

[Back](#)

(Use Control+F to search for keywords or authors)



Proceedings of the 9th International Working Conference on Stored-Product Protection (Table of Contents)

Full Citation:

I. Lorini, B. Bacaltchuk, H. Beckel, D. Deckers, E. Sundfeld, J. P. dos Santos, J. D. Biagi, J. C. Celaro, L. R. D'A. Faroni, L.de O. F. Bortolini, M. R. Sartori, M. C. Elias, R. N. C. Guedes, R. G. da Fonseca, V. M. Scussel (eds.), Proceedings of the 9th International Working Conference on Stored Product Protection, 15 to 18 October 2006, Campinas, São Paulo, Brazil. Brazilian Post-harvest Association - ABRAPOS, Passo Fundo, RS, Brazil, 2006. (ISBN 8560234004)

PDFs can be downloaded by clicking on the page numbers.

Preface	v
Program	vii
The International Working Conferences on Stored Product Protection	xiv
Proceedings of the International Working Conference on Stored-Product Protection	xvii

Plenary Session 1. Stored Grain Losses	1
Keynotes	1
KPS1-1 - The Economics of IPM in Stored Grain: Why Don't More Grain Handlers Use IPM? – B.D. Adam, T.W. Phillips, P.W. Flinn	3-12
Conference Papers	13
PS1-1 - 6318 - Loss Assessment of on-farm stored maize in semi arid area of Kitui District, Kenya – K. Mutambuki, C.M. Ngatia	15-23
PS1-2 - 6172 - Influence of relative humidity and temperature to the changes in grain moisture in stored wheat and sunflower – M.Volenik, V. Rozman, I. Kalinovic, A. Liska, B. Simic	24-29
PS1-3 - 6207 - Influence of different storage conditions on soybean grain quality – E.R. de Alencar , L.R.D'A. Faroni, A.F. de Lacerda Filho, L.G. Ferreira, M. R.	30-37
PS1-4 - 6208 - Soybean oil quality from grains stored under different conditions – E.R. de Alencar, L.R.D'A. Faroni, L.A. Peternelli, M.T.C. da Silva, S.I. Moreira	38-46
PS1-5 - 6225 - Study on farm grain storage in China – L. Shengbin	47-52
PS1-6 - 6248 - Impact of integrated pest management (IPM) technology on the organizational attitude of stored grain facilities in Brazil – C. De Mori, I. Lorini, A. Ferreira Filho, M.Z. de Miranda	53-58
PS1-7 - 6121 - Influence of storage condition on seed quality of maize, soybean and sunflower – B. Simic, A. Sudaric, I. Liovic, I. Kalinovic, V. Rozman, J. Cosic	59-63
PS1-8 - 6295 - Post-harvesting corn losses indexes in a storage unit: A case study – V.A. Dalpasquale	64-70
PS1-9 - 6272 - Management of air temperature during static drying and storage period and their effects on industrial performance and technological properties of conventional and parboiled rice grains – M.C. Elias, R.S. da Silveira, R.G. Dionello, L.M. Madaloz, A.P.S. Wally, J.A. Silva	71-77
PS1-10 - 6276 - Drying and storage conditions in white oat grains quality – L.C. Gutkoski, D. Simioni, M. de Oliveira, V.L. Meneghetti, L. da C. Oliveira, M.C. Elias	78-84
PS1-11 - 6277 - Effects of resting on drying and storage period on the metabolic defects and industrial	85-92

performance of polished and parboiled rice – M.C. Elias, E. Helbig, V.L. Meneghetti, C.R. Storck, M. Pinno, C.V. Rombaldi

PS1-12 - 6298 - Variation of the nutritional components of stored maize, due to the influence of insects from the *Sitophilus* complex (*S. oryzae* and *S. zeamais*) infestation and resultant fungal development – A.R. Pinto Júnior, L.A. Kozlowski, E. de C. Amantini, R.S. Furiatti

PS1-13 - 6325 - An evaluation of alternative grain processing and storage methods (storage and nutrition value) – J. Jatkauskas, V. Vrotniakiene

[93-98](#)

[99-106](#)

Plenary Session 2. Microorganisms, Mycotoxins, and Other Biological Contaminants

[107](#)

Keynotes

[107](#)

KPS2-1 - Detection and removal of single mycotoxin contaminated maize grains following harvest – D.T. Wicklow, T.C. Pearson

[109-120](#)

Conference Papers

[121](#)

PS2-1 - 6118 - Occurrence of *Fusarium* species isolated from winter wheat and barley grains in Croatia – J. Cosic, D. Jurkovic, K. Vrandecic, B. Simic

[123-127](#)

PS2-2 - 6123 - Mycoflora of stored rice in Portugal – A. Magro, M.O. Carvalho, M.S.M. Bastos, M. Carolino, C.S. Adler, B. Timlick, A. Mexia

[128-134](#)

PS2-3 - 6253 - Study of the incidence of the alcoholic fermentation of contaminated corn with fumonisins in the main components of the obtained vinazas – A. Ricca, M.L. Basílico, M.E. Irurzun, J.C. Basílico

[135-139](#)

PS2-4 - 6255 - Association of Enterococci with stored products and stored-product insects: Medical importance and implications – H.C. Lakshmikantha, Bh. Subramanyam, Z.A. Larson, L. Zurek

[140-149](#)

