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CENTRO DE DOCUMENTACIÓN Y BIBLIOTECA



**ALERTA BIBLIOGRÁFICA DE LA PRODUCCIÓN CIENTÍFICA
DEL COLEGIO DE POSTGRADUADOS EN REVISTAS
INDIZADAS EN EL ISI WEB DE LA CIENCIA Y SCOPUS
DURANTE JUNIO DE 2012**

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Montecillo, Texcoco, Estado de México
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TABLA DE CONTENIDO

	Página
Tabla de Contenido	2
Índice por categorías temáticas de las revistas en el Journal of Citation Reports.	3
Introducción.	4
Documentos Indizados en el Thomson Reuters ISI Web de la Ciencia.	6
Documentos Indizados en SCOPUS.	33
Glosario.	39
Anexo 1	43
Anexo 2	44

Ilustración de la portada: **Poema de Gilgamesh** - Entre 2000 y 2100 a.C. Es una narración de la Mesopotamia de origen sumerio, considerada como la narración escrita más antigua de la historia. Los estudiosos consideran que se originó en una serie de leyendas y poemas sumerios sobre el mitológico héroe-rey Gilgamesh, los que fueron ensamblados mucho después en un poema más extenso acadiano. Fuente: [Los diez libros más antiguos del mundo](#).

ÍNDICE

Por categorías temáticas de las revistas en el Journal of Citation Reports.

Por medio del número de referencia bibliográfica se pueden localizar las referencias en la sección: “Documentos indizados en el Thomson Reuters ISI Web de la Ciencia”.

Categorías Temáticas de las Revistas	No. de Referencia Bibliográfica en el Texto
Agriculture multidisciplinary	2, 3, 9, 15, 16, 17, 18
Agriculture, Dairy & Animal Science	13
Agronomy	3, 25, 30, 32
Biochemistry and Molecular Biology	12, 31
Biodiversity Conservation	8
Biotechnology & Applied Microbiology	33
Chemistry Applied	2
Ecology	5, 10, 31
Endocrinology and Metabolism	12
Entomology	21, 22
Environmental Sciences	34, 35
Evolutionary Biology	31
Food Science & Technology	2
Forestry	4, 14, 23, 24, 25
Medical Laboratory Technology	19
Microbiology	1, 34
Parasitology	6
Pharmacology & Pharmacy	19
Plant Sciences	5, 11, 19, 28, 30, 32, 33
Soil Science	30
Statistics & Probability	26, 27
Sin Categoría Temática	7, 29

INTRODUCCIÓN

La presente alerta incluye 35 artículos indizados en el ISI Web de la Ciencia de Thomson Reuters Scientific y ocho artículos indizados en SCOPUS de Elsevier durante el mes de junio de 2012, en los cuales figuran investigadores del Colegio de Postgraduados como autores. Tanto el ISI Web de la Ciencia como SCOPUS indizan los documentos con diferentes periodos de retraso respecto a la aparición de las revistas, que generalmente va de un mes hasta medio año, por lo que se encontrarán documentos que fueron publicados de finales del 2011 hasta mayo de 2012, dándose el caso de algunos artículos publicados en junio de 2012.

Los registros incluyen además de la referencia bibliográfica, resumen y/o abstract, las ligas a los documentos en texto completo en formato html, pdf y en algunos casos en epub, ya sea a través de una URL de página web o de DOI. El acceso al texto completo de los artículos que no son de Acceso abierto depende de que quien lo requiera tenga el derecho de descargar el archivo.

De las 29 revistas indizadas en el ISI Web de la Ciencia durante el mes de junio que publicaron artículos de investigadores del Colegio de Postgraduados, solo cinco se encuentran posicionadas dentro del primer cuartil en su respectiva área temática de acuerdo al factor de impacto en el JCR 2011 (*Molecular Ecology, Plant Cell Tissue and Organ Culture, Plant and Soil, Trees structure and function, y Journal of the Science of Food and Agriculture*), cinco se encuentran el segundo cuartil, ocho en el tercer cuartil y 12 en cuarto cuartil, entre ellas las cuatro revistas mexicanas, solo *Agrociencia* se coloca en el tercer cuartil; dos revistas todavía no tienen Factor de Impacto (Véase el Anexo 1).

Como se puede observar en el Anexo 1, el 66% de las revistas, sin contar las que no tienen factor de impacto, se ubican dentro del tercer y cuarto cuartil, y solo el 33% se ubican dentro del primer y segundo cuartil en sus áreas temáticas. La importancia de la posición en el área temática de las revistas es que entre mejor posicionadas estén en su materia, más posibilidades tienen los artículos de ser citados e influir en la generación de nuevo conocimiento, impactando positivamente en la ciencia.

Seis revistas se editan en los países bajos, cinco son editadas en México, cinco en Estados Unidos, cuatro en Sudamérica (Brasil, Chile (2) y Venezuela; tres en Inglaterra, y una en cada uno de los siguientes países: Australia, Alemania, Japón y Sudáfrica. Las publicaciones editadas en los países bajos e Inglaterra tienen los más altos factores de impacto y mejor posición en sus áreas temáticas (Véase el Anexo 1).

La áreas temáticas en las que más se publicaron artículos fueron; Ciencias de las Plantas, Agricultura Multidisciplinar, Silvicultura, Agronomía y Ecología (Véase Anexo 1) y Tabla 1.

Tabla 1. Categorías temáticas de las revistas y el número de artículos publicados en las revistas. El total de artículos no coincide porque algunas revistas están incluidas en dos o más categorías temáticas.

Categorías temáticas de las revistas	No. de Artículos
Plant Sciences	7
Agriculture multidisciplinary	7
Agronomy	4
Forestry	4
Ecology	3
Biochemistry and Molecular Biology	2
Microbiology	2
Statistics & Probability	2
Agriculture, Dairy & Animal Science	1
Biodiversity Conservation	1
Biotechnology & Applied Microbiology	1
Chemistry Applied	1
Endocrinology and Metabolism	1
Entomology	1
Environmental Sciences	1
Evolutionary Biology	1
Food Science & Technology	1
Medical Laboratory Technology	1
Parasitology	1
Pharmacology & Pharmacy	1
Soil Science	1
Sin Categoría Temática	2

Fuente: Elaboración propia con datos del JCR 2011.

I. DOCUMENTOS INDIZADOS EN EL THOMSON REUTERS ISI WEB DE LA CIENCIA

1. Reverchon, Frederique; María del Pilar Ortega-Larrocea; German Bonilla-Rosso,; Jesús Pérez-Moreno. 2012. [Structure and species composition of ectomycorrhizal fungal communities colonizing seedlings and adult trees of Pinus montezumae in Mexican neotropical forests.](#) *Fems Microbiology Ecology*, 80 (2):479-487; May 2012. DOI: <http://dx.doi.org/110.1111/j.1574-6941.2012.01314.x> [Documento en Pdf](#)

Abstract: Mexico is a center of diversity for pines, but few studies have examined the ectomycorrhizal (ECM) fungal communities associated with pines in this country. We investigated the ECM communities associated with *Pinus montezumae* seedlings and mature trees in neotropical forests of central Mexico and compared their structure and species composition. Root tips were sampled on both planted seedlings and naturally occurring adult trees. A total of 42 ECM operational taxonomic units (OTUs) was found on *P. similar to montezumae*. Diversity and similarity indices showed that community structure was similar for both plant growth stages, but phylogenetic diversity and Chao-estimated richness were higher for seedlings. Species composition differed between communities. The dominant OTUs belonged to the families Atheliaceae, Cortinariaceae, and Sebacinaceae, although different taxa appeared to colonize seedlings and adults. Only 12 OTUs were shared between seedlings and adults, which suggests that ECM fungi which colonize seedlings are still not fully incorporated into mycelial networks and that ECM taxa colonizing young individuals of *P. similar to montezumae* are likely to come from fungal propagules. Intra-generic diversity could be an insurance mechanism to maintain forest productivity under stressed conditions. This is the first report describing the abundance of Atheliaceae in tree roots in neotropical ecosystems.

2. Shin, Daekeun; Narciso- Gaytán, Carlos; Regenstein, Joe M.; Sánchez-Plata, Marcos. 2012. [Effect of various refrigeration temperatures on quality of shell eggs.](#) *Journal of the Science of Food and Agriculture*, 92 (7):1341-1345; May 2012. DOI: <http://dx.doi.org/110.1002/jsfa.4699> [Documento en PDF](#)

Abstract: BACKGROUND: The objective of this study was to evaluate the effects of low storage temperatures on shell egg quality. RESULTS: Approximately 2100 shell eggs were collected and stored at -1.1, 0.6, 2.2, 3.9, 5.6 and 7.2. C for up to 4 weeks. Eighteen eggs at each storage temperature were evaluated after 0, 2, 7, 14, 21 and 28 days of storage. Haugh units (HU), yolk index (YI), albumen pH (pHA), yolk pH (pHY) and angel food cake

density (CD) were measured. Shell egg quality tended to be preserved better at below 2.2. C, as high HU and YI values relative to eggs stored at 7.2. C were determined on day 28. However, storage at -1.1. C tended to cause the opposite effect, especially highly declined HU values over time. Significantly different HU values of shell eggs were measured after 14 days of storage, with eggs stored at 0.6 and 2.2. C having the highest HU values, 80.42 and 77.97 respectively. CONCLUSION: A lower temperature limit for shell egg storage could be established between 0.6 and 2.2. C, as both temperatures showed the highest HU values, 77.88 and 77.60 respectively, after 28 days of storage. (C) 2011 Society of Chemical Industry

3. Ortiz U., Ana; Silva A., Gonzalo; Urbina P., Angélica; Zapata S. M., Nelson; Rodríguez M., J. Concepción; Lagunés Tejeda., Ángel. 2012. [Bioactivity of tepa \(Laureliopsis philippiana \(LOOSER\) SHODDE\) powder to Sitophilus zeamais Motschulsky Control in Laboratory](#). Chilean Journal of Agricultural Research, 72 (1):68-73; jan-mar 2012. [Documento en PDF](#)

Resumen: El gorgojo del maíz (*Sitophilus zeamais* Motschulsky) es una de las plagas que provoca pérdidas a los granos almacenados más importantes a nivel mundial. El control de esta especie se realiza fundamentalmente con aplicaciones continuas de insecticidas organofosforados y piretroides y fumigantes como fosfuro de aluminio, pero problemas con éstos han hecho necesaria la búsqueda y desarrollo de nuevos métodos de control. Se evaluó el efecto insecticida del polvo de hojas de tepa, *Laureliopsis philippiana* (Looser) Shodde, sobre el gorgojo del maíz en condiciones de laboratorio. Los parámetros evaluados fueron mortalidad y emergencia de insectos adultos, pérdida de peso y germinación de los granos, además de residualidad, repelencia y efecto fumigante. La mayor mortalidad de insectos se registró con los tratamientos 1, 2 y 4%, con valores entre 94,7 y 100%. Con estas mismas concentraciones se obtuvo una emergencia de insectos adultos de 0%. La pérdida de peso de los granos no superó los 5,7 g en todos los tratamientos y la germinación de semillas no fue afectada. El polvo de *L. philippiana* mostró efecto repelente en todas las concentraciones y ninguna de ellas presentó acción fumigante. El efecto insecticida del polvo se mantuvo durante 14 d. Finalmente, se concluye que el polvo de *L. philippiana* tiene gran potencial para el control de *S. zeamais*.

Abstract: The maize weevil (*Sitophilus zeamais* Motschulsky) is one of the most widespread pests and causes heavy losses of stored grain throughout the world. Control of this insect is primarily dependent upon continued applications of organophosphorus and pyrethroid insecticides and fumigants as phosphine but the increasing problems with

current insecticides drive the need for research and to develop new control methods. The insecticidal effect of leaf powder of tepa, Laureliopsis philippiana (Looser) Shodde, was evaluated against maize weevil under laboratory conditions. The parameters evaluated were adult mortality and emergence, grain weight loss and germination, and residual, repellent and fumigant effect. The highest levels of insect mortality were registered with treatments at 1, 2, and 4%, with values from 94.7 to 100%. Also, it was obtained 0% of adult insect emergence with these concentrations. In all treatments grain weight was less than 5.8 g. Seed germination was not affected. The powder of L. philippiana exhibited repellent effect in all concentrations and did not show fumigant effect. Insecticidal effect of powder remained for 14 d. Finally, we concluded that powder of L. philippiana has great potential for controlling S. zeamais.I

4. Saynes, Vinisa; Etchevers, Jorge D.; Galicia, Leopoldo; Hidalgo, Claudia; Campo, Julio. 2012. Soil carbon dynamics in high-elevation temperate forests of Oaxaca (Mexico): thinning and rainfall effects. *Bosque*, 33 (1):3-11; 2012.
DOI: <http://dx.doi.org/10.4067/S0717-92002012000100001>. [Documento en PDF](#)

Resumen: Las concentraciones de carbono (C) total y en la biomasa microbiana del suelo (CBMS), y la respiración basal del suelo (RBS) en bosques templados naturales (testigo) y rodales con aprovechamiento (después de uno y 20 años de la extracción), fueron determinadas en dos regiones (seca y húmeda) con bosques templados en Oaxaca, México, con el fin de explorar efectos del manejo en la dinámica de las fracciones biológicamente activas de la materia orgánica del suelo. Los valores medios de C-total fueron mayores en la región seca que en la húmeda. La mayor cantidad de precipitación media anual produjo menor RBS, pero tuvo efectos inconsistentes en la concentración de CBMS dependiendo de la cantidad de lluvia en el año de muestreo. En la región seca, el CBMS fue mayor en la estación seca que en la de lluvias y la RBS mayor en los suelos recolectados en la estación de lluvias que en aquellos recolectados en la seca. El aprovechamiento disminuyó las concentraciones de C-total y de CBMS, y la RBS. En la región húmeda, la estacionalidad en las lluvias no afectó la concentración de CBMS ni la RBS. En esta región, la principal respuesta al raleo del bosque fue el aumento en la concentración de C-total. Se concluye que los almacenes de carbono en el suelo y los efectos del raleo del bosque en las fracciones activas de la materia orgánica del suelo variarán dependiendo de los detalles en la cantidad de lluvia que recibe el sitio anualmente.

