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(Sociedad Argentina de Biología)

XXIX Annual Scientific Meeting, Cuyo Biology Society
(Sociedad de Biología de Cuyo)

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(Sociedad de Biología de Córdoba)

Abstracts

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The abstracts were evaluated by a scientific committee prior to publication

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PV8 - MANURE EFFECT INCORPORATED ON THE GROUND OVER NITRATE CONCENTRATION IN LETTUCE LEAVES

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Nitrate toxicity is considered in lettuce when it overcomes the barrier of maximum permitted levels, set at 2500 mpp for summer productions and 4000 mpp for winter productions. This study evaluated the levels of nitrates in lettuce grown in soils with addition of manure. This work was made with Waldmann's Green Rapidmor cultivars planted on three dates: 23/09/09, 22/04 and 09/09/10. Prior to each planting, hen manure (HM), chicken manure (CM) and urea (U) were added in the control plots. For each fertilizer were used 2 doses (MAX and MIN). The design was CAB with 6 treatments, 4 replicates and a sample unit of 10 plants. We analyzed the concentration of nitrate in soil in the early crop stage and the leaves of lettuce at harvest. Comparisons were performed using ANOVA. The concentration of nitrate in soil presented a difference in the HM:MAX. Analyzing the dose and the fertilizers independently, there is a higher concentration on the HM fertilizer and on the MAX dose. In lettuce leaves, nitrate concentrations also showed a difference in the HM:MAX. The concentrations of nitrate do not exceed the reference value. These results show that the quantity and type of manure used by the local horticultural farmers in the lettuce crop, generate nitrate concentration in leaves close to the limit acceptance for human consumption.

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PV9 - PEANUT POD PRODUCTION IN GENOTYPES WITH DIFFERENT GROWTH HABIT AND BRANCHING PATTERN

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Virginia and Spanish peanuts market types are differentiated by their growth habit, branching degree and reproductive buds allocation that form patterns of pod distribution and contributions from the branches to crop yield. The objective of this study was describing the dynamics of pod number and weight per branch category in different cultivars. Every 10-13 days were sampled pod, leaves and stems of each branch into two genotypes grown under non-limiting conditions at three sowing dates (2009/10) and growth curves were built (start, end, duration and rate). The most productive branches were cotyledonary, other n+1 and n+2 cotyledonary in both genotypes, with 93 and 89% of the total yield for Virginia and Spanish cultivar, respectively. These branches had an earlier onset, the fruit appearance and growth rate higher and longer duration. The partition factor was differential between them and is determined probably by sink size; that is higher in branches which first define yield components that give them a comparative advantage over those of later development.

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PV11 - THE EFFECT OF NANOINSECTICIDES ON THE FEEDING ACTIVITY AND NUTRITIONAL PHYSIOLOGY BY OF STORED PRODUCT INSECT PESTSStefanazzi N^{1,3}, Stadler T², Buteler M², Ferrero AA².¹Dto. de Biol., Bioq. y Farmacia, UNS. B. Blanca, ²Lab. Tox. Ambiental (IMBECU), CONICET-Mendoza; ³CONICET.

Antifeeding activity and the alteration in nutritional physiology of *Sitophilus oryzae* and *Tribolium castaneum* adults were evaluated using disks of wheat flour with nanostructured alumina (NSA) or diatomaceous earth (DE) as positive control at concentrations of 0, 0.1, 0.05, 0.025, 0.0125, 0.00625 and 0.00312% (w/w). Flour disks were prepared according to the method of Huang *et al.* (2000) with some modifications. The nutritional indices calculated were: relative growth rate (RGR); relative consumption rate (RCR) and efficiency of conversion of ingested food (ECI). The antifeeding effect (AE) was also calculated. Positive values represented a feeding deterrent effect and negative values a feeding stimulant effect. In adults of *S. oryzae*, NSA significantly ($p < 0.05$) reduced the RCR at the concentration of 0.05%. Mortality observed was 78 and 80% at the concentrations of 0.05 and 0.1% respectively and feeding deterrent action was observed at the highest concentration (0.1%). In adults of *T. castaneum*, NSA reduced the RCR at the concentrations of 0.1, 0.05, 0.0125 and 0.00625% ($p < 0.01$) but no feeding deterrent action or mortality were observed. Our results showed that NSA had post-ingestive toxicity in *S. oryzae* and decreased food consumption in *T. castaneum*.

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PV12 - FUMIGANT ACTIVITY OF TWO SPECIES OF ALOYSIA AGAINST *Tribolium confusum* (COLEOPTERA: TENEBRIONIDAE)Benzi VS^{1,2}, Stefanazzi N^{1,2}, Murray AP^{1,3}, Ferrero AA².¹CONICET, ²Departamento de Biología, Bioquímica y Farmacia. UNS., ³INQUISUR. UNS. E-mail: veronicabenzi@conicet.gov.ar

Continuing with the research of the bioactivity of the essential oils of native plants, the objective of this work was to evaluate the fumigant activity of the essential oils of *Aloysia polystachia* (Ap) y *Aloysia citriodora* (Ac) against *Tribolium confusum*. The essential oils were extracted from fresh leaves using a Clevenger-type apparatus. *T. confusum* is a susceptible strain that was reared on wheat at 30° C y 65-75% h.r. To determine the fumigant toxicity of essential oils, filter papers were impregnated with 40µg of ethanol solutions at different concentrations. Each filter paper was attached to a glass vial, and each vial was introduced inside a glass flask of 40 mL with a top. Ten adults of *T. confusum* were placed inside the flask. Five independent replicates were conducted. Mortality was evaluated at 72 h. LC50 was calculated by Micro Probit 3.0. Treatments do not differ significantly. (CL50 Ap: 5.92 mg/L air, CI 95%: 5.29-6.58, X²: 2.75) (CL50 Ac: 5.53 mg/L air, CI 95%: 2.64-6.81, X²: 0.12).