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ABSTRACT BOOK

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PP-042
Cumulative food consumption, in the longevity and expression of the DWV, VG and MRJP1 genes, in Apis mellifera bees in the laboratory

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The lack of nutrients in the diet of honeybee colonies (Apis mellifera) can cause nutritional stress, being one of the main causes of the deterioration of the immune system and susceptibility to diseases. The aim of this work was to evaluate the accumulated consumption (CA) of Apitir®, Ultrabee®, and USDA Diet in the longevity and expression of the genes DWV, VG, and MRJP1, in Apis mellifera in the laboratory. Hybrid bees between one and two days of emergence were used. PCR of the genes DWV, VG, and MRJP1 of the bees was performed once a week until the end of the experiment, VG was also measured in bees within two days of emergence. The CA was evaluated by one-way ANOVA and Bonferroni. Longevity was represented by survival curves. Survival was analyzed by (ANOVA) of Bonferroni. Vg and mrjp1 were analyzed by one-way ANOVA and Bonferroni. The analysis of DWV was performed by Mann Whitney U. Gene expression and viral titers was evaluated by Spearman correlation. The highest CA for the bees was for the USDA Diet, (21 days), with 0.36 g. There were differences between the consumption of Apitir® and the USDA Diet with a value of Q = 5.19 (p =.00128). Longevity was higher for Ultrabee, there were differences between the longevity of Apitir® and Ultrabee® Q = 4.96 (p = 0.00206). The ANOVA did not show differences between treatments for VG. The USDA Diet quantified 972 copies for DWV, followed by Apitir® with 58 copies, which were statistically different, Ultrabee® and USDA Diet U = 0 (p = 0.04953). The USDA Diet presented higher levels of mRNA expression for mrjp1, followed by the levels of newly emerged bees, the ANOVA presented differences between Apitir® and USDA Diet groups F = 11.92218 (p = 0.0259). The bees in this study showed statistical differences in the accumulated consumption of protein foods of treatments, which influenced longevity, DWV loads and mRNA levels, but not in the expression of Vg.Key words: Apis mellífera, alimentos proteicos, consumo acumulado, DWV, VG y MRJP1

PP-043
Differences in the semen quality of Apis mellifera drones of selected lines along reproductive season in Balcarce district, Southeastern Buenos Aires Province, Argentina

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Sperm quality in Apis mellifera drones plays a central role in colony reproduction. Several authors claimed that semen quality varies according to intrinsic and extrinsic factors. However, paramount and basic issues are unresolved in disentangling the factors affecting sperm quality. Here we explored if different dates within the reproductive season exhibit variation in sperm quality of drones from colonies selected under a template climate. Drones come from colonies of the Honeybee genetic program (MEGA-INTA), where lineages of brood disease tolerances are reared along with other features sought by the apiculture sector. The essay consists of three sampling times (T1, T2, T3) involving the whole reproductive season (from November to February), where T1 represents the beginning, T2 the middle, and T3 the ending reproductive season. Eight hives were assessed twice per sampling time. The techniques used were Eosina-Nigrosina for viability, Osmotic Swelling test (HOST) to test cell membrane function by using distilled water 100 OSM at 22°C and 35°C, concentration (number of spermatic cells estimation per volume of semen) through a Newbauer chamber, the number of drones matures with semen (total drones evaluated/drones with ejection of semen under abdomen stimulation), and the obtained sperm volume per drone (obtained volume/number of drone with semen) per colony. Results suggest T2 has better viability than T1 and T3 (Mann-Whitney: p= 0,00189 and p=0,005264, respectively). In HOST with distilled water, T2 differs from T3 (Mann-Whitney: p=0,01344). At 100 OSM at 22°C, there were no differences (all $P>0.05$), and at 100 OSM at 35°C, we only registered differences between T2 and T3 (Mann-Whitney: p=0,01639). In Concentration, T2 had more sperm cells than T1 and T3 (Mann-Whitney: p=1,05E-05 and p= 2,25E-06, respectively). In semen volume per drone and the number of mature drones with semen, there were no differences (all $P>0.05$). Our results suggest variation in semen quality through the reproductive season. Hence, in the sampling region, we recommend using reproductive techniques involving semen manipulation, preferably in January (T2), involving better quality semen.