Abstract: To explore the forest harvest effects on biologically active fractions of soil organic matter dynamics, we evaluated soil total carbon (C-total) and soil microbial biomass carbon (SMBC) concentrations, and basal soil respiration (BSR) in old-growth forest (as control) and logged stands (logged one- and 20-yrs ago) in two regions (dry and wet regions) in temperate forests of Oaxaca, Mexico. Mean C-total values were higher in the Dry region than in the Wet region. Greater mean annual precipitation resulted in consistently lower BSR, but had inconsistent effects on the SMBC in dependence upon annual rainfall in the sampling year. In the dry region SMBC was higher in the dry season than in the rainy season, and BSR was higher in soils collected in the rainy season than those collected in the dry season. Forest logging consistently decreased C-total and SMBC concentrations and BSR. In contrast, rainfall seasonality in the Wet region did not affect SMBC concentration or BSR. On the other hand, in this region, the main response to the forest thinning application was an increase in the concentration of C-total. Overall, we conclude that the soil carbon pools and the effects of forest thinning on the biologically active fractions of soil organic matter will vary, depending on the details of the site's annual rainfall amount.

5. Ramírez -Tobías, Hugo M.; Pena-Valdivia, Cecilia B.; Rogelio Aguirre R. J.; Antonio Reyes-Agüero, J.; Sánchez-Urdaneta, Adriana B.; Valle G, Salvador. 2012. [Seed germination temperatures of eight Mexican Agave species with economic importance](#). *Plant Species Biology*, 27 (2):124-137; May 2012. DOI: <http://dx.doi.org/10.1111/j.1442-1984.2011.00341.x> [Documento en PDF](#)

Abstract: The genetic diversity of Agave plants is threatened by clonal commercial reproduction and climatic change. Sexual reproduction is uncommon and research on seed germination is scarce. The present study evaluated the seed germination of *Agave lechuguilla*, *Agave striata*, *Agave americana* var. *marginata*, *Agave asperrima*, *Agave cupreata*, *Agave durangensis*, *Agave angustifolia* ssp. *tequilana* and *Agave salmiana* at constant temperatures (10, 15, 20, 25, 30, 35 and 40 degrees C). Initial imbibition (after the first 12 h) was significantly variable among species, positively correlated with seed weight ($r = 0.6560$, $P < 0.001$) and increased with temperature (from 35% at 10 degrees C to 66% at 40 degrees C). Temperature affected maximum imbibition (83150%) for *A. asperrima*, *A. lechuguilla*, *A. salmiana* and *A. striata*; other species averaged 110%. Most germination kinetics best fitted a logistic model, whereas only a few treatments fit a Weibull model. The time to germination onset diminished ($P < 0.05$) from 125173 h at 15 degrees C to 6884 h at 25 degrees C, and then ascended to 84196 h at 35 degrees C. The mean germination rate and seed germination percentage after 312 h peaked at 25

degrees C (0.500.95% seeds/h and 8599%, respectively) and fell ($P < 0.05$) to near zero at 10 and 40 degrees C. Temperatures of 10, 35 and 40 degrees C were partially lethal to *A. asperrima*, *A. duranguensis* and *A. salmiana* seeds. The time to germination onset, seed germination percentage after 312 h and mean germination rate are best described by a Gaussian distribution, with its optimum at approximately 25 degrees C. Thus, optimum temperatures are related to the ecological characteristics of each species area.

6. Alvarado-Esquivel, C.; González-Salazar, A. M.; Alvarado-Esquivel, D.; Ontiveros-Vázquez, F.; Vitela-Corrales, J.; Villena, I.; Dubey, J. P. 2012. [Seroprevalence of Toxoplasma gondii Infection in Chickens in Durango State, Mexico. Journal of Parasitology](#), 98 (2):431-432; Apr 2012 DOI: <http://dx.doi.org/10.1645/GE-2979.1>; [Documento en PDF](#).

Abstract: Little is known concerning the seroprevalence of *Toxoplasma gondii* infection in chickens (*Gallus domesticus*) in Mexico. Antibodies to *T. gondii* were determined in 519 chickens in Durango, Mexico using the modified agglutination test (MAT). Two groups (A, B) of chickens were sampled. Group A chickens ($n = 51$) were raised in backyards in 7 municipalities in 3 geographical regions in Durango State. Group B chickens were raised in farms in the Mexican States of Sinaloa ($n = 289$) and Nayarit ($n = 179$) but slaughtered in 2 abattoirs in Durango City. Overall, antibodies to *T. gondii* were found in 36 (6.9%) of 519 chickens, with MAT titers of 1:25 in 22, 1:50 in 8, 1:100 in 2, 1:200 in 3, and 1:400 in 1. Seroprevalence of *T. gondii* increased significantly with age and was significantly higher in Group A chickens than in Group B chickens. In Group A chickens, a 25.5% seroprevalence of *T. gondii* infection was found. Seropositive chickens were found in all 7 municipalities sampled. In Group B chickens, the seroprevalence of *T. gondii* infection was 4.9%. This is the first report of *T. gondii* infection in chickens in Durango State, Mexico.

7. Benítez, Griselda; Pérez-Vázquez, Arturo; Nava-Tablada, Martha; Equihua, Miguel; Luis Álvarez-Palacios, José. 2012. [Urban expansion and the environmental effects of informal settlements on the outskirts of Xalapa city, Veracruz, Mexico. Environment and Urbanization](#), 24 (1):149-166; Apr 2012. DOI: <http://dx.doi.org/10.1177/0956247812437520>. [Documento en PDF](#).

Abstract: This paper analyzes the dynamics of population growth and urban expansion in the city of Xalapa, Mexico. It focuses on the establishment of informal settlements, which are one of the many threats to forest and farmland conservation (although these

settlements are not the only source of the problem). Spatial analysis of growth data (using Geographical Information Systems (GIS) and statistical modelling) showed that by 2007, 90 per cent of the land area in the municipality of Xalapa had already been altered by human activity. Furthermore, informal settlements occupied around 54 per cent of the urban area. The cover of cloud forest, the region's original ecosystem that is of immense ecological importance and biological wealth, was calculated at only 7.6 per cent (9.3 square kilometres) and this is being threatened by the continued expansion of informal settlements. It appears that, at the time when these informal settlements are being established, a certain environmental logic operates, which in turn makes possible the social logic that sets off the occupation of spaces that are, in principle, not suitable for urbanization. The inadequate income of much of the population and their need for housing, as well as the absence of genuine long-term urban planning and, most importantly, the lack of legally available contiguous land for building, are encouraging the occupation of land not suitable for urban development, including sites at high risk of landslides and flooding. This is also causing natural resource and farmland degradation as well as the deterioration of living conditions within the urban boundary, problems that threaten the city's sustainability.

8. **Ugalde-Lezama, Saúl; Luis Alcántara-Carbajal, José; Antonio Tarango-Arambula, Luis; Ramírez-Valverde, Gustavo; David Mendoza-Martínez, German.** 2012 [Vegetation physiognomy and abundance of birds in a temperate forest with two disturbance levels in the Eje Neovolcanico Transversal.](#) *Revista Mexicana de Biodiversidad*, 83 (1):133-143; Mar. 2012. [PDF](#)

Resumen. Durante noviembre 2003 y junio 2004 se estudió la abundancia de especies de aves y su relación con la fisonomía vegetal en un bosque templado bajo 2 condiciones: bosque de pino no perturbado (ZOQ1) y bosque de pino perturbado (ZOQ2) de la Estación Forestal Experimental Zoquiapan (EFEZ), Estado de México. Para el conteo de aves se empleó el método de puntos de conteo con radio fijo (25 m). Los principales gradientes de las variables descriptoras de la vegetación se determinaron con análisis de componentes principales (ACP) y la relación fisonomía-abundancia por especie y grupos de aves mediante análisis de regresión Poisson (ARP). Los ejes principales del ACP explicaron el 84.3, 83.4 y 81.7% de la variabilidad presente en la vegetación de ZOQ1, ZOQ2 y ZOQ1-ZOQ2. La cobertura, diámetro y altura de árboles fueron las variables que explicaron el 41.5, 43.7 y 41.8% de la varianza para el componente 1. La cobertura, diámetro y altura de arbustivas explicaron el 28.4, 25.0 y 25.3% para el 2; por último, la cobertura de herbáceas y arbustivas el 14.4, 14.6 y 14.5% para el componente 3. Los ARP indicaron una relación estadísticamente significativa ($p < 0.05$) entre la fisonomía vegetal (descrita por los 3 primeros ejes del ACP) y la abundancia en 19 (ZOQ1) y 24 (ZOQ2) especies de aves registradas; así como en los 3 grupos de aves analizados, lo cual evidencia un efecto de la fisonomía vegetal sobre ciertas especies y grupos avifaunísticos.

Abstract: From November 2003 to June 2004, we studied the abundance of bird species and their relationship with vegetation physiognomy (structure) in a temperate forest

under 2 conditions: undisturbed forest (ZOQ1) and disturbed forest (ZOQ2) of the Zoquiapan Forest Experimental Station (EFEZ, acronym in Spanish) in central Mexico. Birds were recorded using the method of fixed radius point counts (25 m). We identified the major gradients of variation of descriptive variables of vegetation using Principal Component Analysis (PCA), and the relationship between vegetation physiognomy and bird abundance through Poisson regression analyses (ARP). The three main axes of PCA explained the 84.3, 83.4 and 81.7% of the variability present in the vegetation of ZOQ1, ZOQ2 and ZOQ1-ZOQ2, respectively. Tree cover, diameter and tree height explained the 41.5, 43.7 and 41.8% of the variance for component 1. Bush cover, diameter and bush height contributed to 28.4, 25.0 and 25.3% for component 2, while herbaceous and bush cover explained the 14.4, 14.6 and 14.5% for component 3. The ARP indicated a statistically significant relationship ($p<0.05$) between vegetation physiognomy (described by the first 3 axes of the ACP) and the abundance in 19 (ZOQ1) and 24 (ZOQ2) species of birds recorded; as well as in the three groups of birds analyzed, which indicates that some habitat features had an effect on the abundance of particular bird species.

9. Avendaño-Arrazate Hugo, Carlos; Cadena-Iñiguez, Jorge; Lourdes Arévalo-Galarza, María; Manuel Cisneros-Solano, Víctor; Francisco Aguirre-Medina, Juan; del Carmen Moreno-Pérez, Esaú; Cortes-Cruz, Moisés; Román Castillo-Martínez, Carlos; Ramírez-Vallejo, Porfirio 2012. Genetic variation of an infraspecific chayote complex evaluated by isoenzymatic systems. *Pesquisa Agropecuaria Brasileira*, 47 (2):244-252; Feb. 2012. <http://dx.doi.org/10.1590/S0100-204X2012000200013>.

Resumen: El objetivo de este trabajo fue estimar el grado de variación genética dentro del complejo infraespecífico de *Sechium* mediante el uso de sistemas isoenzimáticos. Se analizaron 23 loci codificados por 12 sistemas isoenzimáticos, en geles de almidón, en 10 individuos de cada una de las 30 accesiones (27 cultivadas y tres silvestres). La variación genética se estimó con base en el número promedio de alelos por locus (NPAL), porcentaje de porlimorfismo (PP), heterocigosidad observada y esperada (H_o y H_e), índice relativo de heterocigosidad (IRH) e índice de Shannon (IS). Para NPAL y PP, el promedio para las 30 accesiones fue de 2, 03 y 59, 8%, respectivamente. El análisis de H_o y H_e mostró variación genética en el complejo infraespecífico de *Sechium*, con valores promedio de 0, 05 y 0, 26, respectivamente. El IRH mostró una deficiencia de individuos heterocigotos (promedio de -0, 75). El IS mostró gran diversidad en las 30 accesiones (0, 41). Las poblaciones con mayor diversidad fueron Negrito, Verde liso, Negro xalapa, Verde espinoso y Negro cónico; con una variación intermedia fueron Castilla blanco, Caldero y Blanco pequeño; y, con poca variación, Castilla verde, Cambray y los parientes silvestres.

Abstract: The objective of this work was to estimate the degree of genetic variation in an infraspecific complex of Sechium using isoenzymatic systems. For this purpose, 23 loci were codified by 12 isoenzymatic systems and analyzed in starch gels, in 10 individuals from each of the 30 accesions of Sechium (27 cultivated and three wild relatives). The estimation of genetic variation was based on the average number of alleles per locus (NPAL), polymorphism percentage (PP), observed and expected heterozygosity (H_o and H_e), relative heterozygosity index (RHI) and Shannon's index (IS). For NPAL and PP, the average for the 30 accesions was 2.03 and 59.8%, respectively. The analysis of H_o and H_e showed genetic variation in the infraspecific complex of Sechium, with 0.05 and 0.26 average values, respectively. The RHI showed a deficiency of heterozygote individuals (average of -0.75). The IS showed a great diversity in the 30 accesions (0.41). The populations with the greatest genetic variations were Negrito, Verde liso, Negro xalapa, Verde espinoso and Negro conico; with intermediate variation were Castilla blanco, Caldero and Blanco pequeno; and with little variation were Castilla verde, Cambray and wild relatives.

10. Vargas, Leo; Alejandro José; Adame Martínez, Salvador; Jiménez Jiménez, José de Jesús 2012. Mobility, sustainability and fuels of brt systems in Mexico. *Interciencia*, 37 (2):154-160; Feb. 2012.

Resumen: El presente trabajo se enfoca al estudio de la movilidad, la sustentabilidad y combustibles, desde el punto de vista ambiental de los Sistemas de Transporte Rápido de autobús articulado (BRT, del inglés Bus Rapid Transit), por su estrecha relación con el medio ambiente, por su importancia a nivel mundial y por su reciente implementación en algunas ciudades de México. Debido a que los autobuses articulados, equipados con motores de combustión interna de gran capacidad, son el principal componente de los sistemas BRT, se abordan los temas que tienen relación directa con el uso de combustibles y el transporte, tales como la movilidad urbana, la sustentabilidad relacionada con el medio ambiente, el transporte urbano, y los tipos de combustibles utilizados por los autobuses articulados de dichos sistemas.

