Record 1
AU: Sugiharto,-B.; Ermawati,-N.; Mori,-H.; Aoki,-K.; Yonekura-Sakakibara,-K.; Yamaya,-T.; Sugiyama,-T.; Sakakibara,-H.
TI: Identification and characterization of a gene encoding drought-inducible protein localizing in the bundle sheath cell of sugarcane.
SO: Plant-cell-physiol. Kyoto, Japan : Japanese Society of Plant Physiologists. Mar 2002. v. 43 (3) p. 350-354.
AB: We have identified a drought-inducible gene, designated as SoDip22, in sugarcane leaves. The cDNA encoded a hydrophilic protein with a calculated molecular mass of 15.9 kDa and the amino acid sequence was similar to that of ABA, stress and ripening-inducible protein from various plant species. ABA or mannitol-treatment of the detached leaves also induced SoDip22 expression. Stepwise homogenization of the stressed leaves showed that SoDip22 is localized in bundle sheath cells. These results suggest that SoDip22 functions to adapt to drought stress in the bundle sheath cell, and that the signaling pathway for the induction is, at least in a part, mediated by ABA.

Record 2
AU: Graham,-M.H.; Haynes,-R.J.; Meyer,-J.H.
TI: Changes in soil chemistry and aggregate stability induced by fertilizer applications, burning and trash retention on a long-term sugarcane experiment in South Africa.
SO: Eur-j-soil-sci. Oxford : Published by Blackwell Scientific Publications and the British Society of Soil Science on behalf of National Societies of Soil Science in Europe, c1994-. Dec 2002. v. 53 (4) p. 589-598.

Record 3
AU: Victoriano,-E.; Gregorio,-E.A.
TI: Ultrastructure of the excretory duct in the silk gland of the sugarcane borer Diatraea saccharalis (Lepidoptera: Pyralidae).
SO: Arthropod-struct-dev. Oxford, England : Elsevier Science Ltd., c2000-. Feb 2002. v. 31 (1) p. 15-21.
AB: The excretory duct in the silk gland of the sugarcane borer Diatraea saccharalis consists of two morphologically distinct regions, recognized by scanning and transmission electron microscopy. The thin posterior region, adjacent to the glandular region, presents a regular surface. Secretory vesicles containing either electron-dense or fibrillar cuticular-like materials are observed in their apical cytoplasm; the same cuticular materials were detected as extracellular deposits among the microvilli. The short anterior region, near the common duct, exhibits surface protrusions; there are no secretory vesicles in their apical cytoplasm. These results show that only the duct cells at the posterior region are involved in the secretion of the cuticular intima elements. Desmosome-like structures were visualized linking together adjacent microvillar membranes only in the cells of anterior duct region, with unknown function. The transition between the duct and the glandular region is abrupt; the cells of the glandular and posterior duct regions present large amounts of microtubules. Nerve fibers can be observed between the duct cells in their two regions, suggesting that control of silk secretion may occur in the excretory duct via neurotransmitter liberation.

Record 4
AU: Carson,-D.L.; Botha,-F.C.
TI: Genes expressed in sugarcane maturing internodal tissue.
SO: Plant-cell-rep. Berlin : Springer-Verlag. May 2002. v. 20 (11) p. 1075-1081.
AB: To explore gene expression during sugarcane culm maturation, we performed a partial sequence analysis of random clones from maturing culm total and subtracted cDNA libraries. Database comparisons revealed that of the 337 cDNA sequences analysed, 167 showed sequence homology to gene products in the

protein databases, while 111 matched uncharacterised plant expressed sequence tags (ESTs) only. The remaining cDNAs showed no database match and could represent novel genes. The majority of ESTs corresponded to a variety of genes associated with general cellular metabolism. ESTs homologous to various stress response genes were also well represented. Analysis of ESTs from the subtracted library identified genes that may be preferentially expressed during culm maturation. This research has provided a framework for functional gene analysis in sugarcane sucrose-accumulating tissues.

Record 5
AU: Singels,-A.; Bezuidenhout,-C.N.
TI: A new method of simulating dry matter partitioning in the Canegro sugarcane model.
SO: Field-crops-res. Amsterdam, Elsevier. Nov 2002. v. 78 (2/3) p. 151-164.

Record 6
AU: Keeping,-M.G.; Meyer,-J.H.
TI: Calcium silicate enhances resistance of sugarcane to the African stalk borer Eldana saccharina Walker (Lepidoptera: Pyralidae).
SO: Agric-for-entomol. Oxford, UK : Published for the Royal Entomological Society [by] Blackwell Science, c1999-. Nov 2002. v. 4 (4) p. 265-274.

Record 7
AU: Figueiredo,-M.-de-F.-de-S.; Marques,-E.J.; Lima,-R.O.R.-de.; Oliveira,-J.V.-de.
TI: Screening of Beauveria bassiana (Bals.) Vuill. and Metarhizium anisopliae (Metsch.) Sorok. isolates against the giant borer of sugarcane Castnia licus (Drury) (Lepidoptera: Castniidae).
SO: Neotrop-entomol. Londrina, PR : Entomological Society of Brazil, 2001-. July/Sept 2002. v. 31 (3) p. 397-403.
AB: Isolates of the entomopathogenic fungi Beauveria bassiana (Bals.) Vuill. and Metarhizium anisopliae (Metsch.) Sorok. were tested against Castnia licus (Drury) larvae, collected from Tabu Distillery sugar cane fields, in Caapora-PB. The isolates code 645, 604, 512, 447, IPA 205, IPA 202, 610, IPA 198, IPA 214 and CG 001 of B. bassiana, as well as the isolates code 1172, 866, PL 47, IPA 204, CG 423, UOD, 860, IPA 216, E(9) and CG 100 of M. anisopliae, originated from different hosts and localities, were tested. At the concentration of 10(8) conidia/ml, the percentage of mortality caused by isolates of B. bassiana ranged from 53.3% to 83.3%, with Lethal Time (LT50) ranging from 8.5 to 14.9 days. The isolate 645 presented the highest potential to control C. licus. For M. anisopliae isolates, the percentage of larval mortality ranged from 43.3 to 80%, with LT50 ranging from 7.3 to 18.0 days. The isolate 1172 was the most virulent. The lethal concentrations (LC50) for the isolates 645 of B. bassiana and 1172 of M. anisopliae, were 1,17 x 10(7) conidia/ml and 2,34 x 10(7) conidia/ml, respectively, thus showing that both isolates are pathogenic to larval phase of C. licus.

Record 8
AU: Gendley,-M.K.; Singh,-P.; Garg,-A.K.
TI: Performance of crossbred cattle fed chopped green sugarcane tops and supplemented with wheat bran or lentil chuni concentrates.
SO: Asian-australas-j-anim-sci. Seoul, Korea : AAAP and Korean Society of Animal Nutrition. Oct 2002. v. 15 (10) p. 1422-1427.

Record 9
AU: Leathers,-T.D.; Nunnally,-M.S.; Cote,-G.L.
TI: Modification of alternan by novel Penicillium spp.
SO: J-ind-microbiol-biotechnol. Houndmills, Basingstoke, Hampshire, UK : Nature Publishing Group. Oct 2002. v. 29 (4) p. 177-180.
AB: Abstract: Four strains identified as Penicillium spp. were isolated from soil samples based on their capacity to modify the unique polysaccharide,

alternan. Spores from these isolates germinated in medium containing alternan and reduced the apparant molecular weight of alternan as determined by high-performance size exclusion chromatography and viscometry. However, the fungi exhibited limited growth on alternan and did not consume the substrate. The rheological properties of the modified alternan resembled those of commercial gum arabic. Thus, treatment of native alternan with spores from these Penicillium spp. strains constitutes a simple bioconversion method to quantitatively produce novel and potentially useful modified alternan.

Record 10
AU: Mushtaq,-K.; Dawson,-P.J.
TI: Acreage response in Pakistan: a co-integration approach.
SO: Agric-econ. Amsterdam ; New York : Elsevier, c1986-. Aug 2002. v. 27 (2) p. 111-121.
AB: This paper seeks to quantify the acreage responses of wheat, cotton, sugarcane and rice in Pakistan using co-integration techniques and impulse response analysis. Results indicate that acreages of wheat and basmati rice do not respond significantly to shocks in own-price while cotton, sugarcane and high yielding variety (HYV) rice do, and that long-run equilibrium is re-established after about 4 years. Irrigated area is an important determinant of acreage.

