Effect of Cherry Cultivar and Trapping Height on Population Dynamics of Drosophilid Fruit Flies in Cherry Orchards in Northern China

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Abstract

In recent years, fruit flies (Drosophilidae) in cherry trees in northern China have become an increasingly serious problem. In this study, we examined the species composition and dynamics of fruit flies in cherry orchards by lure traps placed at different heights, and in three different cherry cultivars from April through September, between 2014-2016 in Qingdao, Shandong Province. The total number of fruit flies increased year by year. Four species were captured: *Drosophila melanogaster* Meigen, *D. suzukii* Matsumura, *D. hydei* Sturtevant, and *D. immigrans* Sturtevant. The dominant species was *D. melanogaster,* being 66.7% of the total, followed by *D. suzukii* Matsumura (29.7%). *D. hydei* and *D. immigrans* accounted for 3.0 and 0.6%, and for these last two species, no peak period of abundance was observed. In general, drosophilid fruit flies appeeraed in April, and peaked around mid-July. Over the three years of the study, peak fruit fly abundance was later each year, being at the end of June in 2014, and in the middle of July in 2015 and 2016. There were significant differences in the number of *Drosophila* species among cherry cultivars as well asin the number of *Drosophila* trapped at different heights. The optimal height for trap placement was at 1m above ground level, which is recommended as a standard height for monitoring trap placement.

Citation: Man Xiaoming Effect of Cherry Cultivar and Trapping Height on Population Dynamics of Drosophilid Fruit Flies in Cherry Orchards in Northern China. **protocols.io**

dx.doi.org/10.17504/protocols.io.k7nczme

Published: 11 Dec 2017

Protocol