Abstract: The present work focuses on the study of mobility sustainability and fuels of Bus Rapid Transit (BRT) systems from the environmental point of view; as the latter are closely related to the environment, their importance increases around the world, and because of their recent implementation in some cities of Mexico. Because of BRT buses, equipped with high capacity internal combustion engines, are the principal component of this type of systems, topics are treated that have a direct relation with the use of fuels and transportation, such as urban mobility, sustainability and environment, urban transport and different kinds of fuels for BRT buses.

- 11. Lagunés-Espinoza, Luz del Carmen; López-Upton, Javier; García - López, Eustolia; Jasso-Mata, Jesús; Delgado-Alvarado, Adriana; García de los Santos, Gabino**
2012. [Morphological diversity and protein concentration of Lupinus spp. in Central-Eastern Region of the state of Puebla, México](#) *Acta Botánica Mexicana*, 99 73-90;
2012. [Documento en PDF](#)

Resumen: El objetivo del presente estudio fue caracterizar la diversidad morfológica y determinar la concentración de proteína en semillas del género Lupinus (Leguminosae) en los ecosistemas agrícola y forestal de la región centro oriental del estado de Puebla. Las poblaciones de Lupinus se localizaron entre 2600 y 4000 m s.n.m., en suelos con pH que varía de ácido (4.7) a neutro (7.1), con elevados contenidos de materia orgánica (> 7.8%) y bajos niveles de K⁺ intercambiable (< 6 cmol + g⁻¹). Dichas poblaciones mostraron una gran variabilidad morfológica, resultado de la diversidad de los representantes de este género en el área de estudio. Cuatro especies fueron identificadas con base en sus características morfológicas e intervalo altitudinal: L. campestris, localizada entre 2600 y 3052 m sobre el nivel del mar, en bordes de cultivos de maíz y haba o áreas con bosque de Juniperus deppeana, pinus spp. y Abies religiosa; L. exaltatus se encontró entre 2778 y 2865 m de altitud en bosques de p. montezumae; L. hintonii a 3080 m en bosques de A. religiosa; y L. montanus a elevaciones superiores a los 3000 m en bosques de p. hartwegii, p. montezumae, p. rufa y A. religiosa. Se registraron concentraciones altas de proteína de la semilla entre y en las especies; la primera en promedio varió de 328 a 387 g kg⁻¹ de materia seca (MS) y la segunda de 317 g kg⁻¹ (una población de L. exaltatus) a 481 g kg⁻¹ MS (una población de L. campestris).

Abstract: The present study aimed to characterize the diversity of Lupinus genus (Leguminosae) present in agricultural and forest ecosystems of eastern central region of the Mexican state of Puebla, and to estimate seed protein concentration in species identified. Natural populations were located from 2600 to 4000 m above sea level in soils with neutral (7.1) to acid (4.7) pH, with high content of organic matter (> 7.8%) and low levels of exchangeable K⁺ (<6 cmol(+)-g(-1)). Natural populations of Lupinus showed a great morphological variability result of diversity of species in this genus present in the study area. Four species were identified based on their morphological characteristics and altitudinal range: L. campestris, located at altitudes of 2600 to 3052 m, along edges of corn and faba bean crops or natural vegetation areas in the presence of Juniperus deppeana, various species of Pinus and Abies religiosa; L. exaltatus from 2778 to 2865 m in forests of P. montezumae; L. hintonii at 3080 m associated with Abies religiosa; and L. montanus, at altitudes above 3000 m associated with P. hartwegii, P. montezumae, P.

rudis and Abies religiosa. High concentration of seed protein was observed within and between species. Among species, the average protein concentration ranged from 328 to 387 g kg(-1) of dry matter (DM). Between the species, the concentration ranged from 317 g kg(-1) (a population of L. exaltatus) to 481 g kg(-1) DM (a population of L. campestris).

- 12. Carrillo-González, Rogelio; González- Chávez, Ma. del Carmen A.** 2012. [Tolerance to and Accumulation of Cadmium by the Mycelium of the Fungi Scleroderma citrinum and Pisolithus tinctorius](#). *Biological Trace Element Research*, 146 (3):388-395; Jun 2012. <http://dx.doi.org/10.1007/s12011-011-9267-7>. [Documento PDF](#)

Abstract: The behavior of ectomycorrhizal (ECM) fungi on exposure to cadmium dependent upon isolation remains a poorly understood phenomenon. The in vitro growth, tolerance, and accumulation of Cd were studied in three strains of ECM fungi exposed to six Cd concentrations (0-10 mg L⁻¹). The fungi studied were a strain of *Scleroderma citrinum* Persoon (Sc) isolated from a tailings heap containing 5 mg kg(-1) available Cd, and two strains of *Pisolithus tinctorius* (Pers.) Coker and Couch from unpolluted sites (Pt1 and Pt2), both common ECM fungi used for remediation. The growth kinetic (36 days) of Sc was not affected by Cd concentration. By contrast, the ED₅₀ in Pt1 and Pt2 occurred at 4.8 and 6.9 mg L⁻¹ of Cd, respectively. The biomass of the three fungi exposed to the highest Cd concentration (10 mg L⁻¹) was significantly different. Sc presented the highest biomass, while this was strongly reduced for Pt1 and Pt2. The tolerance index for Sc ranged from 78% to 95% at all Cd concentrations tested, while for Pt1 it was 49% and 31%, and for Pt2 it was 62% and 35% at 5 and 10 mg of Cd L⁻¹, respectively. The mycelium of both Pt strains accumulated more Cd than the Sc mycelium. At the highest Cd concentration, Pt1 and Pt2 accumulated 1.9 and 1.7 times more Cd than Sc. This study suggests that regardless of the differences in tolerance to Cd by the three ECM fungi, they could have biotechnological applications for soil remediation. However, Sc has greater possibilities of being used successfully when high concentrations of Cd prevail in the environment.

- 13. Crosby, M.; Mendoza, G. D.; Bonola, I.; Plata, F. X.; Sandoval, H.; Melgoza, L. M.** 2012. [Slow-release amylase increases in vitro ruminal digestion of maize and sorghum grain](#). *South African Journal Of Animal Science*, 42 (1):33-37; DOI: <http://dx.doi.org/10.4314/sajas.v42i1.4>. [Documento PDF](#).

Abstract: The objective of this study was to evaluate the effects of slow-release alpha-amylase in ruminal in vitro digestion of maize and sorghum grains. Digestibility was

measured using an in vitro procedure with 40 mL of buffer and 10 mL of ruminal fluid, flushed with CO₂ and incubated at 39 degrees C. The digestibility of sorghum and maize grain was measured after 6 and 12 hours of fermentation with or without exogenous alpha-amylase in powder form or dispersed in a matrix system for slow release by a diffusional mechanism. Tablets were used as the drug release matrix system, and were formulated with barium sulphate and ethylcellulose as the core of the final tablet. Treatments consisted of incubation of sorghum or maize grains with four doses of enzyme, using alpha-amylase in powder or in the press-coated tablet (16 treatments). The results showed that with a higher dose of exogenous enzyme, the digestibility of the grains was improved. Sorghum and maize digestion with tablets were improved compared with alpha-amylase in powder form. Releasing alpha-amylase from matrix tablets represents a potential technology to improve grain digestion in ruminants.

- 14. Ávila, Catarino; Luis Guardiola, José; Nebauer, Sergio G.** 2012. [Response of the photosynthetic apparatus to a flowering-inductive period by water stress in Citrus. Trees structure and function, 26 \(3\):833-840;](#) jun 2012; DOI: <http://dx.doi.org/10.1007/s00468-011-0657-4>; [Documento en PDF.](#)

Abstract: The photosynthetic responses to a flowering-inductive water-stress period and recovery were studied and compared in two Citrus species. Under greenhouse conditions, Fino lemon and Owari satsuma trees were subjected to moderate (-2 MPa at predawn) and severe (-3 MPa) water stress levels and were re-watered after 60 days. Vegetative growth was inhibited during the stress assays, and strong defoliation levels were reported, especially in Fino lemon. In both species, bud sprouting was induced after re-watering. Flowers and vegetative shoots developed in Owari satsuma after a drought period, and the development was independent of the stress level. In Fino lemon, vegetative shoots and flowers were primarily formed after moderate and severe stress, respectively. The photosynthetic rate and stomatal conductance were reduced by water stress, and a marked increase in water-use efficiency at the moderate water deficit level was observed. Nevertheless, the photosynthetic apparatus was not damaged, since the maximum quantum yield, photosynthetic pigment concentrations and Rubisco level and activity did not change. Furthermore, the measured malonyldialdehyde (MDA) and peroxidase activity indicated that oxidative stress was not specifically triggered by water stress in our study. Therefore, the gas exchange, fluorescence and biochemical parameters suggested that diffusional limitations to photosynthesis predominated in both of the studied Citrus species, and explained the rapid recovery of the photosynthetic parameters after rehydration. The net CO₂ fixation rate and stomatal conductance were recovered within

24 h in Fino lemon, whereas 3 days were required in Owari satsuma. This suggests the presence of some metabolic limitations in the latter species. Furthermore, the sensibility of the defoliation rates, the accumulation of proline and the stomatal behaviour in response to water stress indicated a higher drought tolerance of Fino lemon, according to its better acclimation to hot climates.

- 15. Lugo-García, Antonio G.; Delia Ortega-Arenas, L.; Aragón-García, Agustín; González-Hernández, Héctor;** 2012. White grubs species (Coleoptera: scarabaeoidea) associated to corn in a home, Sinaloa, Mexico. *Agrociencia*, 46 (3):307-320; apr-may 2012; [Documento en PDF](#)

Resumen: En algunas regiones del estado de Sinaloa, México, se considera que las larvas de coleópteros Melolonthidae conocidas como gallina ciega son una de las principales plagas rizófagas del maíz (*Zea mays*). Por ello, el objetivo del presente estudio fue conocer las especies de gallina ciega asociadas al cultivo de maíz en el Valle del Carrizo, Sinaloa. Se realizaron muestreos de suelo de septiembre de 2008 a marzo de 2009 y se recolectaron adultos de julio a octubre de 2008, dos veces por semana, con una trampa de luz fluorescente negra tipo embudo, instalada en el centro de la parcela de cultivo de maíz. En suelo se identificaron *Cyclocephala sinaloae* y *Phyllophaga* sp., y la primera fue la especie dominante (98.94 %), con la mayor población de larvas presentes en octubre. En la trampa de luz se recolectaron 61 198 ejemplares pertenecientes a ocho especies de Scarabaeidae. *Cyclocephala sinaloae* fue la más abundante (71.67 %), seguida de *Oxygrylius ruginasus* (26.89 %), *Phyllophaga opaca* (1.15 %) y *Ph. cristagalli* (0.2 %). La abundancia de estas especies fue mayor en julio (48.55 %) lo que coincidió con el máximo registro de lluvias. Además se registró por primera vez que los adultos de *C. sinaloae* se alimentan de frutos de guayaba (*Psidium guajava* L.) durante la mañana.

Abstract: In some regions of the state of Sinaloa, Mexico, it is considered that the larvae of Melolonthidae coleoptera, known as white grub, are one of the principal rhizophagous pests of corn (*Zea mays*). The objective of the present study was to know the white grub species associated to the corn crop in the Valle del Carrizo, Sinaloa. Soil samplings were made from September of 2008 to March of 2009, and adults were collected from July to October of 2008, twice a week, with a funnel type black fluorescent light trap, installed in the center of the corn plot. In soil, *Cyclocephala sinaloae* and *Phyllophaga* sp. were identified, the former being the dominant species (98.94 %), with the largest larvae population in October. The light trap collected 61 198 specimens pertaining to eight species of Scarabaeidae. *Cyclocephala sinaloae* was the most abundant (71.67 %), followed by *Oxygrylius ruginasus* (26.89 %), *Phyllophaga opaca* (1.15 %) and *Ph. cristagalli* (0.2 %). The abundance of these species was higher in July (48.55 %), which coincided with

the maximum rainfall registered. In addition, for the first time it was registered that the adults of *C. sinaloae* feed on guava fruits (*Psidium guajava* L.) during the morning.

- 16. López-Collado, José; Reyna-Robles, Roberto; Pena-Lomelí, Aureliano; Manuel-Pinto, Víctor; Garza-García, Ramón** 2012. Spatial distribution of *Bactericera cockerelli* (Sulc) (Hemiptera: triozidae) on green tomato (*Physalis ixocarpa* (Brot.)) Crespo-Herrera, Leonardo A.; Vera-Graziano, Jorge; Bravo-Mojica, Hiram. *Agrociencia*, 46 (3):289-298; apr-may 2012; [Documento en PDF](#).

Resumen: El tomate de cáscara (*Physalis ixocarpa* Brot.) es hospedero de varias plagas, entre ellas *Bactericera cockerelli* (Sulc) que causa hasta 45 % de pérdidas en rendimiento debido a la transmisión de un fitoplasma del grupo I. Sin embargo, no hay estimadores de los parámetros de los programas de muestreo para este insecto, los cuales son fundamentales para determinar tamaños de muestra de poblaciones. Por tanto, se estudió la distribución espacial de *Bactericera cockerelli* en tres parcelas experimentales en Texcoco, Estado de México, con base en los estimadores de la varianza/media (S^2/\bar{x}) y la Ley de la Potencia de Taylor (LPT). Los datos fueron analizados con el programa SUPRA. Los huevos y ninfas presentaron una disposición agregada, S^2/\bar{x} de 5 a 23.5 y 1.5 a 6.7; mientras que los adultos, altamente móviles en el campo, presentaron una distribución aleatoria (S^2/\bar{x} entre 0.83 y 20.60). El método LPT concuerda con los patrones de distribución para los tres estados biológicos de la plaga.

Abstract: Green tomato (*Physalis ixocarpa* Brot.) is host to several pests, including *Bactericera cockerelli* (Sulc) that causes up to 45 % of yield losses due to transmission of a phytoplasma of group I. However, there are no estimates of the parameters of the sampling programs for this insect, which are crucial for determining sample size of populations. Therefore, we studied the spatial distribution of *Bactericera cockerelli* in three experimental plots in Texcoco, Estado de Mexico, based on the estimates of the variance/mean (S^2/\bar{x} over tilde) and Taylor's Power Law (TPL). Data were analyzed with the SUPRA program. The eggs and nymphs showed an aggregated arrangement (S^2/\bar{x} over tilde) of 5 to 23.5 and 1.5 to 6.7, while adults that are highly mobile in the field showed a random distribution (S^2/\bar{x} over tilde between 0.83 and 20.60). The TPL method agrees with the distribution patterns for the three biological stages of the pest.

- 17. León -García, Imelda; Rodríguez-Leyva, Esteban; Ortega-Arenas, Laura D.; Solís-Aguilar, Juan F.** 2012. Insecticide susceptibility of *Spodoptera frugiperda* (J. E. Smith) (lepidoptera: noctuidae) associated with turfgrass at Quintana Roo, Mexico *Agrociencia*, 46 (3):279-287; apr-may 2012; [Documento en PDF](#)

Resumen: El gusano cogollero *Spodoptera frugiperda* es una de las principales plagas que ataca al maíz (*Zea mays L.*) y céspedes (*Paspalum vaginatum* Swartz, *Cynodon dactylon* (L.) Person) en el sur de EE.UU., México, Centro y Sudamérica. Este gusano causa daños al follaje y ocasionalmente pérdida de secciones de la carpeta, y su control se realiza mediante insecticidas. El objetivo de esta investigación fue determinar la susceptibilidad de *S. frugiperda* a insecticidas de uso común en campos de golf de Quintana Roo, México, para generar las bases de un programa de manejo. Se evaluó la susceptibilidad a los insecticidas lambdacialotrina, deltametrina, cifultrina y metomil mediante aplicación tópica en el protórax de larvas de tercer ínstar. La mortalidad se registró 24 h después de aplicar los insecticidas y se determinó la línea de respuesta log dosis probit y los valores de DL50 y DL95. La población de *S. frugiperda* del campo Iberostar Playa Paraíso Golf Club (20° 45' 41" N, 86° 57' 59" O; 3 m altitud) en la Riviera Maya, Quintana Roo, mostró resistencia alta a los insecticidas deltametrina (1002.2x), lambdacialotrina (204.5x), cifultrina (162.7x) y metomil (183.0x).

Abstract: The fall armyworm *Spodoptera frugiperda* is one of the major pests that attacks corn (*Zea mays L.*) and turfgrass (*Paspalum vaginatum* Swartz, *Cynodon dactylon* (L.) Person) in the Southern USA, Mexico, Central and South America. This pest causes damage to foliage and sometimes loss of sections of the golf carpet, and it is controlled by insecticides. The objective of this research was to determine susceptibility of *S. frugiperda* to insecticides commonly used in golf courses in Quintana Roo, Mexico, to generate bases for a management program. Susceptibility to lambda-cyhalothrin, deltamethrin, cyfluthrin and methomyl was evaluated by topical application on the prothorax of third instar larvae. Mortality was recorded 24 h after applying the insecticides and the log dose response line probit and the LD50 and LD95 values were determined. *Spodoptera frugiperda* population of the course Iberostar Playa Paraiso Golf Club (20 degrees 45' 41 " N, 86 degrees 57' 59 " W; 3 m altitude) at the Riviera Maya, Quintana Roo, showed high resistance to insecticides deltamethrin (1102.2x), lambda-cyhalothrin (204.5x), cyfluthrin (162.7x) and methomyl (183.0x).

18. San Martín-Hernández, Cesar; Ordaz-Chaparro, Víctor M.; Sánchez-García, Prometeo; Beryl Colinas-León, María T.; Borges-Gómez, Lizette. 2012. Tomato (*Solanum lycopersicum* L.) quality produced in hydroponics with different particle sizes of tezontle. *Agrociencia*, 46 (3):243-254; apr-may 2012; [Documento en PDF](#).

Resumen: La calidad del fruto de tomate (*Solanum lycopersicum* L.) es afectada por variaciones genotípicas, condiciones climáticas, y el sistema de producción empleado. El objetivo de este estudio fue evaluar la calidad física y química del fruto de tomate producido en hidroponía y tezontle como sustrato en cuatro tamaños de partícula: 3-5, 5-10, 10-20 y 20-30 mm de diámetro (tratamientos T1, T2, T3 y T4); mezclado con polvo y

fibra de coco (PFC) en proporción 3:1. Se usaron contenedores de plástico con 24 L de sustrato en los cuales se trasplantaron tres plántulas de tomate. Durante el ciclo de cultivo de octubre de 2009 a abril de 2010, las plantas se regaron diariamente por goteo. La conductividad eléctrica (CE) y pH de la solución nutritiva en contacto con la raíz se monitoreó mensualmente. El diseño experimental fue completamente al azar, con tres contenedores por unidad experimental y cinco repeticiones por tratamiento. Se usaron frutos maduros en los análisis de: sólidos solubles totales (SST), acidez titulable (AT), relación SST/AT, CE, pH, porcentaje de jugo, firmeza y color (luminosidad, hue y croma). Se realizó un análisis de varianza y se usó la prueba de Tukey DHS ($p \leq 0.05$) para comparar las medias de los tratamientos. Los resultados mostraron que el tamaño de partícula de tezonle mezclado con PFC (3:1) no afectó ($p > 0.05$) los SST, AT, relación SST/AT, CE, y croma del fruto, pero sí hubo diferencias ($p \leq 0.05$) en el pH y porcentaje de jugo, la luminosidad, hue y la firmeza del fruto. Por el suministro de agua, fácilmente disponible, se generó salinidad y alcalinidad en el sustrato, los cuales además de la temperatura, influyeron en los atributos de calidad fisicoquímica del fruto de tomate.

Abstract: The quality of the tomato fruit (*Solanum lycopersicum* L.) is affected by genotypic variation, climatic conditions, and the production system used. The objective of this study was to evaluate the physical and chemical quality of the tomato fruit produced in hydroponics and tezonle (cooled molten rock in volcanic vent) used as substrate in four particle sizes: 3-5, 5-10, 10-20 and 20-30 mm in diameter (treatments T1, T2, T3 and T4); mixed with coconut dust and fiber (CDF) in a 3:1 proportion. Plastic containers were used with 24 L of substrate in which three tomato seedlings were transplanted. During the growing season from October 2009 to April 2010, the plants were drip-irrigated daily. Electrical conductivity (EC) and pH of the nutrient solution in contact with the root were monitored monthly. The experimental design was completely randomized, with three containers per experimental plot and five replicates per treatment. Mature fruits were used in the analysis of: total soluble solids (TSS), titratable acidity (TA), TSS/TA ratio, EC, pH, juice percentage, firmness and color (lightness, hue and chroma). We conducted an analysis of variance and applied the HSD Tukey test ($p \leq 0.05$) to compare the treatment means. The results showed that the particle size of tezonle mixed with CDF (3:1) did not affect ($p > 0.05$) SST, AT, SST/AT ratio, EC, and chroma of the fruit, but there were differences ($p \leq 0.05$) in the pH and the juice percentage, brightness, hue and the fruit firmness. By water supply, easily available, salinity and alkalinity were generated in the substrate, which in addition to temperature influenced the physicochemical quality attributes of the tomato fruit.

- 19. Soto-Hernández, Marcos; Choi, Young Hae; Verpoorte, Robert.** 2012. Phenolic acids in *catharanthus roseus* analyzed by a targeted approach of metabolomics [sesión Oral]. *Pharmaceutical Biology*, 50 (5):660-660; may 2012; [Documento en PDF](#).

Phenolic acids containing leaves of intact plants from *Catharanthus roseus* responded to treatment with an elicitor from the oomicete *Pythium aphanidermatum* by shifting their phenol metabolism towards wall-bound phenylpropanoids derivatives: ferulic and p-coumaric acids. The regulation of these metabolic changes, the integration of the phenylpropanoic acids and the signal transduction after elicitation were studied.

- 20. Villarreal-Ruiz, Luis; Neri-Luna, Cecilia; Anderson, Ian C.; Alexander, Ian J** 2012. [In vitro interactions between ectomycorrhizal fungi and ericaceou plants](#). *Symbiosis*, 56 (2):67-75; may 2012; DOI: <http://dx.doi.org/10.1007/s13199-012-0161-7>. [Documento en PDF](#).

Abstract: In view of the close association between ericaceous shrubs and ectomycorrhizal trees in forest ecosystems, the interaction between ectomycorrhizal basidiomycetes and the hair roots of four typical ericoid mycorrhizal hosts was investigated in vitro. Seedlings of *Vaccinium myrtillus*, *V. vitis-idaea*, *V. macrocarpon* and *Calluna vulgaris* were inoculated with each of four ectomycorrhizal basidiomycetes from different phylogenetic groups (*Laccaria bicolor*, *Lactarius musteus*, *Suillus variegatus* and *Tomentellopsis submollis*) in a low carbon and nutrient agar-cellophane culture system. Two ericoid mycorrhizal Helotiales ascomycetes (*Meliniomyces bicolor* in the *Rhizoscyphus ericae* aggregate and a mycobiont out of the *Rhizoscyphus ericae* aggregate) were included for comparison. Interactions between fungi and hair roots ranged from neutral to surface attachment, and the formation of intracellular hyphal coils. Root and shoot responses to inoculation were different between the host/fungus combinations. The ectomycorrhizal fungus *L. bicolor* formed extensive intracellular colonization, spreading cell-to-cell with multiple hyphal entry points and intracellular hyphal coils with single entry points in *C. vulgaris* and *V. macrocarpon* epidermal cells respectively, however, no significant effects on plant growth were detected. *Meliniomyces bicolor* formed intracellular hyphal coils in the epidermal cells of *V. myrtillus* and *V. macrocarpon* but not the other host spp. The *M. bicolor* isolate stimulate *V. myrtillus* root length about 2.5 times. Interestingly, although the unknown ascomycete strain out of the *Rhizoscyphus ericae* aggregate formed intracellular hyphal coils in epidermal cells of all host plants, it suppressed the growth of *C. vulgaris*, *V. myrtillus*, and *V. vitis-idaea* but not to *V. macrocarpon*. Further and more detailed experimentation under more ecological realistic conditions for a longer period of time is needed.

- 21. Rodríguez-Leyva, Esteban; Refugio Lomelí-Flores, J.; Valdez-Carrasco, Jorge M.; Jones, Robert W.; Stansly, Philip A** 2012. New Records of Species and Locations of Parasitoids of the Pepper Weevil in Mexico. *Southwestern Entomologist*, 37 (1):73-83; mar 2012; DOI: <http://dx.doi.org/10.3958/059.037.0109>; Documento en PDF

Abstract: The pepper weevil, *Anthonomus eugenii* Cano (Coleoptera: Curculionidae), is a key pest of cultivated peppers (*Capsicum* spp.) in the southern United States, Mexico, Central America, and on some islands of the Caribbean. Control of the pest is difficult and dependant on insecticide, with no effective biological control program yet developed. New species and records of parasitoids collected from various localities within the probable regions of origin of the pepper weevil in Mexico are listed. In total, 102 parasitoid specimens of six genera were collected. Of these, *Eupelmus cushmani* (Crawford) and *Balyscapus hunted* (Crawford) were recorded for the first time as primary parasitoids of the pepper weevil. A key to identify the genera of hymenopteran parasitoids attacking pepper weevil is also presented.

- 22. Terán-Vargas, Antonio P.; Azuara -Domínguez, Ausencio; Vega-Aquino, Paulina; Zambrano-Gutiérrez, Jorge; Blanco-Montero, Carlos.** 2012. Biological Effectivity of Insecticides to Control the Agave Weevil, *Scyphophorus acupunctatus* Gyllenhal (Coleoptera: Curculionidae), in Mexico. *Southwestern Entomologist*, 37 (1):47-53; Mar 2012; doi: <http://dx.doi.org/10.3958/059.037.0106>; Documento en PDF.

Resumen: *Scyphophorus acupunctatus* Gyllenhal causes economic losses to plants of the Agavaceae and Dracaenaceae families and, recently, in commercial plantations of nardo, *Polianthes tuberosa* L. Synthetic insecticides are the main controls, but these pesticides may not be effective, because larvae and adults are frequently found feeding in the interior of the "ball" of agave plants, far from the reach of the insecticide. The efficacy of insecticides to control this pest is unknown. In this study, we evaluated the effectiveness of synthetic insecticides of different toxicological groups to control *S. acupunctatus*. The experimental design was completely randomized. The number of dead adults was analyzed using a nonparametric variance of Kruskal Wallis. The percentages of biological effectiveness of insecticides in each bioassay were obtained by using the Abbott formula. Malathion, endosulfan, methomyl, and fipronil showed high biological efficacy. Conversely, cypermethrin, lambda-cyhalothrin, deltamethrin, and beta-cifluthrin, of constant use in Tamaulipas to control *S. acupunctatus*, produced a minor effect similar to the nontreated check. However, although some insecticides were effective, it is recommended they be rotated with insecticides with different modes of action or in

conjunction with other controls such as food attractants, entomopathogenic fungi and nematodes, and aggregation pheromones, to obtain better control of *S. acupunctatus* and prevent development of resistance to insecticide.

- 23. Lázaro-Dzul, Martha O.; Velázquez-Mendoza, Juan; Vargas-Hernández, José J.; Gómez-Guerrero, Armando; Álvarez -Sánchez, María E.; López -López, Miguel A. 2012.** Fertilization with nitrogen, phosphorus and potassium in *Pinus patula* Schl. et Cham samplings. *Revista Chapingo, Serie Ciencias Forestales y del Ambiente*, 18 (1):33-42; jan-apr 2012; DOI: <http://dx.doi.org/10.5154/r.rchscfa.2011.01.001>; [Documento en PDF](#)

Resumen: Las masas forestales enfrentan el problema de productividad, la cual demanda que se incremente en cantidad y calidad. El crecimiento forestal depende de varios factores, entre ellos, el edáfico, que actúa sobre el árbol mediante el agua y los elementos minerales. Se incrementa la productividad forestal al mejorar la disponibilidad nutrimental mediante la fertilización. Consecuentemente, la finalidad de este trabajo fue estudiar la fertilización con nitrógeno (0, 138,185), fósforo (0, 15, 21) y potasio (0, 123,164) kg•ha⁻¹ con relación al crecimiento de follaje nuevo, mediante un experimento factorial 33 en una plantación de *Pinus patula* Schl. et Cham. de 10 años de edad, en Aquixtla, Puebla, durante 2009-2010. La tasa relativa de crecimiento instantáneo (TCRI) en volumen de follaje nuevo fue mejor (0.0255 mL•mL⁻¹•día⁻¹) con la dosis 185-0-0 kg•ha⁻¹ de NPK, y la TCRI de peso seco fue mejor (0.0254 y 0.0249 g•g⁻¹•día⁻¹, respectivamente) con las dosis 138-0-123 y 138-0-0. Se determinó deficiencia de nitrógeno, que se atribuyó a la acidez edáfica y a la lenta mineralización de la materia orgánica. La dosis recomendada para las condiciones edáficas y climáticas del sitio experimental fue 185-0-0 kg•ha⁻¹ NPK para volumen de follaje nuevo y 138-0-0 kg•ha⁻¹ de NPK para peso seco.

Abstract: The forests today face the problem of productivity; it is demanded to increase in quantity and quality. Forest growth depends on several factors, including soil, which acts on the tree by the water and mineral elements. Forest productivity is increased by improving nutrient availability through fertilization. Consequently, this research is aimed to study the nitrogen fertilization (0, 138, 185), phosphorus (0, 15, 21), and potassium (0, 123, 164) kg.ha(-1) compared to the growth of new foliage, using a 3(3) factorial experiment in a *Pinus patula* Schl. et Cham plantation of 10 year old trees, in Aquixtla, Puebla, during 2009-2010. The instantaneous relative growth rate (TCRI, by its acronym in Spanish) in terms of new growth was better (0.0255 mL.mL(-1).day(-1)) with a 185-0-0 kg.ha(-1) NPK dose; and TCRI dry weight was better (0.0254 and 0.0249 g.g(-1).day(-1),

respectively) with a 138-0-0 and 138-0-123 dose. Nitrogen deficiency was determined, which was attributed to soil acidity and the slow mineralization of organic matter. The recommended dose for soil and climatic conditions of the experimental site was 185-0-0 kg.ha(-1) for volume of new foliage and 138-0-0 NPK kg.ha(-1) for dry weight.

24. Navarro Garza, Hermilio; Santiago Santiago, Alfredo; Musalem Santiago, Miguel Ángel; Vibrans Lindemann, Heike; Pérez Olvera, Ma. Antonia 2012. Diversity of useful species and agroforestry systems *Revista Chapingo Serie Ciencias Forestales y del Ambiente*, 18 (1):73-89; <http://dx.doi.org/10.5154/r.rchscfa.2010.11.124>; jan-apr 2012; [Documento en PDF](#).

Resumen: Biodiversity management and use sustain multifunctional agro-ecosystem services, such as: food supply, fodder, firewood, timber, fuel, fiber, and aquifer recharge, among others. The loss of biodiversity and increased risks of its deterioration, frequently inherent to several human activities, raise the need to develop institutional and social capacities for their restoration and conservation. The objective of this work was to identify and describe the diversity of trees and bushes, their uses and types of agroforestry systems. It is important to know the multiplicity of uses, as a synthetic expression of functional logic that makes agroforestry land systems viable. The study's descriptive methodology was based on participatory workshops designed to know the diversity of resources and uses. The subsequent steps involved: selection of families, transects, interviews, records, and collecting and classifying specimens. In total, 81 species and 34 families were identified. Diversity is amplified by the multifunctionality of uses for 55.6 % of the species: 7.4 % with 5 types of uses; 11.1 %, with 4 types; 14.8 % with 3 types; and 22.2 %, 2 types. Types of uses: firewood, 41 species; medicinal 30 species, tool-making 29, timber, 25; feed purpose, 23; forage species, 20, and 6, hedgerows. Some 91.7 % of households use agrosilvicultural systems and 41.7 % silvopastoral ones, according to various socio-economic purposes and use combinations.

25. Suárez, Alfonso; Williams-Linera, Guadalupe; Trejo, Carlos; Ignacio Valdez-Hernández, Juan; Manuel Cetina-Alcalá, Víctor; Vibrans, Heike. 2012. [Local knowledge helps select species for forest restoration in a tropical dry forest of central Veracruz, Mexico. Agroforestry systems](#), 85 (1):35-55; may 2012. <http://dx.doi.org/10.1007/s10457-011-9437-9>; [Documento en PDF](#).

Abstract: Species for restoration forestry on degraded lands in the tropics are often restricted to a few well-known exotic timber species. This selection frequently leads to failed projects, as local people expect trees to cover a number of uses, not only timber.

We studied local knowledge of the usefulness, scarcity and importance for wildlife of native tree species in central Veracruz, Mexico, a region with mainly secondary vegetation and remnants of tropical dry forest. Data were obtained from several workshops, in depth interviews of 40 key informants, field walks with informants, and botanical collections. Analysis included indices for cultural importance, scarcity and wildlife relevance. We documented 76 species in one or more of the categories, from primary, secondary, agroforestry and riparian habitats. Fabaceae was the most important family. All of the species were useful for humans, mainly for rural construction, food, fence posts and fuel. Two-thirds of the species were considered scarce though they were not necessarily rare-some were highly useful, overexploited species with populations insufficient for demand; this category included five of the ten most important species culturally. Also, two-thirds of the tree taxa were considered important for wildlife, especially species of Moraceae. The study shows that the local population is highly aware of the varying functions of trees in the landscape. However, few of the important species are available from regional nurseries. We propose a number of species for restoration forestry, agroforestry systems and enrichment plantings that would be valued by landowners.

- 26. Almendra-Arao, Félix; Sotres-Ramos, David.** 2012. [Some Properties of Non Inferiority Tests for Two Independent Probabilities](#). *Communications in Statistics-Theory and Methods*, 41 (9):1636-1646; 2012; [Documento en PDF](#); <http://dx.doi.org/10.1080/03610926.2010.547645>

Resumen: For exact tests of non inferiority for two independent binomial probabilities, in 1999 Rohmel and Mansmann proved that if a rejection region from an exact test fulfills the Barnard convexity condition, then the corresponding significance level can be computed as the maximum in a subset of the null space boundary. This is particularly important because computing time of significance levels is greatly reduced. Later, in 2000, Frick extended the Rohmel and Mansmann theorem to more general critical regions also corresponding to exact tests. In this article, we generalize Frick's theorem to both exact and asymptotic tests. Like the two theorems mentioned, in this article the resulting theorem also includes, as particular cases, non inferiority hypotheses for parameters such as difference between proportions, proportions ratio, and odds ratio for two independent binomial probabilities. Moreover, proof of this result follows a different line of reasoning than that followed by Frick and is much simpler. In addition, some applications of the main result are provided.

- 27. Arnold, Barry C.; Villaseñor, José A.** 2012. [Generalized order statistic processes and Pfeifer records](#). *Statistics*, 46 (3):373-385; 2012; doi: <http://dx.doi.org/10.1080/02331888.2010.535901>; [Documento en PDE](#).

Resumen: We introduce a uniform generalized order statistic process. It is a simple Markov process whose initial segment can be identified with a set of uniform generalized order statistics. A standard marginal transformation leads to a generalized order statistic process related to non-uniform generalized order statistics. It is then demonstrated that the nth variable in such a process has the same distribution as an nth Pfeifer record value. This process representation of Pfeifer records facilitates discussion of the possible limit laws for Pfeifer records and, in some cases, of sums thereof. Because of the close relationship between Pfeifer records and generalized order statistics, the results shed some light on the problem of determining the nature of the possible limiting distributions of the largest generalized order statistic.

28. Cisneros-López, Ma. Eugenia; Mendoza-Onofre, Leopoldo E.; González - Hernández, Víctor E.; Montes-García, Noé. 2012. [Male to female row ratio and fungicide application during panicle development to control sorghum ergot in the Mexican Highlands.](#) *Australasian Plant Pathology*, 41 (4):389-396; 2012; <http://dx.doi.org/10.1007/s13313-012-0138-2>; [Documento en PDF.](#)

Resumen: The effect of male to female row ratios and fungicide application at several panicle development stages to control sorghum ergot, under field conditions and natural infection was studied at Texcoco, State of Mexico. A pair of isogenic sorghum lines (A9/B9) was sown in May 3 and June 10, 2005; and in April 3, 2006. Two male to female row ratios (M:F = 2:4, 2:6) were used in 2005, and 2:8 and 2:12 in 2006. Propiconazole (TiltA (R)) was sprayed on the female rows at a rate of 250 g a.i. ha(-1) from panicle emergence to the end of flowering, with one, two and three applications. Pollen viability was quantified in the B9-line. Seed yield per hectare, seed production per panicle, disease incidence and severity, number of sclerotia per panicle, seeds contaminated by honeydew per panicle, and seed germination were registered in the A9-line. Pollen viability varied from 76 to 89 % among sowing dates despite the fact that at microsporogenesis, mean minimum temperature was below 9.2 A degrees C. Fungicide application accounted for 49 % of the observed variance. The greatest seed yield (2,358 kg ha(-1)) was obtained in 2006, which surpassed by 195 kg ha(-1) the mean value of the dates sown in 2005. Disease incidence and severity were significantly greater in the 2006 trial than at both planting dates in 2005. In contrast, sowing dates showed small differences in seed production per panicle and seed germination. Fungicide treatment with three applications produced a better ergot control than treatments with one or two applications.

- 29. Flores Popoca, Erika Odilia; Miranda García, Maximino; Romero Figueroa, Socorro; Mendoza Medellín, Aurelio; Sandoval Trujillo, Horacio; Silva Rojas, Hilda Victoria; Ramírez Duran, Ninfa.** 2012. Pantoea agglomerans in Immunodeficient Patients with Different Respiratory Symptoms. *Scientific World Journal*, Article ID 156827, 8 p.; 2012. <http://dx.doi.org/10.1100/2012/156827>; [Documento en PDF](#); [Documento e-Pub](#).

Abstract: The aim of this paper was to determine in 32 patients from 4 different Mexican hospitals the frequency of opportunistic bacteria in the 2010 to 2011 time period. The patients were divided in 4 groups. Group 1 included 21 HIV positive patients with acute respiratory syndrome. Four HIV positive patients with tuberculosis symptoms were included in Group 2; two patients with tuberculosis symptoms and one asymptomatic person formed Group 3. Reference Group 4 included 4 patients from whom 4 strains of Mycobacterium spp. had been reported. The strains were isolated and identified by 16S rRNA gene amplification, API 20E and 50CH, biochemical test, and antibiotic sensitivity. The strains found were 10 Pantoea agglomerans, 6 Mycobacterium spp., 6 Pseudomonas spp. and 10 strains of normal floral species: Thermoactinomycetes bacterium (1), Enterococcus faecium (2), Bacillus licheniformis (1), Lactobacillus rhamnosus (2), Streptococcus oralis (2), Streptococcus anginosus (1), and Enterobacter hormaechei (1).

- 30. Fuentes, Mariela; Hidalgo, Claudia; Etchevers, Jorge; De León, Fernando; Guerrero, Armando; Dendooven, Luc; Verhulst, Nele; Govaerts, Bram.** 2012. Conservation agriculture, increased organic carbon in the top-soil macro-aggregates and reduced soil CO₂ emissions. *Plant and Soil*, 355 (1-2):183-197; Jun 2012; DOI: <http://dx.doi.org/10.1007/s11104-011-1092-4>; [Documento en PDF](#).

Abstract: Conservation agriculture, the combination of minimal soil movement (zero or reduced tillage), crop residue retention and crop rotation, might have the potential to increase soil organic C content and reduce emissions of CO₂. Three management factors were analyzed: (1) tillage (zero tillage (ZT) or conventional tillage (CT)), (2) crop rotation (wheat monoculture (W), maize monoculture (M) and maize-wheat rotation (R)), and (3) residue management (with (+r), or without (-r) crop residues). Samples were taken from the 0-5 and 5-10 cm soil layers and separated in micro-aggregates (< 0.25 mm), small macro-aggregates (0.25 to 1 mm) and large macro-aggregates (1 to 8 mm). The carbon content of each aggregate fraction was determined. Zero tillage combined with crop rotation and crop residues retention resulted in a higher proportion of macro-aggregates. In the 0-5 cm layer, plots with a crop rotation and monoculture of maize and wheat in

ZT+r had the greatest proportion of large stable macro-aggregates (40%) and highest mean weighted diameter (MWD) (1.7 mm). The plots with CT had the largest proportion of micro-aggregates (27%). In the 5-10 cm layer, plots with residue retention in both CT and ZT (maize 1 mm and wheat 1.5 mm) or with monoculture of wheat in plots under ZT without residues (1.4 mm) had the greatest MWD. The 0-10 cm soil layer had a greater proportion of small macroaggregates compared to large macro-aggregates and micro-aggregates. In the 0-10 cm layer of soil with residues retention and maize or wheat, the greatest C content was found in the small and large macro-aggregates. The small macro-aggregates contributed most C to the organic C of the sample. For soil cultivated with maize, the CT treatments had significantly higher CO₂ emissions than the ZT treatments. For soil cultivated with wheat, CTR-r had significantly higher CO₂ emissions than all other treatments. Reduction in soil disturbance combined with residue retention increased the C retained in the small and large macro-aggregates of the top soil due to greater aggregate stability and reduced the emissions of CO₂ compared with conventional tillage without residues retention and maize monoculture (a cultivation system normally used in the central highlands of Mexico).