Record 11
AU: Parmessur,-Y.; Aljanabi,-S.; Saumtally,-S.; Dookun-Saumtally,-A.
TI: Sugarcane yellow leaf virus and sugarcane yellows phytoplasma: elimination by tissue culture.
SO: Plant-pathol. Edinburgh : Blackwell Science Ltd. Oct 2002. v. 51 (5) p. 561-566.

Record 12
AU: Goncalves,-M.C.; Klerks,-M.M.; Verbeek,-M.; Vega,-J.; Heuvel,-J.F.J.M.-van-den.
TI: The use of molecular beacons combined with NASBA for the sensitive detection of sugarcane yellow leaf virus.
SO: Eur-j-plant-pathol. Dordrecht ; Boston : Kluwer Academic Publishers, c1994-. June 2002. v. 108 (5) p. 401-407.
AB: Sugarcane yellow leaf virus (ScYLV) is widely distributed in Brazil and other sugarcane producing countries causing significant yield losses. Due to the high incidence of the aphid vector, the virus is widespread in the field and in parental clones used in sugarcane breeding programmes. Aiming to present a sensitive and reliable detection of ScYLV, we have adapted an AmpliDet RNA system, compared it with the currently available detection methods and discussed its applicability for routine diagnosis. AmpliDet RNA consists of nucleic acid sequence-based amplification (NASBA) of the target RNA with specific primers and simultaneous real-time detection of the amplification products with molecular beacons. The results showed that the system produced a detection level of at least l00 fg of purified virus. Virus was readily detected in plant tissues with low levels of infection (without the need of previous RNA extraction) and in the hemolymph of aphids. The method showed to be virus-specific, testing negative for other species of the Luteoviridae. In conclusion, the system has potential to become a diagnostic method for the detection of sugarcane viruses.

Record 13
AU: Khalil,-A.I.
TI: Production and characterization cellulolytic and xylanolytic enzymes from the ligninolytic white-rot fungus Phanerochaete chrysosporium grown on sugarcane bagasse.
SO: World-j-microbiol-biotechnol. Dordrecht, The Netherlands : Kluwer Academic Publishers. Nov 2002. v. 18 (8) p. 753-759.

Record 14

AU: Do-Thi-Thanh-Van.; Ledin,-I.; Nguyen-Thi-Mui.
TI: Feed intake and behaviour of kids and lambs fed sugar cane as the sole roughage with or without concentrate.
SO: Anim-feed-sci-technol. Amsterdam, The Netherlands : Elsevier Science B.V. Sept 20, 2002. v. 100 (1/2) p. 79-91.

Record 15
AU: Hassoun,-P.; Fulcheri,-C.; Nabeneza,-S.
TI: Feeding dairy heifers untreated or urea-treated fibrous sugarcane residues: effect on dry matter intake, growth, and metabolic parameters.
SO: Anim-feed-sci-technol. Amsterdam, The Netherlands : Elsevier Science B.V. Sept 20, 2002. v. 100 (1/2) p. 31-41.

Record 16
AU: Korimbocus,-J.; Preston,-S.; Danks,-C.; Barker,-I.; Coates,-D.; Boonham,-N.
TI: Production of monoclonal antibodies to sugarcane yellow leaf virus using recombinant readthrough protein.
SO: Phytopath-Z. Berlin : Blackwell Wissenschafts-Verlag GmbH. Sept 2002. v. 150 (8/9) p. 488-494.

Record 17
AU: Di-Luccio,-M.; Borges,-C.P.; Alves,-T.L.M.
TI: Economic analysis of ethanol and fructose production by selective fermentation coupled to pervaporation: effect of membrane costs on process economics.
SO: Desalination. Amsterdam : Elsevier Science B.V. Sept 10, 2002. v. 147 (1/3) p. 161-166.

Record 18
AU: Nene,-S.; Kaur,-S.; Sumod,-K.; Joshi,-B.; Raghavarao,-K.S.M.S.
TI: Membrane distillation for the concentration of raw cane-sugar syrup and membrane clarified sugarcane juice.
SO: Desalination. Amsterdam : Elsevier Science B.V. Sept 10, 2002. v. 147 (1/3) p. 157-160.

Record 19
AU: Mayorga-Reyes,-L.; Morales,-Y.; Salgado,-L.M.; Ortega,-A.; Ponce-Noyola,-T.
TI: Cellulomonas flavigena: characterization of an endo-1,4-xylanase tightly induced by sugarcane bagasse.
SO: FEMS-micro-biol-lett. Amsterdam, The Netherlands : Elsevier Science B.V. Sept 10, 2002. v. 214 (2) p. 205-209.
AB: Xylanases, an important group of enzymes for biomass degradation in the industry, are commonly found forming complex multienzyme systems. As a preliminary step to the construction of efficient xylanase producers using genetic engineering, we have characterized a gene encoding an endo-beta-1,4 xylanase (xyncflA) from Cellulomonas flavigena. The xylanase activity and the xyncflA synthesis were higher when C. flavigena was grown on sugarcane bagasse. In this substrate, both activity and transcript increased with approximately the same rate during the culture period. When C. flavigena grew on glucose, low signal of mRNA was observed, suggesting that the xyncflA gene is regulated at the transcriptional level.

Record 20
AU: Techapun,-C.; Sinsuwongwat,-S.; Watanabe,-M.; Sasaki,-K.; Poosaran,-N.
TI: Production of cellulase-free xylanase by a thermotolerant Streptomyces sp. grown on agricultural waste and media optimization using mixture design and Plackett-Burman experimental design methods.
SO: Biotechnol-lett. Dordrecht : Kluwer Academic Publishers. Sept 2002. v. 24 (17) p. 1437-1442.
AB: Cellulase-free xylanase was produced by Streptomyces sp. Ab106 on finely ground cane bagasse at 55 degrees C. The optimal medium composition was

developed by applying the mixture design and linear mathematical program, and evaluated using the Plackett-Burman experimental design. The best composition of basal medium was found by using the mixture design method. The highest xylanase activity, 10.6 IU, was obtained after 6 days of fermentation in shaked flask at 100 rpm, 55 degrees C, pH 7. Both experimental designs showed that trace elements induced xylanase production. With fermentation in a 5-l fermenter, xylanase activity of 12.5 IU was achieved.

Record 21
AU: Holder,-D.G.
TI: Sugar cane variety 'CL83-4266'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. June 18, 2002. (12,710) 3 p.
AB: Abstract: A new and distinct variety of sugar cane has resulted from crossing the variety of 'CL66-141' (unpatented) as a female with variety 'CL73-838' (unpatented) as male.

Record 22
AU: Oliveira,-A.L.M.; Urquiaga,-S.; Dobereiner,-J.; Baldani,-J.I.
TI: The effect of inoculating endophytic N2-fixing bacteria on micropropagated sugarcane plants.
SO: Plant-soil. Dordrecht, The Netherlands : Kluwer Academic Publishers. May 2002. v. 242 (2) p. 205-215.

Record 23
AU: Alpizar,-D.; Fallas,-M.; Oehlschlager,-A.C.; Gonzalez,-L.M.; Chinchilla,-C.M.; Bulgarelli,-J.
TI: Pheromone mass trapping of the west Indian sugarcane weevil and the American palm weevil (Coleoptera: Curculionidae) in Palmito palm.
SO: Fla-entomol. Lutz, Fla. : Florida Entomological Society. Sept 2002. v. 85 (3) p. 426-430.

Record 24
AU: Kuramae,-E.E.; Fenille,-R.C.; Rosa,-V.E.-Jr.; Rosa,-D.D.; Ulian,-E.C.
TI: Mining the enzymes involved in the detoxification of reactive oxygen species (ROS) in sugarcane. [Erratum: Sept 2002, v. 3 (5), p. 409.].
SO: Mol-plant-patho. Oxford, UK : Blackwell Science in collaboration with the British Society of Plant Pathology, c2000-. July 2002. v. 3 (4) p. 251-259.

Record 25
AU: Martinez-Montero,-M.E.; Mora,-N.; Quinones,-J.; Gonzalez-Arnao,-M.T.; Engelmann,-F.; Lorenzo,-J.C.
TI: Effect of cryopreservation on the structural and functional integrity of cell membranes of sugarcane (Saccharum sp.) embryogenic calluses.
SO: Cryo-Letters. Cambridge : Cryo-Letters. July/Aug 2002. v. 23 (4) p. 237-244.

