dzib, E [2]; Ortiz-Chi, F [3]; Restrepo, A [4]; Merino, G [2]. [1] Inst Politecn Nacl, Unidad Profes Interdisciplinaria Ingn, Campus Guanajuato, Av. Mineral Valenciana 200, Guanajuato 36275, México [2] Ctr Invest & Estudios Avanzados, Dept Fis Aplicada, Unidad Mérida, Km 6 Antigua Carretera Progreso Apdo. Postal 73, Mérida 97310, Yuc, México [3] Univ Juárez Autónoma Tabasco, Catedra CONACYT, Div Acad Ciencias Básicas, Cunduacán 86690, Tabasco, México [4] Univ Antioquia UdeA, Inst Quim, Calle 70 52-21, Medellín, Colombia
Resumen	In this work, we analyze the interactions between two or three hydrogen halide molecules and the same number of water moieties through a systematic exploration of their potential energy surfaces. Our results indicate that the most stable HF and HCl aggregates do not experience dissociation of any of the acid fragments, even with three water molecules. In contrast, in the HBr and HI clusters, one of the acid fragments does dissociate. While the global minimum of $(HBr)_3(H_2O)_3$ is a hydrogen-bridged bihalide anion ($BrHBr^-$), which is persistent at temperatures up to 203 K, the lowest energy structure of $(HI)_3(H_2O)_3$ has a separated ion pair, but the motif with a bihalide anion (IHI^-) is only 0.2 kcal mol^{-1} above the global minimum. Among the more stable structures is a broad spectrum of contacts, including water···water, HX···water, and HX···HX hydrogen bonds, halogen bonds, ionic and long-range X···H contacts.
Palabras claves	Dissociation, Halides, Microsolvation.

Revista	**JOURNAL OF APPLIED ANIMAL RESEARCH**
Volumen	50
Número	1
ISSN	ISSN: 0971-2119 eISSN: 0974-1844
DOI	10.1080/09712119.2022.2123812
Título del Artículo	A novel model for estimating the body weight of Pelibuey sheep through Gray Wolf Optimizer algorithm
Autores e instituciones de adscripción	Montoya-Santiyanes, LA [1,2]; Chay-Canul, AJ [3]; Camacho-Pérez, E [2,4]; Rodríguez-Abreo, O [1,2]. [1] Univ Politecn Querétaro, El Marques 76240, Querétaro, México [2] Red Invest OAC Optimizac Automatizac & Control, El Marques, Querétaro, México [3] Univ Juárez Autónoma Tabasco, Colonia Ctr Tabasco, Div Acad Ciencias Agr, Villahermosa, Tabasco, México [4] Tecnol Nacl México, Inst Tecnol Super Progreso, Progreso, Yucatán, México
Resumen	Weight prediction in live animals remains challenging. Several studies have been carried out trying to predict the body weight in livestock through morphometric measurements, the Schaeffer's model is one of them. However, the fit of those studies in small ruminants is not well covered. Therefore, a novel model to predict the weight of Pelibuey sheep through morphometric measurements and the Gray Wolf Optimizer algorithm is presented. The model involves calculating the volume of the specimen through a truncated cone and leaving density as an estimation parameter of the algorithm. Also, two alternative models were made where the original Schaeffer's model was optimized. The modified models from the original Schaeffer's formula showed improvements up to 22.61% in R-squared and decreases up to 33.48% in RMSE. However, the truncated cone model had the best estimates, with an RMSE of 2.57, R-squared of 89.02%, and the lowest AIC. This represented a 25.13% improvement in R-squared and a 38.31% reduction in the RMSE. The model is expected to improve its efficiency if the cattle sample is larger, and it is also intended to be implemented in animals of other proportions.
Palabras claves	Morphometric, Metaheuristic, Schaeffer's formula.

Revista	**VERTEBRATE ZOOLOGY**
Volumen	72
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ISSN	ISSN: 1864-5755
DOI	10.3897/vz.72.e87275
Título del Artículo	A new arboreal *Pseudoeurycea (Caudata: Plethodontidae)* from the Sierra de Zongolica, Veracruz, Mexico
Autores e instituciones de adscripción	Cazares-Hernández, E [1]; Jimeno-Sevilla, HD [1]; Rovito, SM [2]; López-Luna, MA [3]; Canseco-Márquez, L [4]. [1] Inst Tecnol Super Zongol, Colecc Cient ITSZ & Herbario ZON, Km 4 Carretera Compahia S-N, Zongolica 95005, Veracruz, México [2] CINVESTAV, Unidad Genom Avanzada aAlvGEBIO, Guanajuato, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Biol, Carretera Villahermosa Cárdenas Km 0-5, Villahermosa 86039, Tabasco, México [4] Univ Nacl Autónoma México, Fac Ciencias, Lab Herpetol, México City 04510, DF, México
Resumen	We describe a new species of plethodontid salamander of the genus *Pseudoeurycea* from the Sierra de Zongolica, Veracruz, Mexico. The new species is distinguished from all other species in the genus by morphological and genetic features and by coloration. Based on a mtDNA phylogeny, the new species belongs to the *Pseudoeurycea juarezi* group and is most closely related to *P. ruficauda* from the Sierra Mazateca in northern Oaxaca. The newly described salamander increases the number of species of plethodontid salamanders from Veracruz to 43 and those recognized from Mexico to 140.
Palabras claves	Phylogeny, *Pseudoeurycea jaguar sp*, nov, salamander.

