

COMPARING ATTRACTANTS FOR SPOTTED WING DROSOPHILA MONITORING

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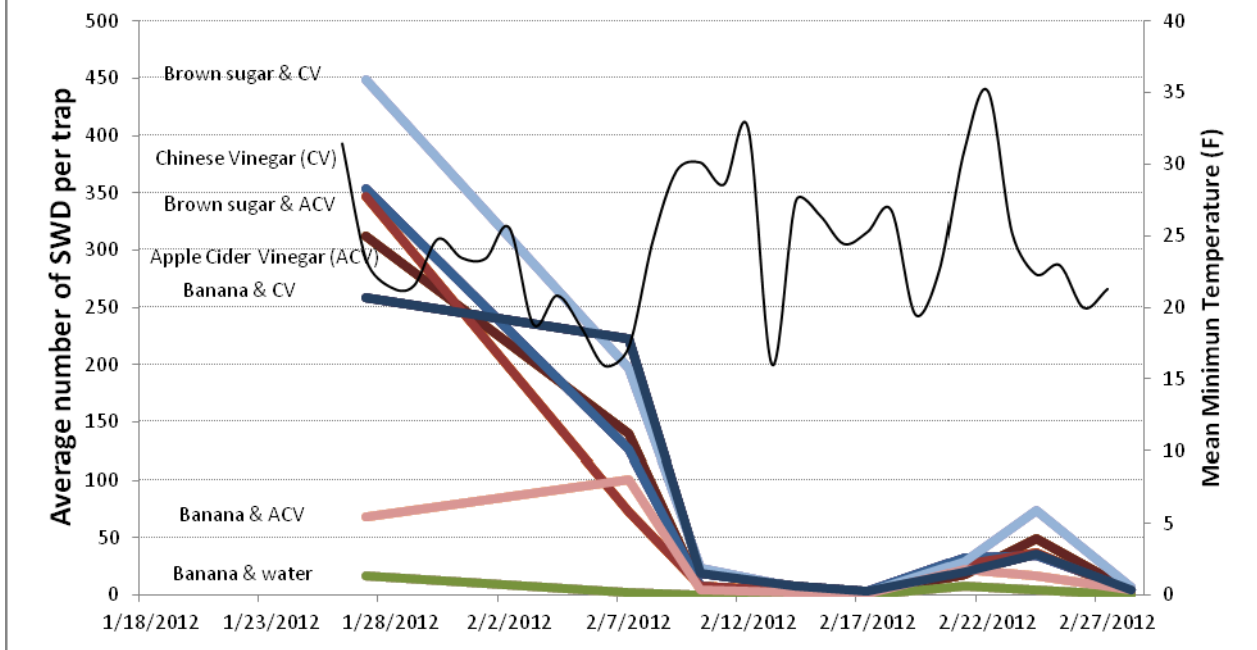
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Since the first detection of spotted wing drosophila (SWD) in the northwest, field monitoring of SWD has been relied on traps filled with apple cider vinegar (ACV), which appears to be one of the strongest attractants for SWD. SWD has been present in Asian countries such as China for some time, reviewing literatures found rice and sorghum based Chinese vinegars (CV) were widely used not only as an attractant for monitoring, but served as an effective bait with other ingredients in mass trapping to achieve remarkable control of SWD in many fruit crops.

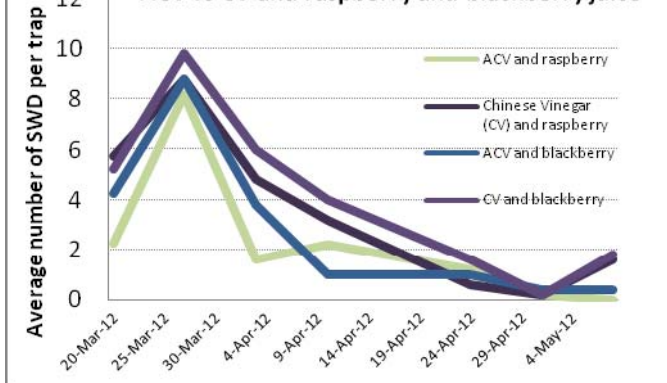
To compare ACV with CV in monitoring traps, we hope to determine if the CV is a better attractant than the ACV, and if other additives such as brown sugar and berry juices will affect the overall quality of the attractants. A commercial mature blueberry field was chosen in Hillsboro, OR for setting up two bait trials from January to May 2013. Soil and temperature loggers were install on site to provide year around soil temperature and air temperature data. The attractants in the first trial were ACV, CV, brown sugar, and banana in a factorial arrangement with controls for contrast comparisons. The attractants used in the second trial were: ACV, 25%CV, yeast, hard apple cider, beer, raspberry and blackberry juice with either ACV or CV in a factorial design. There are five replications for each treatment for both bait trials and traps were sampled every 7-10 days. Male and female SWD and other drosophilids were counted under a dissecting microscope. Only average total SWD per trap count is reported.

Observations from both attractants trails indicated that Chinese vinegar seemed to attract more SWD fliers than ACV in most sampling dates (Fig 1-2). Brown sugar addition increased the effectiveness of the CV attractant, while banana had no obvious effects (Fig 1), which were in contrary to findings from the Chinese literature. Addition of raspberry juice and blackberry juice in both ACV and CV had no affect on the baits. Hard cider, yeast solution, and beer alone performed no better than ACV as trap baits. Average minimum temperature of 20 F seemed to keep SWD population in check for a few weeks. The main ingredients of Chinese vinegar used in the experiments were sticky rice and wheat bran fermented at the presence of sugar and salt. It will be very interesting to analyze the volatile compounds of the CV to dissect its attractive nature to SWD.

**Fig 1. Comparison of SWD attractants I
ACV vs CV and brown sugar and banana**



**Fig. 2. Comparison of SWD attractants II
ACV vs CV and raspberry and blackberry juice**



**Fig. 3. Comparison of SWD attractants II
ACV, yeast, hard cider, beer**

