

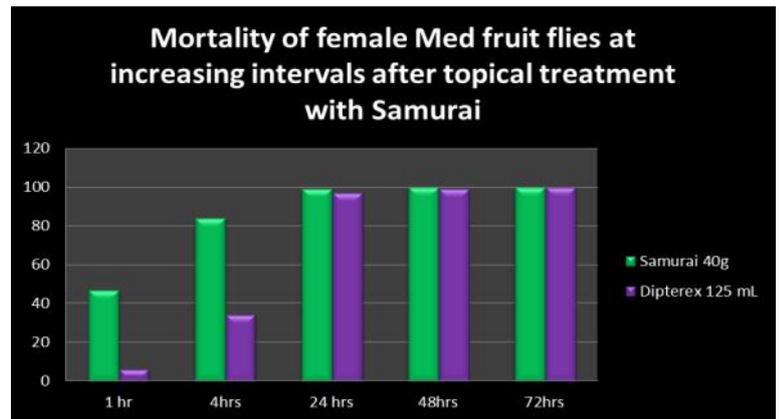
Control of Queensland fruit fly and Mediterranean fruit fly with Samurai Systemic Insecticide[®]



A permit for the control of Queensland fruit fly *Bactrocera tryoni* and Mediterranean fruit fly *Ceratitis capitata* with **Samurai Systemic Insecticide** was recently approved by the APVMA. Permit details can be found at: <http://permits.apvma.gov.au/PER14252.PDF>. The purpose of this Tech Note is to provide supplementary information about **Samurai** for this particular use pattern to prospective users.

Important facts about **Samurai** for control of Fruit flies

- ◆ This permit is for Pome fruit, Persimmons and Stone fruit only.
- ◆ This permit is for control of Queensland fruit fly and Mediterranean fruit fly. A significant volume of research has been done against Qld Fruit fly, but our knowledge about the efficacy of **Samurai** against Med fruit fly is limited to one bioassay on adult flies. Initial data however, suggests that the species have similar susceptibility to **Samurai**.

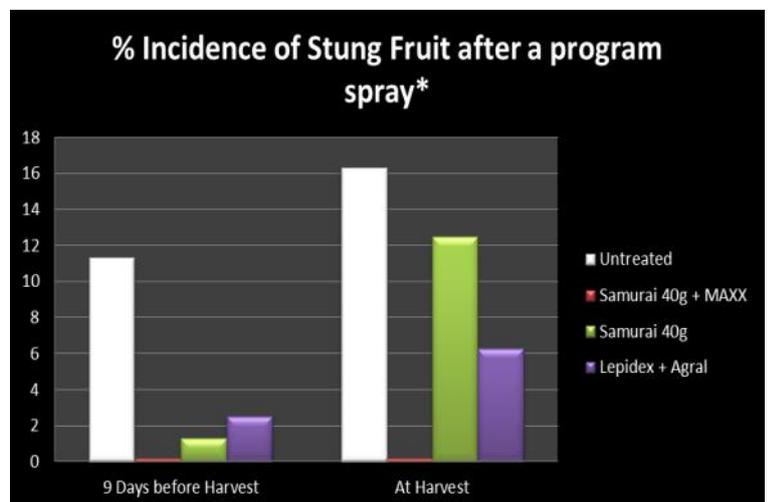


Data courtesy of S.Broughton and T.Rahman, Dept. of Agriculture & Food, WA, 2013.

Compared to the registered standard Dipterex, **Samurai** demonstrated >80% mortality of female Med fruit fly within 4 hours of topical exposure. This rapid effect has significant advantage in preventing further egg lay.

- ◆ The use rate to control fruit fly is the same as the general foliar use rate (40 grams / 100L water) to control other pests. However, where the addition of MAXX Organosilicone Surfactant is optional when controlling other pests like Woolly Apple Aphid, Mealybug, Codling moth, OFM and Green peach aphid, the addition of MAXX Organosilicone Surfactant at 50mL/100L water is essential for getting a good result against fruit fly. This is because the surfactant contributes to the uptake of **Samurai** into the skin of the fruit where it is needed to control hatching larvae. The graph below demonstrates the importance of MAXX Organosilicone Surfactant in the mixture.