- 31. Jones, Julia C.; Pérez-Sato, Juan-Antonio; Meyer, Axel.** 2012. A phylogeographic investigation of the hybrid origin of a species of swordtail fish from Mexico *Molecular Ecology*, 21 (11):2692-2712; Jun; 2012 DOI: <http://dx.doi.org/10.1111/j.1365-294X.2012.05571.x>; [Documento en PDF](#)

Abstract: Hybrid speciation may contribute significantly to generating biodiversity, but only a few well-documented examples exist so far that do not involve polyploidization as a mechanism. The swordtail fish, *Xiphophorus clemenciae*, shows common hallmarks of a hybrid origin and still overlaps in its current geographic distribution with its putative ancestral species (*Xiphophorus hellerii* and *Xiphophorus maculatus*). *Xiphophorus clemenciae* provides an ideal system for investigating the possible continued genetic interactions between a hybrid and its parental species. Here, we use microsatellite and mitochondrial markers to investigate the population structure of these species of swordtails and search for signs of recent hybridization. Individuals were sampled from 21 localities across the known range of *X. clemenciae* the Isthmus of Tehuantepec (IT) Mexico, and several environmental parameters that might represent barriers to dispersal were recorded. The hybridization event that gave rise to *X. clemenciae* appears to be rather ancient, and a single origin is likely. We find negligible evidence for ongoing hybridization and introgression between the putative ancestral species, because they now occupy distinct ecological niches, and a common haplotype is

shared by most populations of *X. clemenciae*. The population structure within these species shows an isolation-by-distance (IBD) pattern and genetic differentiation between most populations is significant and high. We infer that tectonic evolution in the Isthmus has greatly restricted gene flow between the southern and central IT populations of *X. clemenciae* and *X. hellerii* and provide preliminary information to aid in conservation management of this geographically restricted hybrid species, *X. clemenciae*.

- 32. Salazar-Rojas, Víctor Manuel; Edgar Herrera-Cabrera, B.; Delgado-Alvarado, Adriana; Soto-Hernández, Marcos; Castillo-González, Fernando; Cobos-Peralta, Mario.** 2012. [Chemotypical variation in Vanilla planifolia Jack. \(Orchidaceae\) from the Puebla-Veracruz Totonacapan region, Genetic Resources and Crop Evolution.](#) 59 (5):875-887; Jun 2012; DOI: <http://dx.doi.org/10.1007/s10722-011-9729-y>; [Documento en PDF.](#)

Abstract: One of the threats in the diversity loss of the primary gene pool of is the lack of information on existing level of polymorphism in cultivated germplasm, and the different expressions of this polymorphism. For this reason, it is proposed to study the chemical polymorphism of the four phytochemicals that define the vanilla aroma quality in fruits (vanillin, vanillic acid, -hydroxybenzaldehyde, -hydroxybenzoic acid) by HPLC analysis (High Performance Liquid Chromatography) of 25 collections of unknown genotype, grown in the region Totonacapan Puebla-Veracruz, Mexico. The results identified a selection process, domestication in fruit aroma of vanilla, during which increased the participation of vanillin and reduced the presence of three minor compounds (vanillic acid, -hydroxybenzaldehyde and -hydroxybenzoic acid) in the global aroma. We distinguished a total of six chemotypes of in the Totonacapan region, some chemotypes with wild aromatic characteristics (low participation of vanillin) related to the material less cultivated in the region and domesticated chemotypes with high participation of vanillin, for the most cultivated material. The results show that the diversification of the chemotypes of is not related to environmental variation. The data indicate that in the possible center of origin of vanilla, there is phytochemical polymorphism, which indirectly suggests the existence of genetic polymorphism, essential for the design of a breeding program for optimizing the use and conservation of diversity of the primary gene pool of Phylogenetic relationships and expression in response to low temperature of a catalase gene in banana (*Musa acuminata* cv. "Grand Nain") fruit.

- 33. Figueroa-Yáñez, Luis; Cano-Sosa, Julia; Castaño, Enrique; Arroyo-Herrera, Ana-Ly; Humberto Caamal-Velázquez, José; Sánchez-Teyer, Felipe; López- Gómez, Rodolfo; De Los Santos-Briones, Cesar; Rodríguez-Zapata, Luis.** [Phylogenetic relationships and expression in response to low temperature of a catalase gene in](#)

[banana \(*Musa acuminata* cv. "Grand Nain"\) fruit. Plant Cell Tissue and Organ Culture](#), 109 (3):429-438; JUN 2012. DOI: <http://dx.doi.org/10.1007/s11240-011-0107-4>; [Documento en PDF](#).

Abstract: For many plants, particularly those of tropical and subtropical origin, chilling injury occurs as a result of their exposure to low, but nonfreezing temperatures. Banana fruits are highly susceptible to chilling injury, but little is known about the role of genes that scavenge reactive oxygen species in fruits during chilling injury. In this study, a catalase gene, designated MaCat2, was isolated from *Musa acuminata* cv. Grand Nain fruits. The full-length cDNA sequence is 1,479 bp, and based on phylogenetic analysis, it is related to catalase type 2 genes from *Elaeis guineensis* and *Zantedeschia aethiopica*. Expression studies revealed that the MaCat2 gene was induced in severe stress of banana fruits. MaCat2 expression in banana peel increased in response to both low temperature and physical damage, but not so under heat stress or during normal fruit ripening. These findings suggest that MaCat2 is induced in banana peel by cold treatment and is regulated at transcriptional level, possibly playing a role in chilling injury response of banana fruit.

34. González-Flores, Eduardo; Alberto Tornero-Campante, Mario; Sandoval-Castro, Engelberto; Pérez- Magaña, Andrés; José Gordillo-Martínez, Alberto. 2012. [Bioavailability and fractionation of heavy metals in soils biosolids-amended agricultural origin of municipal](#). *Revista Internacional de Contaminación Ambiental*, 27 (4):291-301; Nov 2011; [Documento en PDF](#)

Resumen. Los biosólidos originados en el tratamiento de aguas residuales municipales se utilizan en suelos agrícolas como una fuente de nutrientes y de materia orgánica. Su contenido de metales pesados puede restringir su uso como enmienda agrícola por el riesgo potencial de introducirlos a las redes tróficas. La determinación de la concentración total de metales pesados en suelos enmendados con biosólidos es un criterio insuficiente para evaluar el riesgo. Los metales pesados se encuentran unidos a los diferentes componentes sólidos del suelo, los cuales de acuerdo con sus características fisicoquímicas presentan diferente disponibilidad. El objetivo de este trabajo fue determinar las concentraciones biodisponibles y la distribución de Cd, Cu, Ni, Pb y Zn en suelos enmendados con biosólidos en un periodo de seis años y establecer si existe relación entre la biodisponibilidad y la distribución de los metales con la antigüedad de su aplicación. Se utilizó un procedimiento de extracción química secuencial de cuatro etapas para determinar las concentraciones de los metales mencionados en cuatro fracciones químicas definidas operacionalmente y que representan la biodisponibilidad y la

distribución de los metales en los suelos enmendados. Las concentraciones totales se determinaron por medio de una digestión ácida en sistema abierto. La cuantificación de los metales pesados se realizó por ICP-AES. El Cd no fue detectado. La biodisponibilidad de Cu y Pb decrece con la antigüedad de aplicación y la del Zn aumenta. La antigüedad de aplicación de los biosólidos, influyó en la redistribución de Cu, Pb y Zn en las cuatro fracciones extraídas. La distribución del Ni es menos afectada por la antigüedad de aplicación de los biosólidos. Los metales estudiados están retenidos en un alto porcentaje en las fracciones más estables, oxidable y residual. La fracción biodisponible de cada metal muestra bajos porcentajes, lo cual indica escasa disponibilidad en el suelo y por lo tanto un bajo riesgo de que sean incorporados a las redes tróficas.

35. Vaca, Rocío; Lugo, Jorge; Martínez, Ricardo; Esteller, María V.; Zavaleta, Hilda.
2011. [Effects of sewage sludge and sewage sludge compost amendment on soil properties and Zea mays L. Plants \(heavy metals, quality and productivity\).](#)
Revista Internacional de Contaminación Ambiental, 27 (4):303-311; Nov. 2011;
[Documento en PDF.](#)

Resumen. El uso de residuos orgánicos en la agricultura puede mejorar la capacidad productiva del suelo así como sus características físicas y químicas. En el presente estudio se evaluó el efecto de la adición de lodo residual, composta de lodo residual y fertilizante inorgánico en el contenido de níquel, cobre y zinc del suelo y grano de maíz (*Zea mays L*), así como en la productividad de maíz y calidad nutrimental del grano. Se aplicó una dosis de 18 Mg ha⁻¹ de lodo residual o composta de lodo residual mientras que el fertilizante inorgánico aplicado fue fórmula 150-75-30 (N-P-K). Se observaron diferencias significativas en el contenido de materia orgánica, fósforo y zinc entre suelo-lodo residual, suelo-composta y suelo-fertilizante ($P \leq 0.05$). La adición de composta incrementó significativamente la concentración de cobre en el suelo ($P \leq 0.05$). La productividad de maíz obtenida en el suelo-composta y suelo-lodo residual fue más alta respecto al suelo-fertilizante. La calidad del grano, medida como porcentaje relativo de almidón, nitrógeno total, proteína y fibra detergente ácida y neutra, fue buena para el consumo humano. La aplicación de lodo residual o composta al suelo no incrementó la concentración de metales pesados en el grano de maíz.

Abstract: The use of organic wastes in agriculture can improve the soil's productive capacity, and physical and chemical characteristics. This study evaluated the effects of sewage sludge, sewage sludge compost and inorganic fertilizer applications on nickel, copper and zinc contents in soil and corn grains (*Zea mays L*); maize productivity, and grain nutritional quality. Sewage sludge and sewage sludge compost at 18 Mg ha(-1) and a mineral fertilizer (N-P-K) with a formulation of 150-75-30 were applied. Significant

differences were observed in organic matter, phosphorus and zinc content between sewage sludge-soil and compost-soil, and inorganic fertilizer-soil ($P \leq 0.05$). Copper concentration was significantly high in compost-soil ($P \leq 0.05$). Productivity in compost-soil and sewage sludge-soil mixtures was higher than in inorganic fertilizer-soil. Grain quality, measured by relative percentage of starch, total nitrogen, protein, acid detergent fiber and neutral detergent fiber were adequate for human consumption. Application of sewage sludge or compost did not increase heavy metal concentrations in grain with respect to inorganic fertilizer-soil.

II. DOCUMENTOS INDIZADOS EN SCOPUS

La base de datos SCOPUS indiza más documentos que el ISI Web de la Ciencia, aunque su cobertura temporal es más corta (1996 a la fecha). A continuación se muestran las referencias bibliográficas de los artículos cuya autoría recae en investigadores del Colegio de Postgrados. Solo se incluyen referencias de trabajos que no se encontraron en el ISI Web de la Ciencia, para no repetir la información. De esta forma la alerta bibliográfica es más completa que si solo se presentara lo indizado en el ISI.

En el Anexo 2, se muestran los títulos de las revistas, su categoría temática, el Scimago Journal Ranking (SJR), la posición de la revista en las categorías temáticas en cuartiles, y las citas a documentos en dos años (similar al factor de impacto en el JCR). Únicamente la revista Food Control se ubicó en el primer cuartil según su SJR. Las revistas en la que se publicaron artículos fueron clasificadas dentro de las categorías temáticas: Agronomy and Crop Science, Food Science, Insect Science, Earth and Planetary Sciences (miscellaneous), Water Science and Technology y Engineering. Dos documentos no estaban clasificados ni se encontró información debido a que no son revistas. Los países donde se editan las revistas son: Brasil, Países Bajos, Colombia (dos), China y México.

Referencias bibliográficas

1. **Morales, S.G., L. I. Trejo-Téllez, F. C. G. Merino, C. Caldana, D. Espinosa-Victoria, y B. E. H. Cabrera.** 2012. Growth, photosynthetic activity, and potassium and sodium concentration in rice plants under salt stress. *Acta Scientiarum - Agronomy* 34 (3): 317–324. DOI: <http://dx.doi.org/10.4025/actasciagron.v34i3.13687>. Documento en PDF.

Abstract: Salt stress affects crop growth and productivity. In this study, we determined the growth, yield of photosystem II (PSII), and K + and Na + concentration in root, stem, old leaves, and young leaves of two Mexican varieties of rice, Tres Ríos and Cotaxtla. In addition, the K +/Na + ratio in stem and root of both varieties was determined. The experiment was conducted in a growth chamber under controlled conditions, under a completely randomized distribution, with a 2 x 2 (Variety x Salinity) factorial arrangement and 12 replications. Plants were grown in a hydroponic solution for 15 days and then some of them were treated with 100 mM NaCl; control plants (without NaCl treatment) were grown in parallel. Salt stress caused 20 and 15% reductions in stem and root length, respectively, in the variety Tres Ríos, while in the variety Cotaxtla no significant differences were observed in these variables compared to the control. Dry matter weight decreased by 24% in the variety Tres Ríos. The quantum yield of PSII decreased by 30% the

third day of treatment application, in both varieties. Na + concentration was significantly ($p \leq 0.05$) higher in NaCl-treated plants. In the variety Tres Ríos, the yield of PSII was completely eradicated six days after treatment implementation, while the K + concentration in stem and older leaves also decreased and the lowest K +/ Na + ratio in stem was recorded, which could indicate that it is more susceptible to salinity than the variety Cotaxtla.

2. Saucedo-Reyes, D., J. A. Carrillo-Salazar, M. I. Reyes-Santamaría, y C. Saucedo-Veloz. 2012. [Effect pH and storage conditions on Listeria monocytogenes growth inoculated into sapote mamey \(Pouteria sapota \(Jacq\) H.E. Moore & Stearn\) pulp.](#) *Food Control* 28 (1): 110–117.
DOI: <http://dx.doi.org/10.1016/j.foodcont.2012.05.003>.