PS2-5 - 6271 - Intermittency relation in drying and period of storage on industrial quality and the mycotoxins occurrence in corn grains (*Zea mays* L.) – M.C. Elias, I.R. Martins, E. Aosani, D.N. Prestes, A.R.G. Dias, F.S. Sacchet

[150-158](#)

PS2-6 - 6294 - Effects of processing and factory storage on aflatoxin contamination of in-shell Brazil nuts – A.M. Pacheco, V.M. Scussel

[159-164](#)

PS2-7 - 6299 - External and internal characteristics of in-shell Brazil nuts and their relation to aflatoxin contamination analyzed by LC-MS/MS – F. de Mello-Robert, V.M. Scussel

[165-171](#)

PS2-8 - 6300 - Sanitary and technological quality analysis of five brazilian wheat cultivars, in the 2005 cropping season – M.Z. de Miranda, M.I.P.M. Lima, T.E. Bertolin, C.A. Mallmann, M. de Lima, F.S. Vilasbôas, S. Benedetti, A.G. Linhares, P.L. Scheeren, J.C. Ignaczac, C. De Mori, H. Beckel

[172-181](#)

PS2-9 - 6307 - Mycotoxin evaluation in feed for pets using tandem liquid chromatography mass/mass – V.M. Scussel, B.N.E. Giordano, V. Simão, M.W. Rocha, L.F.C. dos Reis, J.J.M. Xavier

[182-188](#)

PS2-10 - 6310 - Lymphocytic Choriomeningitis Virus (LCMV) - A possible health concern for workers associated with stored food – R. Corrigan, L. Mason, W.-T. Tsai, J. Stuart

[189-192](#)

PS2-11 - 6285 - Interaction between pest infestation and fungus in wheat grain at storage facilities – N.M.M. Birck, I. Lorini, V.M. Scussel

[193-197](#)

PS2-12 - 6281 - Fungus and mycotoxins in wheat grain at post harvest – N.M.M. Birck, I. Lorini, V.M. Scussel

[198-205](#)

Plenary Session 3. New Chemicals and Food Residues

[207](#)

Keynotes

[207](#)

KPS3-1 - Opportunities and barriers to the adoption of potential new grain protectants and fumigants – G.J. Daglish

[209-216](#)

KPS3-2 - Advances in integrating insect growth regulators into storage pest management – F.H. Arthur

[217-224](#)

Conference Papers

[225](#)

PS3-1 - 6154 - Fenitrothion and esfenvalerate stability during corn and wheat sample processing – J.A. Vásquez-Castro, G.C. de Baptista, L.R.P. Trevizan, C.D. Gadanhá Jr.

[227-232](#)

PS3-2 - 6324 - An Australian Approach to chemical residue management in grains - Programs and results – I. Reichstein, K. Healy, B. Murray	233-240
PS3-3 - 6135 - Good Laboratory Practice (GLP) - chance and impediment for the registration of new fumigants - Phosphine residues as an example – D. Klementz, G.M. Kroos, C. Reichmuth	241-249
PS3-4 - 6280 - Performance of spinosad as a stored-grain protectant – Bh. Subramanyam	250-257
PS3-5 - 6224 - The influence of post-exposure temperature on the toxicity of Spinosad against adults fo Callosobruchus maculatus Fabricius (Coleoptera: Bruchidae) – K.M. Sadat, P.A. Asghar	258-262
PS3-6 - 6133 - Measuring new fumigants with Dräger-Tubes ® – F. Arnold	263-269
PS3-7 - 6249 - Efficacy of Spinosad and IGR Plus to control the pests Rhyzopertha dominica and Sitophilus zeamais on stored wheat grain – I. Lorini, H. Beckel, S. Schneider	269-273

Plenary Session 4. Pest Resistance to Pesticides and Control Measures [275](#)

Keynotes

KPS4-1 - Resistance to chemical treatments in insect pests of stored grain and its management – P.J. Collins	277-282
--	-------------------------

Conference Papers

PS4-1 - 6213 - Fluctuating asymmetry in pyrethroid-resistant and -susceptible populations of the maize weevil (<i>Sitophilus zeamais</i>) – A.S. Corrêa, J.T. Santos, E.M.G. Cordeiro, R.N.C. Guedes	285-291
PS4-2 - 6211 - Enzyme activity of the energy-metabolism of pyrethroid-resistant and -susceptible populations of the maize weevil (<i>Sitophilus zeamais</i>) – R.A. Araújo, G.H. Ferreira, M.G.A. Oliveira, R.N.C. Guedes	292-298
PS4-3 - 6212 - Deltamethrin-induced behavioral responses of pyrethroid-resistant and -susceptible populations of the maize weevil (<i>Sitophilus zeamais</i>) – N.M.P. Guedes, L.B. Silva, R.N.C. Guedes	299-305
PS4-4 - 6122 - Rapid bioassay for determining the phosphine tolerance – R. Steuerwald, H. Dierks-Lange, S. Schmitt	306-311
PS4-5 - 6128 - Resistance detection of <i>Oryzaephilus surinamensis</i> (L.) (Coleoptera, Silvanidae) to organophosphorous and pyrethroids insecticides – H. Beckel, I. Lorini, S.M.N. Lazzari	312-318
PS4-6 - 6134 - Resistance to Phosphine in <i>Rhyzopertha dominica</i> (F.) (Coleoptera: Bostrichidae) collected from wheat storages in Brazil – I. Lorini, P.J. Collins	319-323
PS4-7 - 6150 - Resistance of <i>Callosobruchus maculatus</i> (Fab.) to Pirimiphos methyl in Three Zones in Nigeria – O.O. Odeyemi, O.A. Gbaje, O. Akeju	324-329
PS4-8 - 6198 - Lethal effects of contact insecticides on <i>Sitophilus granarius</i> originating from different populations after various exposure periods – P. Kljajic, I. Peric	330-337
PS4-9 - 6200 - Effects of several contact insecticides on adults of three <i>Sitophilus</i> species – P. Kljajic, G. Andric, I. Peric	338-343
PS4-10 - 6243 -Phosphine resistance, respiration rate and fitness consequences in <i>Tribolium castaneum</i> (Herbst) (Coleoptera: Tenebrionidae) – M.A.G. Pimentel, L.R.D'A. Faroni, R.N.C. Guedes, A.P. Neto, F.M. Garcia	344-351
PS4-11 - 6129 - RNA investigation of <i>Oryzaephilus surinamensis</i> (L.) (Coleoptera, Silvanidae) resistant and susceptible strains to fenitrothion insecticide – H. Beckel , N.C. Lângaro, I. Lorini, S.M.N. Lazzari	352-358

