

Summary of Honey Bee Research Objectives of the ABF

The American Beekeeping Federation has identified a number of research priorities in recent resolutions adopted by vote of its members at annual convention. Among current concerns are Varroa mites, Tracheal mites, Honey adulteration, Africanized honey bees, Viral bee diseases, Queen replacement procedures, Bacterial and fungal brood diseases, Wax moth control, Fire ant infestations of bee equipment, Pesticide mortality and sublethal injury, Pollination efficacy and the most recent exotic pest, the small hive beetle, *Aethina tumida*. Other resolutions have voiced opposition to proposed large-scale importation of bees and queens from New Zealand and Australia, citing the risk of introduction of dangerous pests, pathogens, or hazardous subspecies of honey bees, without any offsetting benefit to domestic agriculture.

The Honey Bee Genome Project will soon provide a complete sequence, assembly and annotation of the honey bee genome. The fruits of this effort will include a deeper understanding of basic honey bee biology, provision of additional tools to accelerate selection and production of bees with novel combinations of valuable traits, and encourage the broader scientific community to conduct more investigations with apicultural and agricultural relevance. We urge CSREES to use this important resource to advantage by building upon the HBGP and leveraging the NIH investment in honey bee research. We believe that genomics and bioinformatics promises to generate new knowledge of incalculable value to apiculture, entomology, agriculture, fundamental biology and human health. We encourage CSREES to support additional initiatives in new scientific technology that promise to revolutionize agriculture, human health and nutrition. Ultimately, it may be possible to design new weapons that more selectively eliminate harmful members of communities without inflicting collateral damage on valuable beneficial species, or the food consumer.

We believe that work on domestic pests and pathogens of honey bees, such as mite infestations; viral, bacterial and fungal brood and bee infections; Africanized honey bees; Wax moth control; fire ant management; and, small hive beetle control could be appropriately and effectively addressed under the aegis of 1) Agricultural and Environmental Quality; 2) Genomics and Food and Fiber Production; and 3) Food Safety. Similarly, research on detection and elimination of honey adulteration and contamination of honey with antibiotics or other therapeutic compounds would obviously contribute to 3) Food Safety; 4) Agricultural Security; and, 5) Human Nutrition and Food Science.

Finally, focusing additional research on emerging, exotic pests and pathogens, and more accurate and quantitative assessment of the risks presented by foreign honey bee pests, pathogens and hazardous subspecies of bees would enhance 4) Agricultural Security; and 2) Food and Fiber Production.

More research should be conducted immediately to: a) identify viral pathogens of honey bees, about which practically nothing is known; b) to study the fundamental biology of exotic honey bee pathogens and pests; and, c) develop integrated control protocols to combat and minimize the impact of exotic pest invasions should they occur. Funding research now on avoiding and controlling new problems would allow a more proactive approach, permitting development of strategies for minimizing the risk of initial infestations, as well as means for combating infestations immediately after they occur. We urge immediate study, preparation and coordination, instead of the past and current practice of hoping, groping and coping while relying upon a paucity of information to design and implement control measures under the stress of emergency conditions.

