



turn may have an effect on the quality of the colonies (e.g. larger queens give rise to larger colonies). The present study was carried out to compare the effect of different queen cell cup sizes (0.8 vs. 0.9 mm diameter) on the acceptance rate of grafted larvae and on morphometric characteristics of queen honey bees. Sixty-five larvae were allocated to each treatment. Grafting took place once a week in June and once at the end of August. As soon as they emerged from the pupal case, virgin queen bees were collected and immediately frozen at -20°C in order to prevent weight losses and dehydration. Head, thorax and abdomen width (mm) were measured using an electronic caliper, the weight of each of the three segments was recorded using a precision scale. One hundred and ten grafted larvae out of 130 were accepted. The acceptance rate was higher in larger cell cups, but differences were not statistically significant (larger cells: 89.2%; smaller cells: 80.0%; $\chi^2 = 2.1273$; $p = .1474$), confirming the results of previous research on the effect of cell cup size on acceptance rate. All morphometric traits measured on the accepted larvae (large cups: $n = 58$; small cups: $n = 52$) were significantly higher in queen bees raised in larger cell cups ($p < .001$; GLM with cell cup size and grafting period as fixed factors), except for head width. Principal Component Analysis on morphometric traits confirmed a trend of queens raised in larger cells to show higher values on PC1 (58.4% of explained variance), characterized by particularly high loadings of variables related to the weight of the three segments. In conclusion, increasing cell cup size seems to have a positive effect on queens' quality, especially in terms of a higher weight, which is expected to positively affect the dimension of the colonies, with no detrimental effect on the acceptance rate of grafted larvae.

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Animal Bio Arkivi: establishment of a phenotype and tissue repository for farm animal and pet at the University of Milan

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Thanks to the new omic technologies, research on veterinary, and animal sciences will take advantage of large repositories of biological materials.

At the University of Milan, Dipartimento di Medicina Veterinaria, a biorepository (Animal Bio Arkivi) has been established. Animal Bio Arkivi consolidates, organizes, and promotes the collection, cataloging, and conservation of biological samples of different veterinary interest species. Samples and data are all available for research on biomedical aspects, risk assessment, sustainable breeding and conservation, leading to improvements for animal and human health.

The collection is registered in a database organized by species, but with uniform criteria for recording and storage. Each animal record includes: signaling (studbook ID, microchip), pedigree data, phenotype data (clinical information/productive features/other traits under selection), and genotype data (coding loci, microsatellite markers, SNVs profiles) when available. Samples are conferred with owners' permission and non-disclosure agreement. Procedures of periodic backups are set up.

The collection preserves samples from different animal tissues, mainly blood, but also frozen muscles and other organs, semen, hair and feathers. Specimens are stored (at -20°C , -80°C or liquid nitrogen) to ensure proper organization and quality of the conservation. The repository also hosts DNA extracted from relevant samples. The first collected specimens date back 35 years. Overall the repository includes specimens of approximately 45,000 animals of several species: 34,000 Equidae, 5000 Bovidae, 5000 Felidae, and 1000 Phasianidae. Cosmopolitan breeds from historic routine typing service are mainly represented. Many local and rare populations or cohorts/families segregating relevant traits and samples from wild species are also included. The repository benefits from close long-lasting strategic partnerships of the University scientists with breeding associations, service laboratories, Academic institutions, and scientific initiatives of practitioners, such as the Osservatorio Veterinario Italiano Cardiopatie, which provide valuable additional information on phenotypes and genotypes, bringing together the public and scientific communities.

Animal Bio Arkivi benefits from the newly established location in Lodi and its potential additional synergy with Veterinary Clinical and Husbandry Center of the University of Milan.

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Non-invasive acoustic detection of wolf's attack to livestock. Preliminary results of a prototype in two sheep farms

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The ongoing expansion of wolf population in Italy raises conflicts with farmers due to livestock predations, which are added predations from free-ranging dogs and wolf-dog hybrids. Livestock predations represent one of the main issues for wolf conservation in Italy, since most of the known illegal killings occur in areas with high farm densities and high levels of damages and, at the same time, they induce considerable economic losses to farmers. A series of prevention measures could be applied, such as guardian dogs, electric fences, and animal enclosure; compensation