**Pesticide Alternatives to Protect our Watershed**

*Cindy Fake, UC Cooperative Extension Farm Advisor, Placer & Nevada Counties*

*Janine Hasey, UC Cooperative Extension Farm Advisor, Sutter/Yuba/Colusa Counties (revised walnut/peach, 2/2013)*

Diazinon and chlorpyrifos are organophosphate insecticides detected in recent PNSSNS water tests. In this watershed, Chlorpyrifos is mainly used in walnuts, occasionally in peaches, plums, citrus, and nursery stock. Diazinon is commonly used for dormant applications on stonefruit, especially peaches and plums. A few growers use it on apples and pears. This chart lists effective alternatives to these pesticides.

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| **Crop** | **Pest** | **Chlorpyrifos** | **Diazinon** |
| **Walnut** | Codling moth | Mating disruption, Delegate, Altacor, Belt |  |
|  | San Jose scale, Walnut scale, European fruit lecanium | Seize (IGR)  Oil (delayed dormant, only for organic orchards) |  |
|  | Walnut husk fly | Bait + Provado, Delegate, Spinosad (Entrust or Success) or Assail; GF-120 |  |
| **Peach** | Peach Twig borer |  | Delayed dormant: oil + Delegate, Entrust, Success, Dimilin or Intrepid  Bloom time: Dimilin, Delegate, Intrepid, Entrust, Success, Altacor or BT (*Bacillus thuringiensis*) |
|  | Peachtree borer | Asana XL, mating disruption |  |
|  | Oriental fruit moth | Mating disruption, Altacor, Intrepid, Delegate |  |
|  | San Jose scale |  | Dormant: oils  Delayed dormant: oil + Seize or Centaur  Spring: Seize, Centaur |
| **Plum** | European fruit lecanium | Narrow range oils | Dormant oil |
|  | Obliquebanded leafroller | Oil +Dimilin or oil+Spinosad |  |
|  | Peach Twig Borer | Oil + Success, Entrust, or Dimilin | Delayed dormant: oil + Success, Entrust, or Dimilin  Bloom/post bloom: Success, Entrust, Bt |
|  | San Jose scale | Oil plus Esteem (Pyriproxyfen) | Dormant oil |
|  | Aphids (Leaf curl, mealy plum) | Oils or *Aphidius* parasitic wasp releases | Dormant: Asana XL  Spring: neem oil, narrow range oil |
| **Cherry** | Fruit Lecanium, San Jose scale |  | Delayed dormant: oil or oil + Supracide or Seize |
|  | Peach Twig Borer |  | Spring: Asana XL, Intrepid, Bacillus thuringiensis, ssp. Kurstaki (Bt), or Entrust |
| **Pear** | Aphids (Green peach, Cotton-melon, Bean) | Narrow range oils, neem oil |  |
|  | San Jose Scale | Narrow range oil or dormant oil |  |
| **Apple** | Aphids (rosy, wooly, green apple) |  | Delayed dormant: oil is best  Spring: Movento |
|  | San Jose Scale |  | Dormant & crawler stage: oil  Delayed dormant: oil + Esteem or Seize |
| **Citrus** | CA red scale & Citricola scale | