

## **P3-110 “Role of Oxylipins in Plant Defenses against Aphids”**

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### **Abstract:**

Aphids are sap-feeding insects that attack nearly all of the world's major crops. Although these insects can cause extensive yield losses, relatively little is known about plant defenses against them, or about how these defenses could be enhanced. The Goggin laboratory at the University of Arkansas has identified a tomato genotype with marked resistance to the potato aphid; aphid numbers on this tomato line are typically at least 50% lower than on other cultivars. The Goggin lab is currently collaborating with the Nair laboratory at Arkansas State University to identify the chemical traits that are responsible for aphid resistance in these plants. In particular, this project is focused on oxylipins, a class of compounds derived from the oxidation of fatty acids. Many plant oxylipins are known to have antibiotic properties, while others serve as signals that activate additional plant defenses. Several of these compounds are also known to differ in abundance between the aphid-resistant tomato plants and other susceptible lines. By exploring the impact of different plant oxylipins on plant-aphid interactions, this project should expand our basic knowledge of plant defenses, and also facilitate the enhancement of resistance in tomato and other crops.