Record 26
AU: Viator,-B.J.; Griffin,-J.L.; Ellis,-J.M.
TI: Sugarcane (Saccharum spp.) response to azafeniden applied preemergence and postemergence.
SO: Weed-technol. Lawrence, Kans. : The Weed Science Society of America. Apr/June 2002. v. 16 (2) p. 444-451.

Record 27
AU: Milner,-R.J.; Samson,-P.R.; Bullard,-G.K.
TI: FI-1045: a profile of a commercially useful isolate of Metarhizium anisopliae var. anisopliae.
SO: Biocontrol-sci-technol. Abingdon, Oxfordshire : Carfax Publishing Co,. Feb 2002. v. 12 (1) p. 43-58.

AB: The isolate FI-1045 is the basis of a mycoinsecticide, BioCane granules recently registered for the control of greyback canegrub, Dermolepida albohirtum (Coleoptera: Scarabaeidae: Melolonthinae) in Australian sugarcane fields. The isolate was obtained from a naturally infected larva of D. albohirtum collected from Tully in north Queensland. The isolate can be distinguished from others infecting the same insect and also other species of canegrub by means of RAPD patterns and sequence data from the ITS region. A comparison of a stored FI-1045 isolate with three derived isolates which had different histories of host-passage, showed no variation in RAPD pattern. All isolates grew well at temperatures between 20 and 30 degrees C but did not grow at 35 degrees C and grew slowly at 15 degrees C. However, on potato dextrose agar, the original FI-1045 grew more rapidly and did not produce as much pigment as the derived isolates. It is speculated that this difference was due to the storage method used with the original FI-1045 being stored at -70 degrees C and the other isolates being freeze-dried. Bioassays against third instar greyback cane grubs gave a mean LC50 of 8.7 x 10(4) conidia g-1 peat substrate after 10 weeks. Using Tenebrio molitor as a host, it was found that conidia taken directly from the infected insect were similar in virulence to the cultured FI-1045. Using injection of culture filtrate as the assay method, it was found that FI-1045 produced destruxins. In laboratory host range tests, a dose of 10(6) conidia g-1 peat killed 96% of southern one year canegrubs, Antitrogus consanguineius, 85% of Lepidiota picticollis and less than 30% of the other five species of canegrub tested.

Record 28
AU: Soares-Costa,-A.; Beltramini,-L.M.; Thiemann,-O.H.; Henrique-Silva,-F.
TI: A sugarcane cystatin: recombinant expression, purification, and antifungal activity.
SO: Biochem-biophys-res-commun. Orlando, Fla. : Academic Press. Sept 6, 2002. v. 296 (5) p. 1194-1199.

Record 29
AU: Do-Thi-Thanh-Van.; Ledin,-I.
TI: Effects of different foliages and sugar cane in the diet in late pregnancy on ewe and lamb performance.
SO: Asian-australas-j-anim-sci. Seoul, Korea : AAAP and Korean Society of Animal Nutrition. June 2002. v. 15 (6) p. 828-833.

Record 30
AU: Brumbley,-S.M.; Petrasovits,-L.A.; Birch,-R.G.; Taylor,-P.W.J.
TI: Transformation and transposon mutagenesis of Leifsonia xyli subsp. xyli, causal organism of ratoon stunting disease of sugarcane.
SO: Mol-plant-microb-interact. St. Paul, MN : APS Press, [c1987-. Mar 2002. v. 15 (3) p. 262-268.
AB: Conditions have been developed for genetic transformation and insertional mutagenesis in Leifsonia xyli subsp. xyli subsp. xyli (Lxx), the causal organism of ratoon stunting disease (RSD), one of the most damaging and intractable diseases of sugarcane internationally. Transformation frequencies ranged from 1 to 10 colony forming units (CFU)/microgram of plasmid DNA using Clavibacter/Escherichia coli shuttle vectors pCG188, pDM302, and pDM306 and ranged from 50 to 500 CFU/microgram using cosmid cloning vectors pLAFR3 and pLAFR5-km. The transformation/transposition frequency was 0 to 70 CFU/microgram of DNA, using suicide vectors pUCD623 and pSUP2021 containing transposable elements Tn4431 and Tn5, respectively. It was necessary to grow Lxx in media containing 0.1% glycine for electroporation and to amplify large plasmids in a dam-/dcm- E. coli strain and purify the DNA by anion exchange. To keep selection pressure at an optimum, the transformants were grown on nitrocellulose filters (0.2-micrometer pore size) on media containing the appropriate antibiotics. Transposon Tn4431 containing a promoterless lux operon from Vibrio fischeri and a tetracycline-resistance gene was introduced on the suicide vector pUCD623. All but 1% of the putative transposon mutants produce light, indicating

transposition into functional Lxx genes. Southern blot analysis of these transformants indicates predominantly single transposon insertions at unique sites. The cosmid cloning vector pLAFR5-km was stably maintained in Lxx. The development of a transformation and transposon mutagenesis system opens the way for molecular analysis of pathogenicity determinants in Lxx.

Record 31
AU: Chen,-J.; Chen,-J.; Adams,-M.J.
TI: Characterisation of potyviruses from sugarcane and maize in China.
SO: Arch-virol. Wien, Austria : Springer-Verlag. 2002. v. 147 (6) p. 1237-1246.

Record 32
AU: Inman-Bamber,-N.G.; Muchow,-R.C.; Robertson,-M.J.
TI: Dry matter partitioning of sugarcane in Australia and South Africa.
SO: Field-crops-res. Amsterdam, Elsevier. June 2002. v. 76 (1) p. 71-84.

Record 33
AU: Sundara,-B.; Natarajan,-V.; Hari,-K.
TI: Influence of phosphorus solubilizing bacteria on the changes in soil available phosphorus and sugarcane and sugar yields.
SO: Field-crops-res. Amsterdam, Elsevier. Aug 2002. v. 77 (1) p. 43-49.

Record 34
AU: Hanboonsong,-Y.; Choosai,-C.; Panyim,-S.; Damak,-S.
TI: Transovarial transmission of sugarcane white leaf phytoplasma in the insect vector Matsumuratettix hiroglyphicus (Matsumura).
SO: Insect-mol-biol. Oxford : Blackwell Science Ltd. Feb 2002. v. 11 (1) p. 97-103.
AB: White feat is a serious disease of sugarcane caused by phytoplasma. The disease is transmitted to the plant by the leafhopper Matsumuratettix hiroglyphicus (Matsumura). The reservoir of phytoplasma was suspected to be weeds that grow in sugarcane farming areas because they can be infected with phytoplasma and show symptoms similar to sugarcane white leaf. However in previous work we have demonstrated by RFLP and sequencing that this is not the case. Here we have reared M. hiroglyphicus through two generations by feeding them phytoplasma free sugarcane grown from tissue culture. By nested-PCR followed by sequencing, we demonstrated the presence of the phytoplasma in eggs, nymphs and adults of the first and second generations thereby showing transovarial transmission. We have also shown by in situ PCR that phytoplasmas were widely distributed throughout the body of the insect. RFLP and sequencing showed that the same phytoplasma was present in the vector and in the plant. Together, these data point to the leafhopper M. hiroglyphicus as the reservoir of phytoplasma that cause sugarcane white leaf disease.

Record 35
AU: Setamou,-M.; Bernal,-J.S.; Legaspi,-J.C.; Mirkov,-T.E.; Legaspi,-B.C.-Jr.
TI: Evaluation of lectin-expressing transgenic sugarcane against stalkborers (Lepidoptera: Pyralidae): effects on life history parameters.
SO: J-econ-entomol. Lanham, Md. : Entomological Society of America, 1908-. Apr 2002. v. 95 (2) p. 469-477.
AB: The impact of snowdrop lectin (Galanthus nivalis agglutinin, GNA) expressed in transgenic sugarcane on life history parameters of Mexican rice borer [Eoreuma loftini (Dyar)] and sugarcane borer [Diatraea saccharalis (F.)] (both Lepidoptera: Pyralidae) was evaluated. In the laboratory, lyophilized sugarcane leaf sheath tissue was incorporated in a meridic diet resulting in a GNA concentration of 0.47% of total protein, and used for insect bioassays over two successive generations. Deleterious effects of GNA were not observed on survival, weight, and developmental periods of larvae and pupae, nor on adult fecundity and egg viability of D. saccharalis. Moreover, in the first generation, addition of transgenic sugarcane tissue to the diet enhanced larval growth in D. saccharalis resulting in higher larval and pupal weight compared

with diet with nontransgenic sugarcane, but this effect was not observed in the second generation. In contrast, larval survival, percent adult emergence, and female fecundity of E. loftini were significantly reduced when fed transgenic sugarcane diet compared with nontransgenic sugarcane diet. In addition, a substantial reduction of female pupal weight of E. loftini was observed in the second generation. For both species, the only consistent effect of GNA in both generations was a reduction in adult female longevity. Life table parameters showed that GNA at the level found in the transgenic diet negatively affected development and reproduction of E. loftini, whereas it had a nil to positive effect on development and reproduction of D. saccharalis.

Record 36
AU: Tai,-P.Y.P.; Miller,-J.D.
TI: Germplasm diversity among four sugarcane species for sugar composition.
SO: Crop-sci. Madison, Wis. : Crop Science Society of America, 1961-. May/June 2002. v. 42 (3) p. 958-964.
AB: The characterization of the World Collection of Sugarcane is needed for effective preservation and use of genetic resources. The objective of this study was to evaluate sugarcane germplasm from field plots by means of an analysis of sugar composition of four Saccharum species (32 S. officinarum L., 30 S. barberi Jesw., 27 S. robustum Brandes and Jeswiet ex Grassl, and 28 S. sinense Roxb.) plus four commercial cultivars. Stalks were cut from all clones of 1-yr-old plant cane and 11 clones from the first ratoon crop were crushed for juice analysis by conventional (Brix-pol) and high performance liquid chromatography (HPLC) methods. Most juice quality measurements showed a significant interaction between clones and crop cycles. The frequency distribution of sucrose content of the plant cane for S. officinarum, S. barberi, and S. robustum showed a marked skewness toward high sucrose content. The four species, however, showed different trends based on sugar content: S. officinarum clones were distributed in the plot of low glucose and fructose contents with sucrose content extending from low to high; S. sinense clones were distributed in the plot from low sucrose and low glucose-fructose to high sucrose and high glucose-fructose; and S. barberi and S. robustum clones were distributed in the plot between the former two species. Cluster analysis also indicated the heterogeneity within and among these four species. Information on sugar composition should assist curators in separating clones in their collection and breeders in selecting superior clones for use in their breeding programs.

Record 37
AU: Sadder,-M.T.; Weber,-G.
TI: Comparison between genetic and physical maps in Zea mays L. of molecular markers linked to resistance against Diatraea spp.
SO: Theor-appl-genet. Berlin; Springer-Verlag. May 2002. v. 104 (6/7) p. 908-915.
AB: In the pachytene stage, chromosomes are maximally extended and can easily be distinguished. Therefore, by applying fluorescence in situ hybridization (FISH) to pachytene chromosomes, it is possible to generate a high-resolution physical map of chromosome 9 in maize. Molecular markers (umc105a on the short arm of chromosome 9, csu145a on the long arm) were used that flank quantitative trait loci (QTL) for sugarcane borer (SCB) and southwestern corn borer (SWCB) resistance. As reference markers, a centromere-specific probe (CentC) and a knob-specific probe (pZm4-21) were utilized. Two fluorescent dyes with four probes were used to physically position these markers. Signals of repetitive DNA sequences in cosmid probes were suppressed by chromosome in situ suppression (CISS) hybridization. FISH signals were strong and reproducible for all probes. We measured the distances in micrometers for four subchromosomal regions and estimated the corresponding number of base pairs. The physical locations of the markers were compared on mitotic metaphase and pachytene chromosomes to the genetic map of chromosome 9. Genetic analysis positioned the two markers for SCB resistance in a central interval representing approximately 33.7% of the genetic length. However, the physical distance between these probes was determined to

encompass about 70% of the physical length of chromosome 9. The two markers were located at distal positions on opposite arms of chromosome 9. Physical maps provide valuable information for gene isolation and understanding recombination.

Record 38
AU: Gervasio,-A.P.G.; Borges,-E.P.; Zagatto,-E.A.G.; Reis,-B.F.; Lapa,-R.A.S.; Lima,-J.L.F.C.
TI: Potentiometric flow injection determination of glycerol in distilled spirits.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Jan 2, 2002. v. 50 (1) p. 74-77.
AB: A single-line flow injection system including a tubular periodate-selective electrode without inner reference solution is proposed for glycerol determination in distilled spirits, based on oxidation of this polyol by periodate. Interferences due to 5.0 mg L(-1) Cu, 5000 mg L(-1) sucrose, and 3000 mg L(-1) fructose plus glucose were investigated. The procedure is characterized by a linear response for 20-500 mg L(-1) glycerol ($r > 0.9999$, $n = 7$), a relative standard deviation of results of < 0.03, and an analytical throughput of 30 determinations per hour. Accuracy was assessed by applying the procedure to distilled spirits of sugarcane and grape already analyzed by HPLC; in addition, recoveries within 96 and 120% were obtained.

Record 39
AU: Rice,-R.W.; Izuno,-F.T.; Garcia,-R.M.
TI: Phosphorus load reductions under best management practices for sugarcane cropping systems in the Everglades agricultural area.
SO: Agric-water-manage. Amsterdam, The Netherlands : Elsevier Science B.V. July 2, 2002. v. 56 (1) p. 17-39.

Record 40
AU: Eggleston,-G.; Monge,-A.; Pepperman,-A.
TI: Preheating and incubation of cane juice prior to liming: a comparison of intermediate and cold lime clarification.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Jan 30, 2002. v. 50 (3) p. 484-490.
AB: In the U.S., cold lime clarification remains the clarification process of choice in raw sugar manufacturing. A comparative study of cold vs intermediate lime clarification was undertaken at a factory that operated intermediate liming (approximately 30% mixed juice (MJ) of pH 5.2 +/- 0.3 was preheated to 87-93 degrees C to help maintain clean limed juice heaters, incubated at approximately 54 degrees C, and then limed) but still had the pipes to revert to cold liming (MJ incubated and limed at approximately 40 degrees C) for this study. Hourly samples were collected over a 6 h sampling period across cold and intermediate clarification processes on two consecutive days, respectively, and this was repeated three times across the 1999 grinding season. A total of 1.57% less sucrose was lost to inversion reactions across intermediate rather than cold liming. In intermediate liming, which required approximately 4.6% less lime, preheating of only 30% of the MJ markedly removed color (-29%), dextran (-10%), and starch (-24%) and caused large flocs to form that settled faster in the clarifiers. Faster settling led to an impressive 4.6% (season average) more turbidity removal across the clarifiers in intermediate rather than cold liming. Intermediate clarified juice (CJ) turbidity (season average 2028 ICU +/- 675) was approximately half of cold CJ turbidity (average 3952 ICU +/- 1450) with over 2-fold more CJ turbidity control. Subsequent turbidity values and control were significantly improved in the final evaporator syrup samples too. For both processes, juice incubation caused approximately 10% color removal, but this was offset by color formation on liming, because of the.
alkaline degradation of invert; however, overall, more color was removed than formed in intermediate liming. Starch was reduced in the incubator tank, for both processes, because added filtrate reduced the acidity enabling natural diastase from the cane to degrade starch. Some dextran occasionally formed in

the incubator tank, in both processes. Summed across measured parameters, intermediate liming appears to offer several advantages over cold liming.

Record 41
AU: Glaz,-B.; Edme,-S.J.; Miller,-J.D.; Milligan,-S.B.; Holder,-D.G.
TI: Sugarcane cultivar response to high summer water tables in the Everglades.
SO: Agron-j. Madison, Wis. : American Society of Agronomy, [1949-. May/June 2002. v. 94 (3) p. 624-629.
AB: Sugarcane (interspecific hybrids of Saccharum spp.) in the Everglades Agricultural Area (EAA) in Florida is frequently subjected to periods of higher-than-desired water levels. This study was conducted to evaluate yields of nine sugarcane cultivars subjected to two higher-than-conventional water tables in the EAA during the summer rainy season from the plant cane through the second-ratoon annual crop cycles. Field experiments were planted in February 1997 and January 1998. During the summers from 1997 through 1999, we sought to maintain water <15 cm below the soil surface (BSS) in the wetter field and from 15 to 38 cm BSS in the drier field. Water tables for sugarcane in the EAA fluctuate from 40 to 95 cm BSS. Targeted water levels were achieved for 40 d in 1997, 104 d in 1998, and 96 d in 1999 in the wetter field and for 35 d in 1997, 96 d in 1998, and 82 d in 1999 in the drier field. The mean sugar per hectare in the wetter field was 91.7% that of the drier field. Yields of 'Canal Point (CP) 72-2086' and 'CP 82-1172' were not affected by water table. Cultivar CP 85-1308 had higher yields in the wetter field in two of five harvests. Sugar per hectare of 'CP 80-1743' was reduced by 25.1% in the wetter field. The variability among commercial cultivars to maintain yields at high water tables suggests that routine screening of promising sugarcane genotypes under high water tables would help identify more cultivars that maintain high yields in wetter conditions in the EAA.

Record 42
AU: Gomes,-F.C.O.; Pataro,-C.; Guerra,-J.B.; Neves,-M.J.; Correa,-S.R.; Moreira,-E.S.A.; Rosa,-C.A.
TI: Physiological diversity and trehalose accumulation in Schizosaccharomyces pombe strains isolated from spontaneous fermentations during the production of the artisanal Brazilian cachaca.
SO: Can-j-microbiol. Ottawa : National Research Council of Canada. May 2002. v. 48 (5) p. 399-406.

Record 43
AU: Viswanathan,-R.; Samiyappan,-R.
TI: Induced systemic resistance by fluorescent pseudomonads against red rot disease of sugarcane caused by Colletotrichum falcatum.
SO: Crop-prot. Oxford, U.K. : Elsevier Science Ltd. Feb 2002. v. 21 (1) p. 1-10.
AB: Certain strains of fluorescent Pseudomonas spp. were studied for their plant growth promoting attributes and induced systemic resistance (ISR) against red rot pathogen Colletotrichum falcatum Went in sugarcane. The fluorescent pseudomonad (FPs) strains were applied three times in the field, initially as a sett treatment while planting and two soil applications in the field using talc-based formulations. The ISR effect in the treated canes was assessed by artificial inoculation of the pathogen in the cane stalks. Some Pseudomonas strains significantly reduced red rot disease intensity in the sugarcane stalks. The Pseudomonas-mediated ISR was significantly higher in the disease susceptible cultivars than in the moderately resistant and moderately susceptible cultivars. When five Pseudomonas strains were evaluated for their efficacy against the disease in an endemic location, isolates CHAO, EP1 and Pf1 significantly reduced disease incidence. The tested strains significantly improved vegetative sett germination and crop growth in the field. Less pathogen induced invertase enzyme activity was recorded in cane tissues from bacteria treated stalks, and higher juice characters viz. sucrose per cent and sugar yield as compared to the untreated stalk tissues, after pathogen inoculation. The efficacy of certain

Pseudomonas strains against red rot pathogen, enhanced the yield of cane and sugar and this suggests that these bacterial strains may have a role to play in the management of red rot disease in sugarcane.

Record 44
AU: Adamski,-D.; Brown,-J.W.; Villanueva-Jimenez,-A.; Mendez-Lopez,-M.
TI: First records of the sugarcane pest, Blastobasis graminea Adamski (Lepidoptera: Coleophoridae: Blastobasinae), from Mexico and Central America.
SO: Proc-Entomol-Soc-Wash. Washington [D.C.] : The Society , 1986-. July 2002. v. 104 (3) p. 812-813.

Record 45
AU: Chen,-C.M.; Hsu,-L.C.Y.
TI: Effects of treatment methods on relative reactivity of biomass extracts toward formaldehyde.
SO: For-prod-j. Madison, Wis. : Forest Products Society. Feb 2002. v. 52 (2) p. 92-99.
AB: Four biomass materials--rice (Oryza sativa L.) hull, sugarcane (Saccharum officimarum L.) bagasse, and Taiwan acacia (Acacia confusa Merr.) bark and foliage--were extracted with various concentrations of acid and base solutions at 95 degrees C and an elevated temperature of either 135 degrees or 175 degrees C. These extracts were reacted with 44 percent formalin or paraformaldehyde for 3 hours at 60 degrees and 80 degrees C, respectively, to investigate their reactivity toward formaldehyde. The free formaldehyde in the reaction mixtures was quantitated by hydroxylamine hydrochloride titration to an end point of pH 4. Extraction temperature, reaction temperature, acid or base solution of treatment, and type of biomass material were found to considerably influence the reactivity of the extracts toward formaldehyde. With respect to acacia barks, rice hull, and sugarcane bagasse, the optimum alkaline extract condition for reaction with formaldehyde was extracted with a 15 percent sodium hydroxide solution at 95 degrees C for 6 hours. For acacia foliage, the optimum results were achieved by extraction at 135 degrees C for 3.5 hours. However, biomass materials pre-treated with an acid solution prior to alkaline extraction enhanced reactivity toward formaldehyde and reduced the amount of base required in extraction and digestion of biomass materials.

Record 46
AU: Rabenstein,-F.; Seifers,-D.L.; Schubert,-J.; French,-R.; Stenger,-D.C.
TI: Phylogenetic relationships, strain diversity and biogeography of tritimoviruses.
SO: J-gen-virol. Reading : Society for General Microbiology. Apr 2002. v. 83 (pt.4) p. 895-906.
AB: North American and Eurasian isolates of Wheat streak mosaic virus (WSMV; genus Tritimovirus) and Oat necrotic mottle virus (ONMV; genus Rymovirus) were examined. Nine WSMV isolates differentially infected oat, barley, inbred maize line SDp2 and sorghum line KS56. The WSMV isolates clustered into groups based on phylogenetic analyses of the capsid protein (CP) cistron and flanking regions. WSMV isolates from the United States (US) and Turkey were closely related, suggesting recent movement between continents. Although more divergent, WSMV from Iran (WSMV-I) also shared a most recent common ancestor with the US and Turkish isolates. Another group of WSMV isolates from central Europe and Russia may represent a distinct Eurasian population. Complete genome sequences of WSMV from the Czech Republic (WSMV-CZ) and Turkey (WSMV-TK1) were determined and comparisons based on complete sequences yielded relationships similar to those based on partial sequences. ONMV-Pp recovered from blue grass (Poa pratensis L.) in Germany displayed the same narrow host range as ONMV-Type from Canada. Western blots revealed a heterologous relationship among CP of WSMV and ONMV. Phylogenetic analyses of the capsid protein cistron and flanking genomic regions indicated that WSMV and ONMV are related species sharing 74.2-76.2% (nucleotide) and 79.2-81.0% (amino acid) identity. Thus, ONMV should be removed from the genus Rymovirus and designated a definitive member of the genus

Tritimovirus. Phylogenetic analyses further suggest that Sugarcane streak mosaic virus is not a tritimovirus, and may represent a new genus within the family Potyviridae.

Record 47
AU: Morales,-F.J.; Lozano,-I.; Sedano,-R.; Castano,-M.; Arroyave,-J.
TI: Partial characterization of a potyvirus infecting African oil palm in South America.
SO: Phytopath-Z. Berlin : Blackwell Wissenschafts-Verlag GmbH. May 2002. v. 150 (4/5) p. 297-301.

Record 48
AU: Ng,-C.; Losso,-J.N.; Marshall,-W.E.; Rao,-R.M.
TI: Physical and chemical properties of selected agricultural byproduct-based activated carbons and their ability to adsorb geosmin.
SO: Bioresour-technol. Oxford, U.K. : Elsevier Science Limited. Sept 2002. v. 84 (2) p. 177-185.
AB: The objectives of this study were to evaluate selected physical and chemical properties of agricultural byproduct-based activated carbons made from pecan shells and sugarcane bagasse, and compare those properties to a commercial coal-based activated carbon as well as to compare the adsorption efficiency of these carbons for geosmin. Comparison of the physical and chemical properties of pecan shell- and bagasse-based carbons to the commercial carbon, Calgon Filtrasorb 400, showed that pecan shell carbon, but not the bagasse carbon, compared favorably to Filtrasorb 400, especially in terms of surface area, bulk density, ash and attrition. A carbon dosage study done in a model system showed the amount of geosmin adsorbed to be greater for Filtrasorb 400 and the bagasse-based carbon at low carbon concentrations than for the pecan shell carbons, but geosmin adsorption was similar in all carbons at higher carbon dosages. Application of the Freundlich isotherm model to the adsorption data showed that carbons made by steam activation of pecan shells or sugarcane bagasse had geosmin adsorption characteristics most like those of the commercial carbon. In terms of physical, chemical and adsorptive properties, steam-activated pecan shell carbon most resembled the commercial carbon and has the potential to replace Filtrasorb 400 in applications involving removal of geosmin from aqueous environments.

Record 49
AU: Vega-Estrada,-J.; Flores-Cotera,-L.B.; Santiago,-A.; Magana-Plaza,-I.; Montes-Horcasitas,-C.
TI: Draw-fill batch culture mode for production of xylanases by Cellulomonas flavigena on sugar cane bagasse.
SO: Appl-microbiol-biotechnol. Berlin, Germany : Springer Verlag. Mar 2002. v. 58 (4) p. 435-438.
AB: Draw-fill culture was evaluated as a method for xylanase production by Cellulomonas flavigena on sugar cane bagasse. Specific xylanase activity and volumetric xylanase activities were measured by harvesting 50%, 55%, 60% and 70% of fermented broth at the end of each subculture. Maximum specific (64 IU mg(-1) protein) and volumetric (166 IU ml(-1)) xylanase activities were obtained by harvesting 50-55% of broth. Values were 3.4 and 3.8 times greater than those obtained in batch cultures carried out under the same conditions. Enzyme productivity of 4.2 IU ml(-1) h(-1) was significantly greater than that obtained in continuous cultures (2.4 IU ml(-1) h(-1)) ($P<0.05$).

Record 50
AU: Orlando,-U.S.; Baes,-A.U.; Nishijima,-W.; Okada,-M.
TI: A new procedure to produce lignocellulosic anion exchangers from agricultural waste materials.
SO: Bioresour-technol. Oxford, U.K. : Elsevier Science Limited. July 2002. v. 83 (3) p. 195-198.

AB: Two lignocellulosic agricultural waste materials (LCM), sugarcane bagasse (BG) and rice hull (RH), were converted into weak-base anion exchanger and evaluated for their exchanger capacity for nitrate. Pure cellulose (PC) and pure alkaline lignin (PL) were also used as reference materials to elucidate possible reactivity in LCM. Epoxy and amino groups were introduced into BG, RH, PC and PL substrates after the reaction with epichlorohydrin and dimethylamine in the presence of pyridine and an organic solvent N,N-dimethylformamide (DMF). Amino group incorporation into cellulose decreased with the presence of water in the reaction mixture and increased with the reaction time and presence of a catalyst (pyridine). The highest maximum nitrate exchange capacity (Qmax) and yields of the prepared exchangers was obtained from PL (1.8 mmol g-1 and 412.5%), followed by BG (1.41 mmol g-1 and 300%), PC (1.34 mmol g-1 and 166%) and RH (1.32 mmol g-1 and 180%). The proposed synthetic procedure was effective in modifying PL, PC and LCM chemically resulting in a higher yield and nitrate removal capacity.

Record 51
AU: Kim,-S.B.; Lee,-Y.Y.
TI: Diffusion of sulfuric acid within lignocellulosic biomass particles and its impact on dilute-acid pretreatment.
SO: Bioresour-technol. Oxford, U.K. : Elsevier Science Limited. June 2002. v. 83 (2) p. 165-171.
AB: Intra-particle diffusion of sulfuric acid into sugarcane bagasse, corn stover, rice straw and yellow poplar was investigated to determine the effective diffusivity of sulfuric acid within the porous biomass structure. Diffusion experiments were conducted over 25-75 degrees C for two different biomass sizes using dynamic diffusion test cells. Diffusivities of sulfuric acid in agricultural residues were significantly higher than those of hard wood. Diffusivity data for each biomass were fitted into the Arrhenius equation for extrapolation to higher temperatures. The diffusivity data were subsequently incorporated into a theoretical model to determine acid profile within the biomass matrix. The modeling results indicate that intra-particle diffusion of acid influences the rate of dilute-acid pretreatment if unground biomass feedstock is used under normal pretreatment conditions. A criterion was set up to determine the critical biomass size at which the intra-particle acid diffusion becomes a rate-influencing factor for a given pretreatment condition.

Record 52
AU: Sene,-L.; Converti,-A.; Felipe,-M.G.A.; Zilli,-M.
TI: Sugarcane bagasse as alternative packing material for biofiltration of benzene polluted gaseous streams: a preliminary study.
SO: Bioresour-technol. Oxford, U.K. : Elsevier Science Limited. June 2002. v. 83 (2) p. 153-157.
AB: Removal of benzene vapor from gaseous streams was studied in two identically sized lab-scale biofiltration columns: one filled with a mixture of raw sugarcane bagasse and glass beads, and the other one packed with a mixture of ground sugarcane bagasse and glass beads, in the same volume ratio, as filter materials. Separate series of continuous tests were performed, in parallel, under the same operating conditions (inlet benzene concentration of 10.0, 20.0 or 50.0 mg m-3, and superficial gas velocity of 30.6, 61.2 or 122.4 m h-1) in order to evaluate and compare the influence of the packing material characteristics upon the biofilter effectiveness. The maximum elimination capacities obtained, at an inlet load of 6.12 g m-3 h-1 were 3.50 and 3.80 g m-3 packing material h-1 with raw and ground sugarcane bagasse, respectively. This was a preliminary study and the results obtained suggest only a limited application with more work needed.

Record 53
AU: Kumar,-H.; Mihm,-J.A.
TI: Fall armyworm (Lepidoptera: Noctuidae), southwestern corn borer (Lepidoptera: Pyralidae) and sugarcane borer (Lepidoptera: Pyralidae) damage and grain yield of four maize hybrids in relation to four tillage systems.

SO: Crop-prot. Oxford, U.K. : Elsevier Science Ltd. Mar 2002. v. 21 (2) p. 121-128.
AB: Zero tillage can be used tactic to prevent soil erosion and save the top soil for maize production. The effects of tillage systems on the growth, grain yield and resistance of maize hybrids against fall armyworm (FAW), Spodoptera frugiperda (J.E. Smith), sugarcane borer (SCB), Diatraea saccharalis Fabricius and southwestern corn borer (SWCB), Diatraea grandiosella (Dyar) were examined. Four single cross hybrids used were: Ki3 x CML139 (resistant), Ki3 x CML131 (susceptible), CML67 x CML135 (resistant) and Ki3 x CML69 (susceptible). These hybrids were sown on land with conventional tillage, minimum tillage and zero tillage, with and without mulch, in infested and insecticide-protected plots. The resistance/susceptibility of these hybrids against FAW, SCB and SWCB was not altered by the tillage systems. Hybrids planted under zero-tillage + mulch suffered significantly higher damage by SCB and FAW probably because of the retention of moisture in the mulch, which provided optimum conditions for larval feeding. Damage by SWCB on hybrids was the same in different tillage systems because of relatively dry conditions prevailing in the trial. Grain yield of the four hybrids was generally higher in zero-tilled plots in comparison to conventional or minimum tillage systems. These observations support the use of zero-tillage for maize production. Data also show that FAW infestation at 4-5 leaf stage caused grain yield reduction of 10-13% across all tillage systems in the tropical environment but in a subtropical environment, yield reduction was only 1-2%. Grain yield of the hybrids Ki3 x CML139 and Ki3 x CML69 was affected by SCB infestation in all the tillage systems.
but that of CML67 x 135 and Ki3 x CML131 was not affected. SWCB infestation on the hybrid Ki3 x CML131 was less in the infested plots but that of remaining hybrids was the same in infested and protected plots in different tillage systems. Thus, zero-tillage can be used on community-wide basis to prevent the soil erosion and save our dwindled soil resources.

Record 54
AU: Baldani,-J.I.; Reis,-V.M.; Baldani,-V.L.D.; Dobereiner,-J.
TI: A brief story of nitrogen fixation in sugarcane--reasons for success in Brazil.
SO: Funct-plant-biol. Collingwood, VIC, Australia : CSIRO Publishing, c2002-. 2002. v. 29 (4) p. 417-423.

Record 55
AU: Suriadi,-A.; Murray,-R.S.; Grant,-C.D.; Nelson,-P.N.
TI: Structural stability of sodic soils in sugarcane production as influenced by gypsum and molasses.
SO: Aust-j-exp-agric. Collingwood, Vic. Australia : CSIRO Australia. 2002. v. 42 (3) p. 315-322.