Abstract: Sapote mamey is a highly perishable tropical fruit when stored fresh, with a shelf life of 8-10 days at room temperature. Its agreeable taste and nutritional content are valuable characteristics which can be preserved as a pulp, normally at low temperatures, to maintain initial quality. However, this type of fresh product can potentially be a substrate for pathogenic microorganisms like *Listeria monocytogenes*, which can survive at refrigeration temperatures. The objectives of this investigation were to determine growth, survival conditions and then establish hurdles, of *L. monocytogenes* inoculated into mamey pulp under different levels of ascorbic acid (0, 250, and 500 mg/kg), pH (4.0, 4.5, and >5.0), and temperature (4 and 10 °C). The observed data were fitted to the Gompertz and Baranyi models. Growth rate (μ max) and lag time (λ) of *L. monocytogenes* were estimated using the modified Gompertz model given that it presented a better goodness of fit and accuracy in the modeling. Growth was favored at pH >5.0. μ max decreased, whereas λ increased, as the levels of ascorbic acid and temperature increased. A pH of 4.5 hinders but does not inhibit bacterial growth, while a pH of 4.0 inhibited growth of *L. monocytogenes* for 15 days at both storage temperatures.

3. Keli, A., G. Olmos, A. de Vega, y J.A. Guada. 2011. [Net transfer of nutrients to duodenum, and disappearance of n-alkanes in the reticulo-rumen and the hindgut of sheep fed grass/legume combinations,](#) 129:169–172. *EAAP Scientific Series*, Volume 129, Issue 1, 2011, Pages 169-172. ISSN: 00712477. [Documento en PDF.](#)

Tipo de fuente: Serie de libros.

Abstract: Four ewes were fed different proportions of lucerne (*Medicago sativa*) and Wimmera ryegrass (*Lolium rigidum*) (100:0, 33:67, 67:33 and 0:100), following a latin

square design, to study the influence of the diet on the net transfer of nutrients to the intestines, and on duodenal and faecal recoveries of n-alkanes. Duodenal flows of dry matter, organic matter, neutral detergent fibre, non-ammonia nitrogen (NAN) and microbial nitrogen, and the efficiency of microbial synthesis, were not affected by diet, although the microbial contribution to the duodenal flow of nitrogen, and the ratio NAN/N intake were affected. Duodenal recovery of n-alkanes was not affected by diet, and was complete for those present in higher concentrations in the diets. Isolated rumen bacteria contained significant amounts of n-alkanes, contributing to their duodenal flow in variable proportions depending on the diet consumed. The mechanisms of and the reasons for this incorporation are unknown. The faecal recovery of the n-alkanes was affected by diet only in some cases.

4. García, G., Cipriano, M. María Berenice González, y M. Néstor Bautista. 2011. [Pathogenicity of isolates of entomopathogenic fungi against spodoptera frugiperda \(Lepidoptera: Noctuidae\) and Epilachna varivestis \(Coleoptera: Coccinellidae\).](#) Revista Colombiana de Entomología 37 (2): 217–222.

Resumen: Con la finalidad de contar en Durango, México, con aislamientos nativos de hongos entomopatógenos con patogenicidad contra Spodoptera frugiperda y Epilachna varivestis, principales plagas de maíz y frijol, respectivamente, se evaluaron 97 aislamientos de los cuales se seleccionaron a Bb42 y Bb18 de Beauveria bassiana y Ma91 de Metarhizium anisopliae, la actividad insecticida de éstos se midió mediante bioensayos con un diseño completamente al azar aplicando diferentes concentraciones de esporas sobre larvas jóvenes de ambos insectos, los datos de mortalidad de larvas se analizaron con un ANOVA y una prueba de Tukey, la DL50 y TL50 se determinó con el programa Polo PC. El aislamiento Bb42 obtenido de larvas de S. frugiperda fue evaluado contra larvas del segundo estadio occasionando una mortalidad de 96,6 % a una concentración de $1,0 \times 10^9$ esporas mL-1 y tuvo una CL50 de $5,92 \times 10^3$ esporas mL-1 con un tiempo letal de 3,6 días, siendo la más virulenta de las seleccionadas. De igual forma el aislamiento Bb18 obtenido de frijol fue el más virulento contra E. varivestis, ya que causó una mortalidad de larvas neonatas del 93,3%, a $1,0 \times 10^9$ esporas mL-1 a los 3 días, con una CL50 de $1,20 \times 10^6$ esporas mL-1 y tiempo letal de 5,1 días (Tukey; $p \leq 0,05$). Con base en estos resultados se concluyó que la patogenicidad de los aislamientos fue mayor cuando se obtuvieron directamente del insecto que de suelos cultivados con maíz y frijol, así como cuando provienen del respectivo cultivo en el que se encuentra la plaga.

Abstract: In order to obtain native isolates of entomopathogenic fungi in Durango, Mexico, with pathogenicity against Spodoptera frugiperda Fall Armyworm and Epilachna varivestis Mexican Bean Beetle, main pests of maize and beans, respectively, 97 isolates were evaluated, Bb42 and Bb18 of Beauveria bassiana and Ma91 of Metarhizium anisopliae. A bioassay using neonate larvae under completely randomized design of treatments per dose (ANOVA) and Tukey's test were used to measure the insecticidal activity in both insects, mortality data were used to calculate LC 50 and LT 50. The

isolation Bb42 obtained from larvae of *S. frugiperda* and evaluated against second instar larvae of the same insect showed the highest virulence 96.6% of mortality to rate of 1×10^9 spores mL⁻¹, with LC 50 of 5.92×10^3 spores mL⁻¹, and lethal time of 3.6 days; isolation Bb18 from beans was highly virulent against neonate larvae of *E. varivestis*, 93.3% of mortality to 1×10^9 spores mL⁻¹ with an LC 50 of 1.20×10^6 and lethal time of 5.1 days (Tukey, $p \leq 0.05$). In conclusion, the pathogenicity of the isolates was greater when were obtained directly from the insect hosts than from maize and beans soil samples, as well as when it's are obtain from their respective host culture where was find the pest insect.

5. Alcántara J., José Ángel, M. A. Teresa Santillán-Galicia, G. Otero-Colina, M. Antonio Mora, E. M. Alejandra Gutiérrez, y C. Elías Hernández. 2011. [Relationship between polyphagotarsonemus latus \(Acari: Tarsonemidae\) and the papaya ringspot virus \(PRSV-p\).](#) Revista Colombiana de Entomología 37 (2): 228–233.

Resumen: Polyphagotarsonemus latus es una especie cosmopolita que afecta diferentes cultivos tanto en áreas templadas como tropicales. El principal daño ocasionado por esta especie es la reducción o deformación de hojas jóvenes, brotes, frutos y flores. Cuando *P. latus* se alimenta de hojas de papaya, éstas presentan clorosis y las hojas se enrollan. En México, el daño causado por este ácaro es conocido como "mano de chango" porque el área de las hojas de papaya se reduce casi hasta las nervaduras. Este daño es similar al causado por el Virus de la mancha anular del papaya (PRSVp). Debido a que *P. latus* y PRSV-p causan daños similares a las hojas de papaya, el objetivo de esta investigación fue determinar el efecto de *P. latus*, PRSV-p y su posible interacción en la reducción del área foliar en plantas de papaya. El diagnóstico de PRSV-p se realizó mediante RT-PCR. Los efectos producidos por *P. latus* fueron similares a los producidos por PRSV-p; sin embargo, éstos pueden diferenciarse por la zona que es atacada. Los daños de los ácaros sólo se encontraron en las hojas más jóvenes, la clorosis siempre comenzaba de la vena central hacia la parte terminal de los foliolos, a diferencia de la producida por el virus que podía presentarse en cualquier parte de la lámina foliar. La altitud y el diámetro de los tallos pueden verse afectados por la infestación de los ácaros, lo cual no sucede con la presencia del virus.

Abstract: Polyphagotarsonemus Latus Is A Cosmopolitan Species That Affects Several Crops In Tropical And Temperate Areas. The Main Damage Caused By The Infestation Of This Species Is The Reduction Or Deformation Of Young Leaves, Buds, Fruits And Flowers. When *P. latus* Feeds On Young Papaya Leaves, These Present Chlorosis And Down Curled Distorted Areas. In Mexico, The Damage Caused By This Mite Is Called "Monkey'S Hand" Because The Area Of The Young Papaya Leaves Is Reduced Leaving Only The Veins Visible. This Damage Is Similar To The Symptoms Caused By The Infection Of Papaya Ringspot Virus-P (Prsv-P). As *P. latus* And Prsv-P May Cause Similar Damage To Papaya Leaves, The Aim Of This Investigation Was To Determine The Effect Of *P. latus*, Prsv-P And Their Possible Interaction In The Reduction Of Foliar Area. The Diagnosis Of Prsv-P Was Done By Rt-Pcr. The Results Showed That The Effect Produced By *P. latus* And Prsv-P Were Similar;

However, The Mites Were Found Only On The Younger Leaves. As A Result, The Damage Was Observed Only On These Leaves, The Chlorosis Produced By The Mites Started In The Central Vein Towards The End Of The Leaves; On The Contrary, The Damage Of The Virus Can Be Found In Any Part Of The Leaves. The Height And Diameter Of The Stems In The Plants Were Affected Only By The Infestation Of The Mites, As No Difference Was Found On Plants Inoculated With Prsv-P.

6. **Aguirre-Salado, C.A., E. J. Treviño-Garza, O. A. Aguirre-Calderón, J. Jiménez-Pérez, M. A. González-Tagle, J. R. Valdez-Lazalde, L. Miranda-Aragón, y A.I. Aguirre-Salado.** 2012. [Construction of aboveground biomass models with remote sensing technology in the intertropical zone in Mexico](#). *Journal of Geographical Sciences* 22 (4): 669–680; DOI: <http://dx.doi.org/10.1007/s11442-012-0955-9>. [Documento en PDF](#).

Abstract: Spatially-explicit estimation of aboveground biomass (AGB) plays an important role to generate action policies focused in climate change mitigation, since carbon (C) retained in the biomass is vital for regulating Earth's temperature. This work estimates AGB using both chlorophyll (red, near infrared) and moisture (middle infrared) based normalized vegetation indices constructed with MCD43A4 MODerate-resolution Imaging Spectroradiometer (MODIS) and MOD44B vegetation continuous fields (VCF) data. The study area is located in San Luis Potosí, Mexico, a region that comprises a part of the upper limit of the intertropical zone. AGB estimations were made using both individual tree data from the National Forest Inventory of Mexico and allometric equations reported in scientific literature. Linear and nonlinear (exponential) models were fitted to find their predictive potential when using satellite spectral data as explanatory variables. Highly-significant correlations ($p = 0.01$) were found between all the explaining variables tested. NDVI62, linked to chlorophyll content and moisture stress, showed the highest correlation. The best model (nonlinear) showed an index of fit (Pseudo - r^2) equal to 0.77 and a root mean square error equal to 26.55 Mg/ha using NDVI62 and VCF as explanatory variables. Validation correlation coefficients were similar for both models: linear ($r = 0.87^{**}$) and nonlinear ($r = 0.86^{**}$). © 2012 Science China Press and Springer-Verlag Berlin Heidelberg.

7. **Guerra-García, E. J., Y. M. Fernández-Ordoñez, R. C. Medina-Ramírez, y J. Soria-Ruiz.** 2012. Managing semantic-based forestry information via web. En *CONIELECOMP 2012 - 22nd International Conference on Electronics Communications and Computing*, 17–21.
[DOI: http://dx.doi.org/10.1109/CONIELECOMP.2012.6189874](http://dx.doi.org/10.1109/CONIELECOMP.2012.6189874).

Abstract: Among the services provided by Internet, intelligent access to information resources (IRs) seems necessary, in order to contribute to decision-making. Information

management systems should recognize and register the contents of IRs for storage and treatment purposes due to their exponential appearances in the web; therefore it is necessary to develop systems that consider the contents of IRs whether they are stored locally or remotely. This paper describes an approach for managing heterogeneous IRs using forestry resources as case study. The approach builds a semantic forest memory for which a prototype system to validate results has been implemented.

8. Escobar-Villagrán, B.S., y O.L. Palacios-Vélez. 2012. Analysis of over-exploitation of the Texcoco aquifer, Mexico. *Tecnología y Ciencias del Agua* 3 (2): 67–84.

Abstract: The Texcoco aquifer is the main source of water for 12 municipalities in the eastern part of the Valley of Mexico, with a population of over 1.5 million inhabitants. The socioeconomic development of this zone strongly depends on the possibility to achieve sustainable management of this aquifer, which at the present time is heavily over-exploited, although the real degree of over-exploitation is unknown. Since accurately knowing the extent of overexploitation is indispensable in order to develop and implement a sustainable management plan for the aquifer, the aim of this work was to analyze the sources of uncertainties and errors in the estimation of over-exploitation. For this purpose, two methods were applied: a) the hydrologic balance method, consisting of measuring or calculating the different water inputs and outputs in the aquifer area, and b) the method to monitor the hydraulic head drawdown and knowledge of specific storage (in confined aquifers) or specific yield (in unconfined aquifers), determined by aquifer tests. As a result of the application of these methods, over-exploitation of $62 \text{ hm}^3/\text{year}$ was estimated using the first method and $67.6 \text{ hm}^3/\text{year}$ using the second. The similarity of the two values was a mere coincidence for several reasons: there are errors in the calculation of real evapotranspiration that should be subtracted from the precipitation volume in order to calculate vertical recharge; surface runoff to and from the aquifer area is not measured at the sites where it is needed; the hydrogeological aquifer characteristics are not measured in situ, but rather are taken from neighboring aquifers; there are not enough hydraulic head measurements to correctly estimate the gradient and the groundwater inflows and outflows. Even the volume of water extracted by the pumping wells is poorly determined, because of an unknown number of clandestine wells and the information corresponding to the registered wells is incomplete and not updated.