Samurai + MAXX, when applied with good coverage, is an effective repellent to prevent fruit from being stung. Keeping the pest away from the fruit is the primary objective in fruit fly control.



The spray program consisted of four Samurai sprays at 10 day intervals, or Lepidex @ 250mL + Agral (once), followed by 3 more applications @ 175 mL + Agral at 10 day intervals.

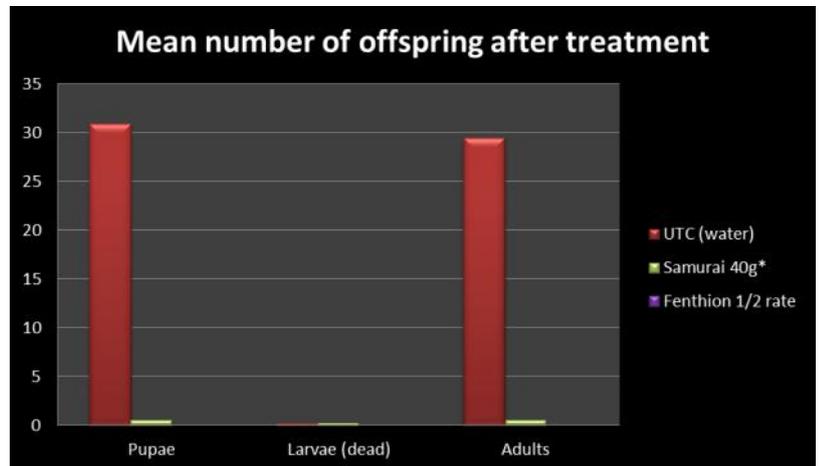
Technical aspects explained...



Q Because the permit only allows two **Samurai** sprays per crop, it is possible that eggs may have been laid in the fruit by the time **Samurai** is applied. Will **Samurai** control fruit fly already in the fruit, or eggs laid after treatment?

A In a bioassay designed to evaluate this aspect, gravid females were exposed to ripe fruit in an enclosed space for 48 hours. Fruit were then sprayed with insecticide, and stored for an extended period to record the number of survivors.

These results indicate that both chemical treatments were highly effective at controlling larvae in the fruit before they could pupate



Data courtesy of O.Reynolds, A. Jessup, T. Osborne and I. Barchia, NSW DPI, 2013. * Note that **Samurai** was applied without Maxx Organosilicone Surfactant in this bioassay.

- ◆ When used as recommended, **Samurai** has a short 7 day withholding period. This means that it can be applied close to harvest when the fruit is most susceptible to fruit fly. However, because prevention is the primary objective in fruit fly control it is advisable to use **Samurai** in a program with other effective insecticides to maintain repellence from when fruit fly first appear in the traps up to harvest.

Q Will **Samurai**, applied as a soil drench earlier in the season to control other pests, also control fruit flies emerging from the orchard floor after pupating the season before?

A This aspect has not been investigated, but logic dictates that if fruit fly pupae are situated in the area treated with **Samurai**, they will be affected. However, the migratory nature of fruit fly and their ability to infest crops from native vegetation means that any soil effect will have limited impact on pest numbers. Standard cultural control methods such as orchard sanitation, trapping and baiting remain key in the battle against fruit fly.

Q Will two applications of **Samurai** against fruit fly, on top of an earlier application to the soil for control of other pests, result in the MRL being exceeded?

A No. Residue analysis confirmed that there is no residue in the fruit at harvest when **Samurai** is applied as a soil treatment according to label directions, so it does not compound the residue situation.

- ◆ The MRL's established by the APVMA apply only to produce marketed and consumed in Australia. If treated fruit is destined for export, the residue definitions, limits and import tolerances of export destinations must be considered. Producers are advised to contact their peak industry bodies for advice concerning export options prior to using **Samurai** to control fruit flies.

