Symbiotic interactions in termites and aphids

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Insects are intensively studied whether for their pest behavior or particular metabolim and these traits often involve their symbiotic partners. Here, we will describe two different topics based on multi-omics approaches.

Termites metabolism in response to ligno-cellulosic compounds:
Despite the intensive research focusing on digestion and interaction with symbiotic microbial community in termite gut, this complex system still holds many secrets. Comparative approach was realized by providing diverse artificial diets to Reticulitermes flavipes (Kollar) and the effects were observed using proteomics, cultivation assays, 16S analysis and metabolomics. These diets induced strong perturbation of symbiotic microbial community, highlighting the role of some symbionts in response to ligno-cellulosic compounds.

References

Influence of Regiella insecticola on mevalonate pathway and alarm pheromone production:
Mevalonate pathway leads among others to two important terpenoid compounds in aphids, the alarm pheromone and juvenile hormone. We investigated the potential influence of secondary symbionts of pea aphid on the alarm pheromone production. Regiella insecticola-infected strains showed higher production in adults. High resolution quantitative proteomic and aphid mevalonate pathway quantitative PCR analyses of were performed.