

## **The Insect: Western Flower Thrips**

Management strategies to minimize thrips damage and reduce the development of insecticide resistance are essential for long-term sustainability of the floriculture industry. To mitigate confounding effects of insect health and virus infections, it is necessary to have a consistent and reliable source of insects. Our laboratory successfully established a healthy, aggressive, and virus free western flower thrips colony for research purposes. This is one of only six western flower thrips colonies in the USA and is the only colony in the Midwest. UIUC and external researchers use it extensively as a reliable source of thrips. One limitation of laboratory reared colonies is that the founder insects might not represent endemic insect populations. If this occurs, research based on the established colony may not be applicable to commercial facilities.

To ensure that the UIUC colony was representative of domestic thrips populations, a collaborative project was undertaken to evaluate 19 populations of thrips for feeding aggressiveness and tolerance to commercial insecticides. We found that greenhouse, laboratory, and native populations varied in feeding aggressiveness immediately after collection, but that aggressiveness became standardized as insects were reared in the laboratory (Loughner and Warnock, 2003). This loss of variability is likely due to rearing the insects in optimal conditions such that insect health becomes more uniform. This is significant by proving that insect fitness can be standardized for controlled experiments. The UIUC colony was similar to other insect populations strengthening the validity of research utilizing this colony. A second significant finding of this study was that two insect populations were partially resistant to Conserve<sup>®</sup>, the most commonly used insecticide to manage thrips (Loughner and Warnock, 2003). This is the first documented evidence of thrips resistance to Conserve<sup>®</sup> and indicates how rapidly thrips can develop resistance (Conserve was released in 1998) and highlighting the need for alternative control measures, such as host plant resistance.