

## **Abstract: NeSA202100oral-10: Long-Term Mosquito culture with SkitoSnack, an artificial blood meal replacement**

**Time: 2:48-3:00 PM**

### **Presenter:**

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The reliance on blood is a limiting factor for mass rearing of mosquitoes for Sterile-Insect-Technique (SIT) and other mosquito-based control strategies. To solve this problem, we have developed SkitoSnack, a formulated diet for *Aedes aegypti* (L) mosquitoes, as an alternative for vertebrate blood. Here we addressed the question if long-term yellow fever mosquito culture with SkitoSnack resulted in changed life history traits and fitness of the offspring compared to blood-raised mosquitoes. We also explored if SkitoSnack is suitable to raise Asian tiger mosquitos, *Aedes albopictus* (L.), and the human bed bug, *Cimex lectularius* (L). We measured life history traits for 30<sup>th</sup> generation SkitoSnack-raised *Ae. aegypti* and 11<sup>th</sup> generation SkitoSnack-raised *Ae. albopictus*, and compared them with control mosquitoes raised on blood only. We compared meal preference, flight performance, and reproductive fitness in *Ae. aegypti* raised on SkitoSnack or blood. We also offered SkitoSnack to bed bug nymphs. We found that long-term culture with SkitoSnack resulted in mosquitoes with similar life history traits compared to bovine blood-raised mosquitoes in both species we studied. Also, *Ae. aegypti* mosquitoes raised on SkitoSnack had similar flight performance compared to blood raised mosquitoes, were still strongly attracted by human smell and had equal mating success. Minimal feeding occurred in bed bugs. Our results suggest that long-term culture with the blood-meal replacement SkitoSnack results in healthy, fit mosquitoes. Therefore, artificial diets like SkitoSnack can be considered as a viable alternative for vertebrate blood in laboratory mosquito culture as well as for mosquito mass production for Sterile-Insect-Technique mosquito control interventions. SkitoSnack was not suitable to induce engorgement of bed bugs.