Record 56
AU: Comstock,-J.C.; Pena,-M.; Vega,-J.; Fors,-A.; Lockhart,-B.E.L.
TI: Report of sugarcane yellow leaf virus in Ecuador, Guatemala, and Nicaragua.
SO: Plant-dis. [St. Paul, Minn., American Phytopathological Society]. Jan 2002. v. 86 (1) p. 74.

Record 57
AU: Qudsieh,-H.Y.M.; Yusof,-S.; Osman,-A.; Rahman,-R.A.
TI: Effect of maturity on chlorophyll, tannin, color, and polyphenol oxidase (PPO) activity of sugarcane juice (Saccharum officinarum var. yellow cane).
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Mar 13, 2002. v. 50 (6) p. 1615-1618.
AB: A study was conducted to determine the effect of sugarcane maturation on the contents of chlorophyll, tannin, and polyphenol oxidase (PPO) activity and on color change of sugarcane juice. The maturation period of the cane studied was between 3 and 10 months after planting. Different parts of the cane, namely, the top, middle, and bottom portions, were analyzed. Results obtained indicated

that there were significant (P < 0.01) decreases in total chlorophyll a and b and tannin contents during maturity followed by slower rates of decrease of both parameters at the end of maturity stages. There were no significant differences (P > 0.05) in chlorophyll and tannin contents between the middle and bottom portions. On the other hand, the top portion of the stem had a significantly (P < 0.01) lower concentration of chlorophyll and a significantly (P < 0.01) higher content of tannin. PPO activity of sugarcane juice was determined using chlorogenic acid as a substrate. There was a highly significant difference (P < 0.01) in PPO activity of cane juice during maturity. PPO activity was high at the early development stage, decreased during maturation, and then remained relatively constant at the end of maturity. PPO activity was higher when chlorogenic acid was used as substrate. There were also significant differences (P < 0.01) in juice color (L*, a*, b* values) from different portions at different maturity stages. At the early stages, the color of extracted juice was dark, and then the juice turned to yellowish green during maturity. The decrease in green color or the increase in the yellow color could be associated with the decline in chlorophyll. The overall color.
change (deltaE) at maturity indicated that the color of the middle and bottom portions was lower than that of the top portion.

Record 58
AU: Zhang,-B.L.; Billault,-I.; Li,-X.; Mabon,-F.; Remaud,-G.; Martin,-M.L.
TI: Hydrogen isotopic profile in the characterization of sugars. Influence of the metabolic pathway.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Mar 13, 2002. v. 50 (6) p. 1574-1580.
AB: The site-specific natural hydrogen isotope ratios of plant metabolites determined by 2H nuclear magnetic resonance (SNIF-NMR method) can provide powerful criteria for inferring mechanistic and environmental effects on biosynthetic pathways. This work examines the potential of isotopic profiles for the main constituents of carbohydrates, glucose and fructose, to distinguish different photosynthetic pathways. An appropriate analytical strategy, involving three suitable isotopic probes, has been elaborated with a view to measuring simultaneously, in conditions devoid of isotopic perturbations, all (or nearly all) of the carbon-bound hydrogen isotope ratios. It is shown that the type of photosynthetic metabolism, either C3 (sugar beet, orange, and grape), C4 (maize and sugar cane), or CAM (pineapple), and the physiological status of the precursor plant exert strong influences on the deuterium distribution in the sugar molecules. Consequently, this isotopic fingerprint may be a rich source of information for the comparison of mechanisms in metabolic pathways. In addition, it can provide complementary criteria to ethanol as a probe for the origin of sugars.

Record 59
AU: McDonald,-M.P.; Galwey,-N.W.; Colmer,-T.D.
TI: Similarity and diversity in adventitious root anatomy as related to root aeration among a range of wetland and dryland grass species.
SO: Plant-cell-environ. Oxford, U.K. : Blackwell Science Ltd. Mar 2002. v. 25 (3) p. 441-451.
AB: Assessments of the anatomy, porosity and profiles of radial O2 loss from adventitious roots of 10 species in the Poaceae (from four subfamilies) and two species in the Cyperaceae identified a combination of features characteristic of species that inhabit wetland environments. These include a strong barrier to radial O2 loss in the basal regions of the adventitious roots and extensive aerenchyma formation when grown not only in stagnant but also in aerated nutrient solution. Adventitious root porosity was greater for plants grown in stagnant compared with aerated solution, for all 10 species in the Poaceae. The 'wetland root' archetype was best developed in Oryza sativa and the two species of the Cyperaceae, in which the stele contributed less than 5% of the root cross-sectional area, the cells of the inner cortex were packed in a cuboidal arrangement, and aerenchyma was up to 35-52%. Variations of this root structure,

in which the proportional and absolute area of stele was greater, with hexagonal arrangements of cells in the inner cortex and varying in the extent of aerenchyma formation, were present in the other wetland species from the subfamilies Pooideae, Panicoideae and Arundinoideae. Of particular interest were Vetiveria zizanoides and V. filipes, wetland grass species from the tribe Andropogoneae (the same tribe as sorghum, maize and sugarcane), that had a variant of the root anatomy found in rice. The results are promising with regard to enhancing these traits in water-logging intolerant crops.

Record 60
AU: Kawashima,-T.; Sumamal,-W.; Pholsen,-P.; Chaithiang,-R.; Boonpakdee,-W.; Kurihara,-M.; Shibata,-M.
TI: Feeding value of sugarcane stalk for cattle.
SO: Asian-australas-j-anim-sci. Seoul, Korea : AAAP and Korean Society of Animal Nutrition. Jan 2002. v. 15 (1) p. 55-60.

Record 61
AU: Nguyen-Thi-Mui.; Ledin,-I.; Uden,-P.; Dinh-Van-Binh.
TI: The foliage of Flemingia (Flemingia macrophylla) or jackfruit (Artocarpus heterophyllus) as a substitute for a rice bran-soya bean concentrate in the diet of lactating goats.
SO: Asian-australas-j-anim-sci. Seoul, Korea : AAAP and Korean Society of Animal Nutrition. Jan 2002. v. 15 (1) p. 45-54.

Record 62
AU: Zahar,-M.; Benkerroum,-N.; Guerouali,-A.; Laraki,-Y.; El-Yakoubi,-K.
TI: Effect of temperature, anaerobiosis, stirring and salt addition on natural fermentation silage of sardine and sardine wastes in sugarcane molasses.
SO: Bioresour-technol. Oxford, U.K. : Elsevier Science Limited. Apr 2002. v. 82 (2) p. 171-176.
AB: Conditions for a natural fermentation during ensilage of sardines or their waste in sugarcane molasses (60:40 w/w) were evaluated regarding the effect of temperature (15, 25 and 35 degrees C), anaerobiosis (closed vs. open jars), daily stirring of the mixture, and salt addition to the initial mix at 5% (w/w) level. Successful natural fermentation took place in sardine silages incubated at 25 or 35 degrees C in open jars to reach a pH of 4.4 in about 2 and 1 weeks, respectively. For samples kept at 15 degrees C, the pH decline was very slow and pH did not decrease below 5.5 after one month of incubation. At 25 degrees C, the most favorable conditions for silage of sardine waste in cane molasses, as evidenced by the fastest decline in pH to a stable value of about 4.4, were achieved in closed jars and with daily stirring of the mix. The pH 4.4 was reached in one week with an advance of at least 3 days compared to the other conditions (open jars and closed jars without daily stirring). Addition of salt at 5% (w/w) in the mix before incubation inhibited the fermentation process.

Record 63
AU: Viator,-B.J.; Griffin,-J.L.; Ellis,-J.M.
TI: Red morningglory (Ipomoea coccinea) control with sulfentrazone Azafeniden applied at layby in Sugarcane (Saccharum spp.).
SO: Weed-technol. Lawrence, Kans. : The Weed Science Society of America. Jan/Mar 2002. v. 16 (1) p. 142-148.

Record 64
AU: Kawashima,-T.; Sumamal,-W.; Pholsen,-P.; Chaithiang,-R.; Boonpakdee,-W.
TI: The use of sugarcane stalk for feeding lactating cows.
SO: Asian-australas-j-anim-sci. Seoul, Korea : AAAP and Korean Society of Animal Nutrition. Feb 2002. v. 15 (2) p. 205-208.

Record 65
AU: Prange,-J.A.; Gaus,-C.; Papke,-O.; Muller,-J.F.