Plenary Session 5. Biology, Behavior, and Pest Detection on Stored Grain [359](#)

Keynotes

KPS5-1 - Spatial distribution and movement patterns of stored-product insects – J.F. Campbell, G.P. Ching'oma, M.D. Toews, S.B. Ramaswamy	361-370
---	-------------------------

KPS5-2 - Storage arthropod pest detection - current status and future directions – M.E. Wakefield	371-384
---	-------------------------

Conference Papers	385
--------------------------	--

PS5-1 - 6104 - Occurrence of coleoptera and lepidoptera species in rice stores at Calasparra (Murcia , Spain) – M.J. Pascual-Villalobos	387-391
PS5-2 - 3130 - Initial and delayed mortality of <i>Rhyzopertha dominica</i> F. (Col: Bostrichidae) and <i>Tribolium castaneum</i> Herbst (Col: Tenebrionidae) exposed to Silico-Sec® formulation of diatomaceous earth – M. Ziae, M.H. Safaralizadeh, N. Shayesteh	392-399
PS5-3 - 6167 - The effect of some biochemical and technological properties of wheat grain on granary weevil (<i>Sitophilus granarius</i> L.) (Coleoptera: Curculionidae) development – J. Nawrot, J.R. Warchalewski, D. Piasecka-Kwiatkowska, A. Niewiada, M. Gawlak, S.T. Grundas, J. Fornal	400-407
PS5-4 - 6175 - Integrating the Stored Grain Advisor Pro expert system with an automated electronic grain probe trapping system – P.W. Flinn, G.P. Opit, J.E. Throne	408-413
PS5-5 - 6152 - Spatial distribution of food trap catches of <i>Tribolium castaneum</i> , <i>T. confusum</i> and <i>Typhaea stercorea</i> and precision Integrated Pest Management in a semolina mill – P. Trematerra, P. Gentile	414-422
PS5-6 - 6231 - Laboratory studies of insect behaviour and pest control; a neglected interface or different worlds? Examples from studies with <i>Callosobruchus maculatus</i> (F.) (Coleoptera: Bruchidae) – P.F. Credland	423-432
PS5-7 - 6145 - Tracking the origins and feeding habitats of <i>Rhyzopertha dominica</i> (F.) (Coleoptera: Bostrichidae) using elemental markers – R.M. Mahroof, T.W. Phillips	433-440
PS5-8 - 6169 - Behavioural responses of <i>Tribolium confusum</i> Jacquelain du Val (Coleoptera: Tenebrionidae) to flour previously infested or contaminated by <i>Ephestia kuehniella</i> Zeller (Lepidoptera: Pyralidae) semiochemicals – C.G. Athanassiou, N.G. Kavallieratos, S.N. Xyrafidis, P. Trematerra	441-445
PS5-9 - 6305 - Genetic differentiation at the inter- and intra-specific level of stored grain insects using a simple molecular approach (RAPD) – F. Fleurat-Lessard, V. Pronier	446-455
PS5-10 - 6187 -Relationship between density of adult rusty grain beetle, <i>Cryptolestes ferrugineus</i> (Coleoptera: Laemophloeidae) and insector counts in stored wheat at uniform moisture content and small temperature fluctuations – F. Jian, R. Larson	456-462
PS5-11 - 6244 - Population growth and grain loss of <i>Cathartus quadricollis</i> (Guerin-Meneville) (Coleoptera: Silvanidae) in different stored grains – A.P. Neto, M.A.G. Pimentel, L.R.D'A. Faroni, F.M. Garcia, A.H. de Sousa	463-468
PS5-12 - 6185 - Development of <i>Cadra cautella</i> (Walker), <i>Corcyra cephalonica</i> (Stainton), and <i>Plodia interpunctella</i> (Hübner) (Lepidoptera Pyralidae) on <i>Triticum monococcum</i> L., <i>T. dicoccum</i> Schrank ex Schübler, and <i>T. spelta</i> L. – D.P. Locatelli, L. Limonta, M. Stampini	469-475
PS5-13 - 6304 - Acoustic detection and automatic identification of insect stages activity in grain bulks by noise spectra processing through classification algorithms – F. Fleurat-Lessard, B. Tomasini, L. Kostine, B. Fuzeau	476-486
PS5-14 - 6202 - Correlation between <i>Plodia interpunctella</i> hübner (Lepidoptera, Pyralidae) males captured with a wing trap and the real density of moth's population – S. Savoldelli	487-491

