

Immune Priming in *A. Mellifera*

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Trans-generational immune priming (TgIP) is the transfer of maternal immune experience to progeny, producing offspring pathogen resistance and ultimately survival from infections. In colony-forming insects like the honey bee *Apis mellifera*, TgIP would yield a form of lasting immunity benefiting subsequent generations. TgIP has been demonstrated in multiple social insects, but the efficacy and longevity of this immune protection is yet to be fully understood. To induce “priming” we inoculated honeybee queens with *Paenibacillus larvae* (PI), a spore-forming bacterium causing American Foulbrood, a brood disease that once plagued beekeepers worldwide. Following inoculation, offspring of “primed” queens were fed a diet containing *P. larvae* spores and mortality rates were measured to assess TGIP. Our data reflects a dramatic reduction in larval mortality in *A. mellifera* colonies with “primed” queens, and demonstrates the efficacy of this protection at multiple timepoints.