Revista	**ECOLOGICAL MODELLING**
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Número	n/a
ISSN	ISSN: 0304-3800 eISSN: 1872-7026
DOI	10.1016/j.ecolmodel.2022.109957
Título del Artículo	A biocontrol agent as a commensal in a plant-pest interaction
Autores e instituciones de adscripción	Jiménez, MF [1]; Blé, G [1]; Falconi, M [2]. [1] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Básicas, Km 1, Carretera Cunduacán Jalpa Méndez, Cunduacán 86690, Tabasco, México [2] Univ Nacl Autónoma México, Fac Ciencias, Depto. Matemat, Ciudad De México 04510, México
Resumen	In this work, the dynamics of a differential equation system which models pest control in a plant by means of a biocontrol agent is analyzed. It is assumed that the plant-biocontrol agent relationship is commensalism, the biocontrol agent-pest relationship is that of predator-prey, and the pest is a specialist. The impact of a biocontrol agent on the pest is measured. In particular, conditions for pest eradication and for species coexistence are shown. Some of the results show, somewhat paradoxically, that it is the low initial levels of the biocontrol agent and not the high levels that lead to a greater recovery of the plant population. Indeed, for a certain parameter region the system present simultaneously two positive equilibrium points; numerical analysis shows that the one with the highest population level of the plant is the omega-limit of those trajectories starting at points with smaller population level of the biocontrol agent than those tending to the other stable equilibrium point.
Palabras claves	Prey-predator, Biocontrol agent, Pest eradication.

Revista	**REVISTA ELECTRONICA EDUCARE**
Volumen	26
Número	1
ISSN	ISSN: 1409-4258
DOI	10.15359/ree.26-1.6
Título del Artículo	A Professionalizing Process: An Intervention in Higher Education
Autores e instituciones de adscripción	Camacho-Javier, M [1]; López-del Castillo, JC [1]. [1] Univ Juárez Autónoma Tabasco, Div Ciencias Econ Adm, Tabasco, México
Resumen	The lack of educational convergence in higher education is palpable in Mexico, with uneven progress in training by competencies, especially in the country's south. The teaching staff is considered to be the main axis in the development of educational quality. Therefore, this research aims to know how a professionalizing process applied to a group of male and female teachers from a public higher education institution located in the south of the country is assumed, seeking the development of teaching competencies. Methodology. A collaborative and participatory longitudinal exploratory-descriptive action research was conducted. A professionalizing process was designed and applied in one of the most populated academic divisions of the Educational Institution (IE) that was the subject and object of the study. The research was conducted in one and a half years with a group of teachers selected for convenience and with interchangeable roles. Results. Through qualitative and quantitative indicators, the involvement of the teaching staff in the professionalizing process is shown. These indicators are voluntary participation, recognitions, dissemination of academic performance, evidence of teaching-learning by competencies, didactic-pedagogical interaction, and theory in practice. Discussion. The importance of an educational management with proactive leadership that practices a more cohesive curriculum towards interdisciplinary and transdisciplinary work is highlighted, seeking socially responsible management. Finally, collaborative and participatory action research guides towards a knowledge bridge for the development of teaching competencies; however, the continuity of this process is required to innovate in higher education.
Palabras claves	Teaching skills, Collaborative and participatory action research, Professionalizing process.

Revista	**ANIMALS**
Volumen	12
Número	7
ISSN	ISSN: 2076-2615
DOI	10.3390/ani12070837
Título del Artículo	A Brief Update on the Challenges and Prospects for Goat Production in Mexico
Autores e instituciones de adscripción	A Tajonar, K [1]; Díaz, CAL [2]; Ibarra, LES [1]; Chay-Canul, AJ [3]; González-Ronquillo, M [4]; Vargas-Bello-Pérez, E [5]. [1] Univ Nacl Autónoma México, Fac Med Vet & Zootecnia, Depto. Med & Zootecnia Rumiantes, Av. Univ 3000, México City 04510, DF, México [2] Univ Nacl Autónoma México, Fac Med Vet & Zootecnia, Depto. Econ Adm & Desarrollo Rural, Av. Univ 3000, México City 04510, DF, México [3] Univ Juárez Autónoma Tabasco, Div Acad Ciencias Agr, Km 25 Carretera Villahermosa Teapa, Villahermosa 86280, Tabasco, México [4] Univ Autónoma Estado México, Fac Med Vet & Zootecnia, Av. Inst Literario 100, Toluca 50000, México [5] Univ Copenhagen, Fac Hlth & Med Sci, Dept. Vet & Anim Sci, Gronnegardsvej 3, DK-1870 Frederiksberg C, Denmark
Resumen	Simple Summary: Today, globally, there is a need for animal protein products. Goats are a viable option as they can transform feed to high-quality foods. In Mexico, information on goat production is scarce and documenting goat production challenges and future perspectives could be of great value, not only for Latin America, but also for international players—including those from farms, industry,