GLOSARIO

Citas por documento (2 años):

Medida utilizada por el Grupo SCImago en el [SCImago Journal & Country Rank](#), mide el impacto científico de un artículo promedio publicado en la revista, se calcula utilizando la misma fórmula que el factor de impacto de una revista en el Journal of Citation Reports de TMThomson Reuters.

Cuartil

Medida utilizada por el JCR y el grupo SCImago para indicar el rango en que las revistas están posicionadas en las categorías temáticas de acuerdo a su factor de impacto (FI) o Scimago Journal Rank (SJR). El total de revistas agrupadas en una categoría temática se dividen entre cuatro formando cuartiles. Las revistas se colocan en alguno de los cuartiles de acuerdo a su posición de mayor a menor de acuerdo a su FI o SJR en un año determinado. Las revistas con el FI o SJR más alto se concentran en el primer cuartil, y son las que tiene más posibilidades de ser vistas y consultadas por los investigadores.

DOI

Digital object identifier o DOI (identificador digital de objeto). El DOI es un tipo de identificador persistente, este tipo de identificadores solucionaron el problema originado por los cambios de ubicación y/o nombre de los archivos. El objetivo de estos identificadores es re-direccionar a los documentos, aunque éstos últimos hayan cambiado de ubicación en la red (cambio de URL). El objeto puede ser cualquier entidad o cosa, física, digital o abstracta.

EPUB o ePub

Acrónimo de Electronic publication (Publicación electrónica), es un formato de código abierto para archivos de libros electrónicos que se redimensionan de acuerdo al dispositivo en el que se están leyendo o consultando. Fue creado por el Foro Internacional de Edición Digital (IDPF por sus siglas en inglés). Es un nuevo estándar de libros digitales que co-existirá por un tiempo con PDF. La mayor ventaja de ePub es que su contenido se adapta automáticamente al tamaño de la pantalla. Para leer libros digitales en formato ePub en una computadora se requiere un programa especial. Hay diferentes programas en Internet, se recomienda descargar e instalar el [Adobe Digital Editions](#). Existen diferentes aplicaciones para los diferentes dispositivos móviles, por lo que se recomienda descargarlas desde Google Play para sistemas operativos Android (Aldiko Book Reader, ePub Reader for Android, o Mantano Reader entre otros) o de la App Store para sistemas operativos IOS (eBookS Reader y Blue Fire Reader entre otros).

Factor de Impacto

El factor de impacto es el número promedio de veces que han sido citados en un año los artículos publicados en los últimos dos años en una revista. Un factor de impacto de 1,0 significa que, en promedio, los artículos publicados uno o dos años atrás se han citado una sola vez. Un factor de impacto de 2.5 significa que, en promedio, los artículos publicados uno o dos años atrás se han citado dos veces y media. Las obras que citan pueden ser artículos publicados en la misma revista. Sin embargo, la mayoría de las obras que citan son de diferentes revistas, actas o libros indexados por el ISI Web of Science.

HTML

HTML son las siglas de HyperText Markup Language (lenguaje de marcado de hipertexto), se refiere al lenguaje de marcado usado en la mayoría de las páginas web. Se utiliza para describir y traducir la estructura y la información en forma de texto, así como para complementar el texto con objetos no textuales.

Índice de inmediatez

El índice de inmediatez es el número promedio de veces que se cita un artículo publicado en el año de su publicación. Por lo tanto indica la rapidez con que los artículos en una revista son citados. El índice se calcula dividiendo el número de citas a artículos publicados en un año determinado por el número de artículos publicados en ese año. Debido a que es un promedio por artículo, tiende a descontar la ventaja de las grandes revistas con las más pequeñas. Sin embargo, las revistas publicadas con mayor frecuencia pueden tener una ventaja debido a que un artículo publicado a principios de año tiene una mejor oportunidad de ser citado que aquel artículo publicado a finales de año. Muchas de las revistas que publican con poca frecuencia o al final del año tienen bajos índices de inmediatez. Las revistas que se indizan con largos períodos de retraso como las revistas latinoamericanas, tienen índices de inmediatez muy bajos. Al comparar las revistas especializadas, el índice de inmediatez puede proporcionar una perspectiva útil en la investigación de vanguardia.

ISI Web de la Ciencia

El Web de la Ciencia (WOS) es un servicio en línea de información científica, suministrado por Thomson Reuters Scientific, forma parte del ISI Web del Conocimiento (WoK). Permite el acceso a tres bases de datos en grandes ramas de la ciencia (Science Citation Index (SCI), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI)) en las que aparecen citas de artículos de revistas científicas, libros, actas de congresos y otros tipos de material impreso. Incluye además el acceso a las bases de datos de química: Index Chemicus y Current Chemical Reactions. El ISI Web de la Ciencia permite ingresar a las

publicaciones previas de una determinada investigación publicada, a través del acceso a sus referencias bibliográficas citadas, o también, a las publicaciones que citan un documento determinado para descubrir el impacto de un trabajo científico sobre la investigación actual a través del número de citas que ha tenido el trabajo dentro de la misma base de datos. Indiza 9.300 de las revistas de investigación más prestigiosas y de alto impacto del mundo. Contiene alrededor de 36 millones de registros. Mayor información en: <http://ip-science.thomsonreuters.com/es/productos/wos/>.

Journal of Citation Reports (JCR)

El Journal Citation Reports ofrece un medio sistemático y objetivo para evaluar de manera crítica las revistas más importantes del mundo indizadas en el ISI Web de la Ciencia. Es el único recurso de evaluación de revistas que brinda información estadística basada en los datos de citas. El JCR Permite medir la influencia y el impacto de las investigaciones realizadas (a nivel de revistas y categorías temáticas) y muestra las relaciones entre las revistas que citan y las que son citadas. El JCR de 2011 Incluye factores de impacto de más de 10.500 de las revistas más citadas en 232 disciplinas y más de 2.500 editores y 82 países representados. Mayor información en:

<http://ip-science.thomsonreuters.com/es/productos/jcr/>.

PDF

PDF son las siglas de Portable Document Format, (formato de documento portátil). Es un formato de almacenamiento de documentos. Permite realizar cualquier combinación de texto, elementos multimedia como vídeos o sonido, elementos de hipertexto como vínculos y marcadores, enlaces y miniaturas de páginas a un peso menor en bits que el documento original, lo que lo hace muy atractivo para enviar o portar documentos muy grandes.

SCImago Journal Ranking (SJR)

Es un indicador que expresa el número de enlaces que una revista recibe a través de la citación ponderada de sus documentos en relación con el número de documentos publicados en el año por cada publicación. La ponderación de las citas se hace en función de las que recibe la publicación citante.

SCOPUS

Scopus es la más grande base de datos de resúmenes y referencias de literatura revisada por pares con herramientas inteligentes para rastrear, analizar y visualizar la investigación científica. Está diseñado para encontrar la información que los científicos necesitan. Scopus ofrece un rendimiento alto del proceso de investigación de la literatura de forma

rápida, fácil y completa. Contiene 47 millones de registros, 70% con resúmenes, mas de 19,500 títulos de 5,000 editores alrededor del mundo. Incluye mas de 4.6 millones de actas de congresos. Mayor información en: <http://www.info.sciverse.com/scopus/about>.

URL

URL es el acrónimo de uniform resource locator, o localizador de recursos uniformes, es una secuencia de caracteres, de acuerdo a un formato y estándar, que se usa para nombrar recursos en Internet para su localización o identificación, como documentos textuales, imágenes, videos, presentaciones digitales, etc. Un URL comienza con el nombre de su esquema, seguido por dos puntos, seguido por una parte específica del esquema. Algunos ejemplos de esquemas URL: http - recursos HTTP, https - HTTP sobre SSL, o ftp - File Transfer Protocol. El común de los usuarios de internet usamos URL hipertexto o http para la mayoría de la páginas Web.

ALERTA BIBLIOGRÁFICA DE LA PRODUCCIÓN CIENTÍFICA DEL COLEGIO DE POSTGRADUADOS
JUNIO 2012

ANEXO 1

Revistas indizadas en el ISI Web de la Ciencia en las que se publicaron los artículos donde participaron investigadores del Colegio de Postgraduados, ordenadas por Factor de Impacto 2011 (FI 2011). Se incluye también: el número de artículos publicados en cada revista, categorías temáticas y su posición dentro de la categoría, Cuartil, según la posición de la revista en la categoría temática, factor de impacto en cinco años, índice de inmediatez, y país de publicación.

No. de artículos	Revista ISI Web de la Ciencia	FI 2011	Categorías temáticas, posición	Cuartil	FI Cinco Años	Índice de Inmediatez	País
1	Molecular Ecology	5.522	Biochemistry and Molecular Biology, 47/289; Ecology, 8/131; Evolutionary Biology, 5/45	C1,C1,C1	6.347	1.109	ENGLAND
1	Fems Microbiology Ecology	3.408	Microbiology, 33/112	C2	3.979	0.657	ENGLAND
1	Plant Cell Tissue and Organ Culture	3.09	Plant Sciences, 29/190; Biotechnology & Applied Microbiology, 44/157	C1, C2	2.576	0.891	NETHERLANDS
1	Plant and Soil	2.733	Agronomy, 8/79; Plant Sciences, 45/190; Soil Science, 2/33	C1,C1,C1	3.064	0.581	NETHERLANDS
1	Biological Trace Element Research	1.923	Biochemistry and Molecular Biology, 206/289; Endocrinology and Metabolism, 84/121	C3, C3	1.708	0.194	UNITED STATES
1	Trees structure and function	1.685	Forestry, 13/59	C1	2.026	0.314	UNITED STATES
1	Genetic Resources and Crop Evolution	1.554	Agronomy, 26/79; Plant Sciences, 85/190	C2	1.567	0.31	NETHERLANDS
1	Journal of the Science of Food and Agriculture	1.436	Agriculture Multidisciplinary, 10/57; Chemistry Applied, 29/71; Food Science & Technology, 52/128	C1, C2,C2	1.762	0.371	ENGLAND
1	Journal of Parasitology	1.405	Parasitology, 21/33	C3	1.423	0.268	UNITED STATES
1	Agroforestry systems	1.378	Agronomy, 31/79; Forestry, 18/59	C2,C2	1.546	0.244	NETHERLANDS
1	Symbiosis	1.214	Microbiology, 90/112	C4	1.148	0.064	NETHERLANDS
1	Pharmaceutical Biology	0.878	Medical Laboratory Technology, 24/32; Pharmacology & Pharmacy, 214/261; Plant Sciences, 125/190	C4,C4,C3	1.046	0.209	NETHERLANDS
1	Australasian Plant Pathology	0.837	Plant Sciences, 126/190	C3	1.002	0.397	AUSTRALIA
1	Plant Species Biology	0.792	Ecology, 107/131; Plant Sciences, 129/190	C4,C3	0.972	0	JAPAN
1	Pesquisa Agropecuaria Brasileira	0.756	Agriculture Multidisciplinary, 22/57	C2	1.026	0.097	BRASIL
1	Statistics	0.724	Statistics & Probability, 69/116	C3	0.759	0.114	GERMANY
1	Chilean Journal of Agricultural Research	0.447	Agriculture multidisciplinary, 33/59; Agronomy, 59/79	C3, C3	0.5	0.049	CHILE
1	Bosque	0.429	Forestry, 48/59	C4	na	0.061	CHILE
2	Southwestern Entomologist	0.422	Entomology, 67/85	C4	0.38	0.083	UNITED STATES
4	Agrociencia	0.374	Agriculture multidisciplinary, 36/57	C3	0.451	0.078	MÉXICO
2	Revista Internacional de Contaminación Ambiental	0.36	Environmental Sciences, 198/2015	C4	na	0	MÉXICO
1	Interciencia	0.308	Ecology, 124/131	C4	0.457	0.023	VENEZUELA
1	Revista Mexicana de Biodiversidad	0.29	Biodiversity Conservation, 30/35	C4	0.514	0.09	MÉXICO
1	Communications in Statistics- Theory and Methods	0.274	Statistics & Probability, 109/116	C4	0.386	0.077	UNITED STATES
1	South African Journal of Animal Science	0.242	Agriculture, Dairy & Animal Science, 46/55	C4	0.405	0.154	SOUTH AFRICA
1	Acta Botánica Mexicana	0.204	Plant Sciences, 182/190	C4	na	0.069	MÉXICO
2	Revista Chapingo, Serie Ciencias Forestales y del Ambiente	0.04	Forestry, 59/59	C4	na	0.016	MÉXICO
1	Environment and Urbanization	na	na	na	na	na	na
1	Scientific World Journal	na	na	na	na	na	na

Fuente: elaboración propia con datos del Journal of Citation Reports (JCR) 2011 de Thomson Reuters Scientific.

ALERTA BIBLIOGRÁFICA DE LA PRODUCCIÓN CIENTÍFICA DEL COLEGIO DE POSTGRADUADOS
JUNIO 2012

ANEXO 2

Revistas indizadas en SCOPUS en las que se publicaron los artículos donde participaron investigadores del Colegio de Postgraduados, según el SCImago Journal Ranking (SJR) 2011.

No artículos	Revista	Categoría temática	SJR	Posición / Cuartil	Citas por doc. a 2 años	País
1	Food Control	Food Science	0.098	53/229, C1	1.71	Netherlands
1	Journal of Geographical Sciences	Earth and Planetary Sciences (miscellaneous)	0.04	95/226, C2	0.538	China
1	Acta Scientiarum - Agronomy	Agronomy and Crop Science	0.033	114/184, C3	0.2	Brasil
2	Revista Colombiana de Entomología	Insect Science	0.033	62/92, C3	0.067	Colombia
1	Tecnología y Ciencias del Agua	Water Science and Technology	na	na na		México
1	EAAP Scientific Series International Conference on Electronics Communications and Computing	na	na	na na		na
1		Engineering	na	na na		na

Fuente: Elaboración propia con datos del grupo SCIMAGO (<http://www.scimagojr.com/>)