Plenary Session 6. Fumigation and Control Atmosphere

493

Keynotes

493

KPS6-1 - New global challenges to the use of gaseous treatments in stored products – S. Navarro

[495-509](#)

KPS6-2 - The return of the fumigants – P.J.F. Ducom

[510-516](#)

Conference Papers

517

PS6-1 - 6173 - Factors affecting the efficacy of sulphuryl fluoride as a fumigant – C.H. Bell

[519-526](#)

PS6-2 - 6146 - Large scale grain fumigations using pure cylinderized phosphine together with the HORN DILUPHOS SYSTEM – P. Horn, F. Horn

[527-533](#)

PS6-3 - 6147 - Advances in post harvest fresh fruit fumigation using pure cylindered phosphine together with the HORN DILUPHOS SYSTEM – F. Horn, P. Horn

[534-541](#)

PS6-4 - 6155 - Real-time monitoring of a flour mill fumigation with sulfuryl fluoride – W. Chayaprasert, D.E. Maier, K.E. Ileleji, J.Y. Murthy	542-550
PS6-5 - 6156 - Modeling the structural fumigation of flour mills and food processing facilities – W. Chayaprasert, D.E. Maier, K.E. Ileleji, J.Y. Murthy	551-558
PS6-6 - 6166 - The degesch phosphine generator - a fast phosphine application – R. Steuerwald, H. Dierks-Lange, S. Schmitt	559-563
PS6-7 - 6196 - The speedbox - an innovative application device for the degesch plates – G. Jakob, H. Dierks-Lange, F.W. Heck, S. Schmitt	564-566
PS6-8 - 6197 - Phosphine - the natural cycle – S. Schmitt	567-569
PS6-9 - 6226 - Evaluation of large modern warehouse designed and constructed for application of carbon dioxide – G. Daolin, L. Shengbin, G. Ying, D. Chaoming, Y. Zhao, D. Jianwu, T. Jie, M. Honglin, H. Qile, L. Guiyong, M. Zhongping, L. Liguang	570-577
PS6-10 - 6229 - Response of eleven stored product pest species to modified atmospheres with high carbon dioxide concentrations – J. Riudavets, C. Castañé, O. Alomar, M.J. Pons, R. Gabarra	578-585
PS6-11 - 6251 - Detailed and reduced form modeling of structural fumigation in food processing facilities – V. Ambatipudi, J.Y. Murthy, D.E. Maier	586-594
PS6-12 - 6311 - A Preliminary report of sulfuryl fluoride and methyl bromide fumigation of flour mills – W.-T. Tsai, L.J. Mason, K.E. Ileleji	595-599
PS6-13 - 6319 - Electively applying phosphine fumigation technology in Tianjin area of China – J. Lv, S. Jia, C. Liu, Q. Zhu, Q. Liu, Z. Zhang, S. Liu, J. Zhang	600-604
PS6-14 - 6331 - Evaluation of oil extracted from corn grains ozonized at different levels of grain mass temperature – A. de M. Pereira, L.R. D'A. Faroni, A.H. de Sousa, J.L.P. Marco, M.T.C. da Silva	605-611
PS6-15 - 6184 - FumicoverT An effort in reducing losses in stored grains at farm levels – A.V. Dhuri	612-617
PS6-16 - 6164 - VAPORMATE (16.7 wt% EtF in CO ₂): dispensing techniques – R. Ryan, N. Grant, J. Nicolson, D. Beven, A. Harvey	618-623
PS6-17 - 6165 - SterigasT and CosmicT: update on proposed new fumigants – R. Ryan, N. Grant, J. Nicolson, D. Beven, A. Harvey	624-629
PS6-18 - 6313 - Propylene oxide as a potential quarantine fumigant for insect disinfestation of nuts – A.A. Isikber, S. Navarro, S. Finkelman, M. Rindner, R. Dias	630-634
PS6-19 - 6259 - Commercial performance and global development status of ProFume® gas fumigant – S. Prabhakaran	635-641
PS6-20 - 6221 - Updates on the global application of Eco 2 Fume and Vaporph 3 OS ® phosphine fumigants – R. Cavasin, M. DePalo, J. Tumambing	642-650

Plenary Session 7. Alternative Methods to Chemical Control	651
Keynotes	651
KPS7-1 - Alternatives to chemical control of stored-product insects in temperate regions – P. Fields	653-662
KPS7-2 - Alternatives to chemical control of stored-product insects on small farms in the tropics – J.P. Santos	663-674
Conference Papers	675
PS7-1 - 6308 - Efficacy of a cellulose-based product in controlling house mouse (<i>Mus musculus</i>) in agricultural storage facilities – G. Jokic, M. Vuksa, S. Đedovic	677-680
PS7-2 - 6301 - Susceptibility of three species of <i>Sitophilus</i> to diatomaceous earth – Z. Korunic, P. Fields	681-686
PS7-3 - 6141 - Bioactivity of 1,8 - cineole, camphor and carvacrol against rusty grain beetle (<i>Cryptolestes ferrugineus</i> Steph.) on stored wheat – V. Rozman, I. Kalinovic, A. Liska	687-694
PS7-4 - 6180 Combination of diatomaceous earth and temperature to control <i>Sitophilus zeamais</i> (Coleoptera: Curculionidae) in pearl millet seeds – F.C. Ceruti, S.M.N. Lazzari, F.A. Lazzari	695-700