TI: Investigations into the PCDD contamination of topsoil, river sediments and kaolinite clay in Queensland, Australia.
SO: Chemosphere. Kidlington, Oxford, U.K. : Elsevier Science Ltd. Mar 2002. v. 46 (9/10) p. 1335-1342.

Record 66
AU: Biggs,-I.M.; Stewart,-G.R.; Wilson,-J.R.; Critchley,-C.
TI: N natural abundance studies in Australian commercial sugarcane.
SO: Plant-soil. Dordrecht, The Netherlands : Kluwer Academic Publishers. Jan 2002. v. 238 (1) p. 21-30.

Record 67
AU: Coto,-O.; Cornide,-M.T.; Calvo,-D.; Canales,-E.; D'Hont,-A.; Prada,-F.-de.
TI: Genetic diversity among wild sugarcane germplasm from Laos revealed with markers.
SO: Euphytica. Dordrecht : Kluwer Academic Publishers. 2002. v. 123 (1) p. 121-130.

Record 68
AU: Martinez-Montero,-M.E.; Ojeda,-E.; Espinosa,-A.; Sanchez,-M.; Castillo,-R.; Gonzalez-Arnao,-M.T.; Engelmann,-F.; Lorenzo,-J.C.
TI: Field performance of sugarcane (Saccharum sp.) plants derived from cryopreserved calluses.
SO: Cryo-Letters. Cambridge : Cryo-Letters. Jan/Feb 2002. v. 23 (1) p. 21-26.

Record 69
AU: Carson,-D.L.; Huckett,-B.I.; Botha,-F.C.
TI: Sugarcane ESTs differentially expressed in immature and maturing internodal tissue.
SO: Plant-sci. Oxford, UK : Elsevier Science Ltd. Feb 2002. v. 162 (2) p. 289-300.

Record 70
AU: Alcarde,-A.R.; Walder,-J.M.M.; Horii,-J.
TI: Effect of gamma radiation on physiological parameters of the ethanolic fermentation.
SO: World-j-microbiol-biotechnol. Dordrecht, The Netherlands : Kluwer Academic Publishers. Feb 2002. v. 18 (1) p. 41-47.

Record 71
AU: Elinbaum,-S.; Ferreyra,-H.; Ellenrieder,-G.; Cuevas,-C.
TI: Production of Aspergillus terreus alpha-L-rhamnosidase by solid state fermentation.
SO: Lett-appl-microbiol. Oxford :. 2002. v. 34 (1) p. 67-71.

Record 72
AU: Grivet,-L.; Arruda,-P.
TI: Sugarcane genomics: depicting the complex genome of an important tropical crop.
SO: Curr-opin-plant-biol. Kidlington, Oxford, UK : Elsevier Science Ltd. Apr 2002. v. 5 (2) p. 122-127.

Record 73
AU: Paya,-J.; Monzo,-J.; Borrachero,-M.V.; Diaz-Pinzon,-L.; Ordonez,-L.M.
TI: Sugar-cane bagasse ash (SCBA): studies on its properties for reusing in concrete production.
SO: J-chem-technol-biotechnol. Chichester, West Sussex, U.K. : John Wiley & Sons, Ltd. Mar 2002. v. 77 (3) p. 321-325.

Record 74
AU: Rouland-Lefevre,-C.; Mora,-P.

TI: Control of Ancistrotermes guineensis Silvestri (Termitidae: Macrotermitinae), a pest of sugarcane in Chad.
SO: Int-j-pest-manag. London : Taylor & Francis Ltd., 1993-. Jan/Mar 2002. v. 48 (1) p. 81-86.

Record 75
AU: Qureshi,-S.A.; Madramootoo,-C.A.; Dodds,-G.T.
TI: Evaluation of irrigation schemes for sugarcane in Sindh, Pakistan, using SWAP93.
SO: Agric-water-manage. Amsterdam, The Netherlands : Elsevier Science B.V. Mar 4, 2002. v. 54 (1) p. 37-48.

Record 76
AU: Chabot,-R.; Bouarfa,-S.; Zimmer,-D.; Chaumont,-C.; Duprez,-C.
TI: Sugarcane transpiration with shallow water-table: sap flow measurements and modelling.
SO: Agric-water-manage. Amsterdam, The Netherlands : Elsevier Science B.V. Mar 4, 2002. v. 54 (1) p. 17-36.

Record 77
AU: Laser,-M.; Schulman,-D.; Allen,-S.G.; Lichwa,-J.; Antal,-M.J.-Jr.; Lynd,-L.R.
TI: A comparison of liquid hot water and steam pretreatments of sugar cane bagasse for bioconversion to ethanol.
SO: Bioresour-technol. Oxford, U.K. : Elsevier Science Limited. Jan 2002. v. 81 (1) p. 33-44.
AB: Sugar cane bagasse was pretreated with either liquid hot water (LHW) or steam using the same 25 l reactor. Solids concentration ranged from 1% to 8% for LHW pretreatment and was greater than or equal to 50% for steam pretreatment. Reaction temperature and time ranged from 170 to 230 degrees C and 1 to 46 min, respectively. Key performance metrics included fiber reactivity, xylan recovery, and the extent to which pretreatment hydrolyzate inhibited glucose fermentation. In four cases, LHW pretreatment achieved greater than or equal to 80% conversion by simultaneous saccharification and fermentation (SSF), greater than or equal to 80% xylan recovery, and no hydrolyzate inhibition of glucose fermentation yield. Combined effectiveness was not as good for steam pretreatment due to low xylan recovery. SSF conversion increased and xylan recovery decreased as xylan dissolution increased for both modes. SSF conversion, xylan dissolution, hydrolyzate furfural concentration, and hydrolyzate inhibition increased, while xylan recovery and hydrolyzate pH decreased, as a function of increasing LHW pretreatment solids concentration (1-8%). These results are consistent with the notion that autohydrolysis plays an important, if not exclusive, role in batch hydrothermal pretreatment. Achieving concurrently high (greater than 90%) SSF conversion and xylan recovery will likely require a modified reactor configuration (e.g. continuous percolation or base addition) that better preserves dissolved xylan.

Record 78
AU: Sandell,-Gary.; Agnew,-John.
TI: The harvesting best practice manual for chopper-extractor harvesters.
SO: Indooroopilly, Qld. : Bureau of Sugar Experiment Stations, 2002. xii, 98, 3 p. : ill. (some col.)

Record 79
AU: Telford,-Debra.; McAvoy,-Katie.
TI: Best management practice for sugarcane weevil borer : 1999-2002.
SO: Innisfail, Qld., Australia : Bureau of Sugar Experiment Stations, c2002. 42 leaves : col. ill., col. map

Record 80
AU: Verman,-R.-S.,

Komoditas : TEBU

TI: Sugarcane ratoon management. 1st ed.
SO: Lucknow, U.P. (India) : International Book Distributing Co., 2002. 266 p. : ill. (some col.)

Record 81
TI: Sugar program : 1996 through 2002-crop sugarcane and sugar beets price support program. Electronic ed.
SO: [Washington, D.C.?] : USDA, Farm Service Agency, [1999]

Record 1 of 1 - AGRICOLA 1998-2003/03
AU: Roldan-Carrillo,-T.; Rodriguez-Vazquez,-R.; Diaz-Cervantes,-D.; Vazquez-Torres,-H.; Manzur-Guzman,-A.; Torres-Dominguez,-A.
TI: Starch-based plastic polymer degradation by the white rot fungus Phanerochaete chrysosporium grown on sugarcane bagasse pith: enzyme production.
SO: Bioresour-technol. Oxford, U.K. : Elsevier Science Limited. Jan 2003. v. 86 (1) p. 1-5.
AB: In this study, starch metabolites and enzymes were determined during starch-based plastic polymer biodegradation by the white rot fungus Phanerochaete chrysosporium, grown in sugarcane bagasse pith in tubular reactors. Various metabolites, amylase, ligninase and cellulase production were measured during P. chrysosporium growth on sugarcane bagasse pith with added glucose and starch polymer. On-line respirometric analyses followed during 32 days confirmed the P. chrysosporium capability of growing on sugarcane bagasse pith with starch polymer degradation. Enzyme activity during secondary metabolism increased, and a 70% and 74% starch degradation was reached with and without glucose addition, generating low molecular weight metabolites (e.g.) dextrin, maltotriose, maltose and glucose that were detected by high performance liquid chromatography.