Resumen	and academia. The main challenges are correlated at different levels, where economic, social, and environmental issues are mixed and are closely associated with goat health and welfare. Newly available farming technologies could be an option that should be explored. Mexican goat farming systems will need to look at animal, social, and environmental factors to promote sustainable production systems. In Mexico, information on goat production is scarce and documenting goat production challenges and future perspectives could be of great value, not only for Latin America, but also for international players—including those from farms, industry, and academia. Therefore, the objective of this review is to provide current knowledge on goat production systems in Mexico and discuss current challenges and future perspectives for this animal production sector. In Mexico, more than 70% of goats are produced under extensive production systems in arid and semi-arid areas and roughly 25% are produced in intensive or semi-intensive systems. Main breeds are French Alpine, Saanen, Toggenburg, LaMancha, Nubian, Boer, and their crosses. The main challenges are correlated at different levels, where economic, social, and environmental issues are mixed and are closely associated with goat health and welfare. Newly available farming technologies could be an option that should be explored. Mexican goat farming systems will need to look at the animal, social, and environmental factors to promote sustainable production systems.
Palabras claves	Mexico, Welfare, Sustainability.

Revista	**MOLECULES**
Volumen	27
Número	13
ISSN	eISSN: 1420-3049
DOI	10.3390/molecules27134187
Título del Artículo	2,5-Dimethylfuran Production by Catalytic Hydrogenation of 5-Hydroxymethylfurfural Using Ni Supported on Al_2O_3-TiO_2-ZrO_2 Prepared by Sol-Gel Method: The Effect of Hydrogen Donors
Autores e instituciones de adscripción	Cortez-Elizalde, J [1]; Córdova- Pérez, GE [1]; Silahua- Pavón, AA [1]; Pérez-Vidal, H [1]; Cervantes-Uribe, A [1]; Cordero-García, A [1]; Arévalo- Pérez, JC [1]; Becerril-Altamirano, NL [1]; Castillo-Gallegos, NC [1]; Luna Gómez -Rocha, MA [1]; de León, JND [2]; Guerra-Que, Z [3]; de los Monteros, AEE [1]; Torres-Torres, JG [1]. [1] Univ Juárez Autónoma Tabasco, Ctr Invest Ciencia & Tecnol Aplicada Tabasco CICT, Div Acad Ciencias Básicas DACB, Lab Nanomat Catalit Aplicados Desarrollo Fuentes, Km 1 Carretera Cunduacán Jalpa De Méndez, Cunduacán 86690, México 2 Univ Nacl Autónoma México, Ctr Nanociencias & Nanotecnol, Km 107 Carretera Tijuana Ensenada, Apdo. Postal 14, Ensenada 22800, Baja California, México 3 Tecnol Nacl México, Lab Invest Área Nanotecnol 1, Km 3-5 Carretera Villahermosa Frontera, Villahermosa 86010, Tabasco, México
Resumen	5-Hydroxymethylfurfural (5-HMF) has been described as one of the 12 key platform molecules derived from biomass by the US Department of Energy, and its hydrogenation reaction produces versatile liquid biofuels such as 2,5-dimethylfuran (2,5-DMF). Catalytic hydrogenation from 5-HMF to 2,5-DMF was thoroughly studied on the metal nickel catalysts supported on Al_2O_3-TiO_2-ZrO_2 (Ni/ATZ) mixed oxides using isopropanol and formic acid (FA) as hydrogen donors to find the best conditions of the reaction and hydrogen donor. The influence of metal content (wt%), Ni particle size (nm), Nickel Ni^0, Ni^0/NiO and NiO species, metal active sites and acid-based sites on the catalyst surface, and the effect of the hydrogen donor (isopropanol and formic acid) were systematically studied. The structural characteristics of the materials were studied using different physicochemical methods, including N_2 physisorption, XRD, Raman, DRS UV-Vis, FT-IR, SEM, FT-IR Py_{ad}, H_2-TPD, CO_2-TPD, H_2-TPR, TEM and XPS. Second-generation 2,5-DMF biofuel and 5-HMF conversion by-products were analyzed and elucidated using ^{1}H NMR. It was found that the Ni^0NiO/$ATZ3_{WI}$ catalyst synthesized by the impregnation method (WI) generated a good synergistic effect between the species, showing the best catalytic hydrogenation of 5-HMF to 2,5-DMF using formic acid as a hydrogen donor for 24 h of reaction and temperature of 210 °C with 20 bar pressure of Argon (Ar).
Palabras claves	5-hydroxymethylfurfural, 2,5-dimethylfuran, Hydrogen donor.

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