PS7-5 - 6252 - Response of <i>Sitophilus zeamais</i> (Coleoptera: Curculionidae) to different volatiles of wheat grains – F.C. Ceruti, A.R. Pinto Júnior, R.I.N. de Carvalho, E. Vianna	701-705
PS7-6 - 6328 - Influence of grain mass temperature on ozone toxicity to <i>Sitophilus zeamais</i> (Coleoptera: Curculionidae) – A.H. de Sousa, L.R.D'A. Faroni, A. de M. Pereira, F. da S. Cardoso, E. Heberle	706-710
PS7-7 - 6330 - Preference of <i>Acarophenax lacunatus</i> (Cross & Krantz) (Prostigmata: Acarophenacidae) for eggs of different hosts – C.R.F. de Oliveira, L.R.D'A. Faroni, A.H. de Sousa, F.M. Garcia, L. da S. e Souza	711-718
PS7-8 - 6119 - Development and applications of the hermetic storage technology – P. Villers, T. de Bruin, S. Navarro	719-729
PS7-9 - 6116 - New trends in the use of diatomaceous earth against stored-grain insects – C.G. Athanassiou, Z. Korunic, N.G. Kavallieratos, G.G. Peteinatos, M.C. Boukouvala , N.H. Mikeli	730-740
PS7-10 - 6148 - Efficacy of heat against the mediterranean flour moth <i>Ephestia kuehniella</i> and methods to test the efficacy of a treatment in a flour mill – C.S. Adler	741-746
PS7-11 - 6151 - Integrated Pest Management in Italian pasta factories – P. Trematerra, L. Süss	747-753
PS7-12 - 6158 Modeling non-uniform airflow distribution in large grain silos using Fluent – D. Garg, D.E. Maier	754-762
PS7-13 - 6161 - Physical exclusion measures for prevention of pest entry into stored grain silos – D.E. Maier, R. Hulasare, D.J.P. Moog	763-772
PS7-14 - 6162 - Ozonation as a non-chemical stored product protection technology – D.E. Maier, R. Hulasare, C.A. Campabadal, C.P. Woloshuk, L. Mason	773-777
PS7-15 - 6163 - Effect of temperature management on confined populations of red flour beetle and maize weevil in stored maize - Five year summary of pilot bin trials – D.E. Maier, R. Hulasare, D.J.P. Moog, K.E. Illeleji, C.P. Woloshuk, L.J. Mason	778-788
PS7-16 - 6168 - Efficacy of spinosad for insect management in farm stored maize – D.E. Maier, K.E. Illeleji, D. Szabela	789-796
PS7-17 - 6189 - Spatial effects on competition between the larval parasitoids <i>Habrobracon hebetor</i> (Say) (Hymenoptera: Braconidae) and <i>Venturia canescens</i> (Gravenhorst) (Hymenoptera: Ichneumonidae) parasitising the Mediterranean flour moth, <i>Ephestia kuehnie</i> – A. Paust, C. Reichmuth, C. Büttner, S. Prozell, C.S. Adler, M. Schöller	797-803
PS7-18 - 6195 - Control of <i>Zabrotes subfasciatus</i> (Boheman) (Coleoptera, Chrysomelidae, Bruchinae) in <i>Phaseolus vulgaris</i> Linnaeus, using diatomaceous earth under different temperature – F.N. Lazzari, C.S. Ribeiro-Costa	804-810
PS7-19 - 6203 - Evaluation of contact activities of plant extracts against <i>Sitophilus zeamais motschulsky</i> (Coleoptera: Curculionidae) – M.R. Potenza, J. Justi Junior, J.N. Alves	811-815
PS7-20 - 6204 - Effects of diatomaceous earth used to control stored grain pests on technological, physical and cooking characteristics of parboiled and conventionally processed rice – A. Morás, J. Gelain, C.M. Romano, I. Lorini, M.A. Gualarte, M.C. Elias	816-822
PS7-21 - 6205 - Diatomaceous earth and propionic acid to control <i>Sitophilus oryzae</i> and <i>Oryzaephilus surinamensis</i> rice stored grain pests – A. Morás, F.M. Pereira, M. de Oliveira, I. Lorini, M.A. Schirmer, M.C. Elias	823-828
PS7-22 - 6217 - The study of behavioral response and control effectiveness of the <i>Sitophilus zeamais</i> L. (Coleoptera: Curculionidae) and different concentrations of essential oils – A.R. Pinto Júnior, R.I.N. de Carvalho, S.P. Netto, F.C. Ceruti, A.P. Tavares, L. Guerreiro, A.K.N. Santos	829-834
PS7-23 - 6238 - The effect of sub-zero temperature on the mortality of <i>Ephestia elutella</i> (Hübner) – D.A. Collins, S.T. Conyers, S.K. Cardwell	835-842
PS7-24 - 6239 - The effect of high temperature on the mortality of <i>Lasioderma serricorne</i> (F.) – S.T. Conyers, D.A. Collins	843-848
PS7-25 - 6240 - Efficacy of a Chinese diatomaceous earth and purpose-built sprayer for control of stored grain insect pests in an empty warehouse – Y. Cao, Y. Li, P. Wang, L. Wei, J. Su	849-854

PS7-26 - 6247 - Factors affecting storage insect susceptibility to the entomopathogenic fungus Beauveria bassiana – M.E. Wakefield	855-862
PS7-27 - 6250 - Efficacy of "diatomaceous earth" to control the main stored grain pests – I. Lorini, H. Beckel	863-867
PS7-28 - 6266 - Comparative insecticidal efficacy of five raw African diatomaceous earths against three tropical stored grain Coleopteran pests: <i>Sitophilus zeamais</i> , <i>Tribolium castaneum</i> and <i>Rhyzopertha dominica</i> – B.M. Mvumi, T.E. Stathers, V. Kaparadza, F. Mukoyi, P. Masiwa, P. Jowah, W. Riwa	868-876
PS7-29 - 6279 - Control of <i>Acanthoscelides obtectus</i> in black beans with diatomaceous earth – C.M. Romano, A. Móras, M. de Oliveira, J.M. Pereira, M.A. Gularde, M.C. Elias	877-882
PS7-30 - 6286 - Evaluation of toxic effect of plant extracts on adults of <i>Sitophilus oryzae</i> L., 1763 (Col. , Curculionidae) – M.M.M. Rupp, M.E. da S. Cruz, J.C.T. Collella, S.P. Souza Junior, K.R.F. Schwan-Estrada, M.J. da S. Cruz, A.C. Fiori-Tutida	883-889
PS7-31 - 6291 - Toxic effect of vegetable extracts on adults of <i>Sitophilus zeamais</i> Mots. 1855 (Col. , Curculionidae) – M.M.M. Rupp, M.E. da S. Cruz, K.R.F. Schwan-Estrada, S.P. Souza Junior, J.C.T. Collella, M.J. da S. Cruz, A.C. Fiori-Tutida	890-896
PS7-32 - 6292 - Artificial cooling to control coleopterans in paddy rice stored in metallic silo – F.A. Lazzari, S.M.N. Lazzari, A.F. Karkle	897-903
PS7-33 - 6314 - Ozone: A new control strategy for stored grain – L.J. Mason, C.P. Woloshuk, F. Mendoza, D.E. Maier, S.A. Kells	904-907
PS7-34 - 6329 - Toxicity of mustard essential oil to larvae and pupas of <i>Sitophilus zeamais</i> (Coleoptera: Curculionidae) – R.R. da Costa, A.H. de Sousa, L.R.D'A. Faroni, O.D. Dhingra, M.A.G. Pimentel	908-913
PS7-35 - 6332 - Development of the mexican bean weevil (Coleoptera: Bruchidae) on bean genotypes with and without arcelin over two generations – E.C. Guzzo, O.M.B. Corrêa, J.D. Vendramim, A.L. Lourençao, S.A.M. Carbonell, A.F. Chiorato	914-919
PS7-36 - 6309 - Laboratory effects and efficacy of a Se-based rodenticide in controlling rodents in storage facilities – M. Vuksa, M. Draganic, S. Đedovic , G. Jokic	920-925
PS7-37 - 6333 - Evaluation of insecticidal activity of aqueous extracts of <i>Chenopodium</i> spp. in relation to <i>Rhyzopertha dominica</i> (Fabr.) (Coleoptera: Bostrichidae) – E.C. Guzzo, M.A.G.C. Tavares, J.D. Vendramim	926-930
PS7-38 - 6177 - Refrigaeration - a low energy process for refrigerating stored grains – G. Thorpe	931-938
PS7-39 - 6199 - Laboratory assessment of effects of a diatomaceous earth formulation on <i>Sitophilus oryzae</i> and <i>Tribolium castaneum</i> after different exposure periods – P. Kljajic , G. Andric, M. Prijovic, I. Peric	939-945
PS7-40 - 6297 - Preservation of Mestizo 1 (PSB Rc72H) seeds using hermetic and low temperature storage technologies – G.C. Sabio, J.V. Dator, R.F. Orge, D.D.T. Julian, D.G. Alvindia, G.C. Miranda, M.C. Austria	946-955
PS7-41 - 6303 - Feasibility of French beans disinfestation based on freezing intolerance of post-embryonic stages of <i>Acanthoscelides obtectus</i> (Say) (Col. : Bruchidae) – A.S. Dupuis, B. Fuzeau, F. Fleurat-Lessard	956-965

Plenary Session 8. Quality in Grain Drying

967

Keynotes

967

KPS8-1 - Preserving quality during grain drying and techniques for measuring grain quality – D.S. Jayas, P.K. Ghosh

[969-982](#)

Conference Papers

983

PS8-1 - 6138 - Effects of chilled aeration on grain quality – G. Srzednicki, M. Singh, R.H. Driscoll

[985-993](#)

PS8-2 - 6257 -Equilibrium moisture content (EMC) relationships of three popcorn grain varieties and their incorporation into in-bin grain conditioning strategies – D. Garg, R.G. Larson, D.E. Maier

[994-1002](#)

PS8-3 - 6262 - Effect of stationary and intermittent drying on latent damages in rice grains stored – F. da F. Barbosa, M.J. Milmann, C.A.A. Fagundes, I.G. Martins, O.N. Schownke, A. da C. da Cunha Neto, M.C. Elias	1003-1011
PS8-4 - 6263 - Effects of air temperature in drying on white oat grains quality – M.C. Elias, L.J. Marini, L. da C. Oliveira, E. Aosani, R.B. Prestes, L.C. Gutkoski	1012-1018
PS8-5 - 6265 - Effects of drying methods and storage period in the industrial quality of wheat – M.A. Schirmer, J.D. Freo, M.M. Müller, P.D.F. Bueno, D.H. Prestes, M.C. Elias	1019-1025
PS8-6 - 6267 - Effects of resting on drying and storage period on the metabolic defects and industrial performance of polished and parboiled rice – M.C. Elias, E. Helbig, V.L. Meneghetti, C.R. Storck, M. Pinno, C.V. Rombaldi	1026-1033
PS8-7 - 6269 - Influence of drying conditions and storage period, in the physical integrity and cooking time of beans – C.M. Romano, E. Aosani, E. Helbig, D. Rutz, M.A. Schirmer, M.C. Elias	1034-1042
PS8-8 - 6270 - Grain quality and energy consumption by evaluation intermittent methods of rice drying – M.C. Elias, F. da F. Barbosa, J.C. da Rocha, F.M. das Neves, G. Cellia, Á.R.G. Dias	1043-1052
PS8-9 - 6242 - Study of the performance of natural air / low temperature in-bin drying of different corn types using simulation – R. Bartosik, D.E. Maier	1053-1057

Plenary Session 9. Psocids, Mites, and Other Contaminants 1059

Keynotes 1059

KPS9-1 - Psocid and mite pests of stored commodities: small but formidable enemies – M.K. Nayak	1061-1073
---	---------------------------

KPS9-2 - Arthropods as sources of contaminants of stored products: an overview – V. Stejskal, J. Hubert	1074-1080
---	---------------------------

Conference Papers 1081

PS9-1 - 6105 - Psocids: weight losses of grain and biological control by pseudoscorpions – M.J. Pascual-Villalobos	1083-1086
--	---------------------------

PS9-2 - 6137 - Significance and feeding of psocids (Liposcelididae, Psocoptera) with microorganisms – I. Kalinovic, V. Rozman, A. Liska	1087-1094
---	---------------------------

PS9-3 - 6125 - Seasonal distribution of psocids in stored wheat – J.E. Throne, G.P. Opit, P.W. Flinn	1095-1103
--	---------------------------

PS9-4 - 6142 - Faunistic records of new stored product psocids (Psocoptera: Liposcelididae) for Portugal – Z. Kucerová, M.O. Carvalho, V. Stejskal	1104-1107
--	---------------------------

PS9-5 - 6144 - Degradation of cockroach allergen Bla g 2: Does the amount of the allergen increase after partial microbial degradation of faeces? – I. Køízková-Kudlíková, J. Hubert, T. Erban, A. Klaudyová, R. Aulický, V. Stejskal	1108-1113
---	---------------------------

PS9-6 - 6216 - The presence of rodent hair in food : a risk of human health – É.R.A. da Silva, M.H. Martini	1114-1116
---	---------------------------

PS9-7 - 6283 - Mold mites Tyrophagus putrescentiae (Shrank) in stored products – D.K. Mueller, P.J. Kelley, A.R. VanRyckeghem	1117-1122
---	---------------------------

Plenary Session 10. General Session on Stored Grain Protection 1123

Conference Papers 1123

PS10-1 - 6194 - Effectiveness of the standard evaluation method for hydraulic nozzles employed in stored grain protection trials – J.A. Vásquez-Castro, G.C. de Baptista, C.D. Gadanha Jr., L.R.P. Trevizan	1125-1130
---	---------------------------

PS10-2 - 6153 - Effect of spray volume on the moisture of stored corn and wheat grains – J.A. Vásquez-Castro, G.C. de Baptista, C.D. Gadanha Jr., L.R.P. Trevizan	1131-1135
---	---------------------------

PS10-3 - 6181 - A new method to evaluate the performance of hydraulic nozzles used in stored grain protection trials – J.A. Vásquez-Castro, G.C. de Baptista, C.D. Gadanha Jr., L.R.P. Trevizan	1136-1141
---	---------------------------

PS10-4 - 6182 - Influence of emulsifiable concentrate formulations on the physical properties of the fluid, spray characteristics, and insecticide deposits on stored grains – J.A. Vásquez-Castro, G.C. de Baptista, C.D. Gadanha Jr., L.R.P. Trevizan	1142-1148
---	---------------------------

PS10-5 - 6186 - Wheat quality management process applied at Cooperativa Integrada (Assaí, PR). Hazard analysis and critical control points (HACCP) on pre and post-harvest – C.M.G. Bernardi, M.V.E. Grossmann, I. Lorini	1149-1156
PS10-6 - 6335 - Detection of stored products pests by pheromone traps in seven warehouses in Luanda/Angola – R. Pacavira, O. Mata, A. Manuel, A.P. Pereira, A. Mexia	1157-1165
PS10-7 - 6159 - Modeling airflow in outdoor grain pile aeration systems – D. Maier , C.A. Campabadal, S. Khandelwal, J. Lawrence	1166-1173
PS10-8 - 6160 - Monitoring carbon dioxide levels for early detection of spoilage and pests in stored grain – D.E. Maier, R. Hulasare, B. Qian, P. Armstrong	1174-1181
PS10-9 - 6170 - Insect pests and management of stored hard wheat in central southern Italy – P. Trematerra, P. Gentile	1182-1188
PS10-10 - 6171 - Spinosad provides long-term protection for stored wheat – E.L. Bonjour, T.W. Phillips, J.T. Pitts	1189-1193
PS10-11 - 6174 - The diatomaceous earth treatment effects in the nutritional composition of maize grains – F.C. Ceruti, A.R. Pinto Júnior., R.I.N. Carvalho, V. Raphalski, J.M. Santos, M.V.T. Iaguszeski	1194-1197
PS10-12 - 6179 - Traceability in the wheat production chain – F.C. Ceruti, S.M.N. Lazzari, F.A. Lazzari	1198-1205
PS10-13 - 6183 - GrainPlan - development of a practical tool to improve grain storage on UK farms: knowledge transfer in action – R.H. Williams, S.C.W. Hook, C.G. Parker, J. Shields, J.D. Knight, D.M. Armitage	1206-1211
PS10-14 - 6188 - Insecticidal efficacy of diatomaceous earth against <i>Tribolium castaneum</i> (Herbst) (Coleoptera: Tenebrionidae) – N. Shayesteh, M. Ziae, M.H. Safaralizadeh	1212-1217
PS10-15 - 6190 - Control of <i>Sitophilus zeamais</i> Mots., 1958 and <i>Sitophilus oryzae</i> (L., 1763) weevils (Coleoptera, Curculionidae) in stored corn grain (<i>Zea mays</i> L.) with insecticide pirimiphos methyl (Actellic 500 CE) – B. Alleoni, W. Ferreira	1218-1225
PS10-16 - 6191 - Control of <i>Sitophilus zeamais</i> Mots., 1958 and <i>Sitophilus oryzae</i> (L., 1763) weevils (Coleoptera, Curculionidae) in stored barley (<i>Hordeum vulgare</i> L.) with insecticide pirimiphos methyl (Actellic 500 CE) – B. Alleoni, W. Ferreira	1226-1233
PS10-17 - 6192 - Control of <i>Sitophilus zeamais</i> Mots., 1958 and <i>Sitophilus oryzae</i> (L., 1763) weevils (Coleoptera, Curculionidae) in stored rice grain (<i>Oryza sativa</i> L.) with insecticide pirimiphos methyl (Actellic 500 CE) – B. Alleoni, W. Ferreira	1234-1241
PS10-18 - 6193 - Control of <i>Sitophilus zeamais</i> Mots., 1958 and <i>Sitophilus oryzae</i> (L., 1763) weevils (Coleoptera, Curculionidae) in stored wheat (<i>Triticum aestivum</i> L.) with insecticide pirimiphos methyl (Actellic 500 CE). – B. Alleoni, W. Ferreira	1242-1250
PS10-19 - 6227 - Test on cooling grains with intellectual ventilation system – W. Shuanglin, L. Shengbin, Z. Xiaojun	1251-1256
PS10-20 - 6230 - Sensitivity analysis using a grain storage facility model – L.C. Silva, R.A. Flores, D.M. Queiroz	1257-1263
PS10-21 - 6256 - Effectiveness of different dosages of diatomaceous earth to control <i>Sitophilus zeamais</i> (Coleoptera: Curculionidae) in corn stored in the state of Roraima – A.L. Marsaro Junior, M. Mourão Junior, P.R.V. da S. Pereira, P.M.F. Cosme	1264-1268
PS10-22 - 6258 - Effectiveness of different dosages of diatomaceous earth to control <i>Tribolium castaneum</i> (Coleoptera: Tenebrionidae) in corn stored in the state of Roraima – A.L. Marsaro Junior, M. Mourão Junior, P.R.V. da S. Pereira, W.R.S.C. de Paiva	1269-1273
PS10-23 - 6275 - Influence of the addition of organic acids in the fungal contamination and in the conservation of grains of sorghum hermetic stored – M.C. Elias, W. da S. Krolow, R.G. Dionello, M.Z. Peter, P.R. Gonçalves, P.L. Antunes	1274-1282

Panels 1. Stored Grain Procedures and Practices

1283

KP1-1 - Development of a new low-energy environmentally compatible grain and seed drying and storage	1285-1294
--	---------------------------

technology – R.T. Noyes

KP1-2 - Good practices in grain storage – M.G. Campos

[1295-1301](#)**Panels 2. Modernization on Stored Grain Facilities**

1303

KP2-1 - Application of sealing technology to permanent grain storage in Australia – C.R. Newman

[1305-1315](#)

KP2-2 - Engineering design and operation of equipment to assure grain quality and purity – D.E. Maier

[1316-1326](#)**Workshops 1. Standards and Sanitary Barriers in the International Market of Grain and Fibers**

1327

KW1-1 - Sanitary and phytosanitary measures: an Australian perspective – M. Robbins

[1329-1336](#)**Workshops 2. Practical Experience on Integrated Pest Management on Stored Grain**

1337

KW2-1 - Integrated pest management strategies used in stored grain in Brazil to manage pesticide resistance – I. Lorini, A.Ferreira Filho

[1339-1345](#)

KW2-2 - IPM practice and attempt in last several years in China grain storage – W. Dianxuan

[1346-1351](#)**Author Index**

1353

[Back to IWCSP Proceedings Index](#)[Contact Webmaster](#)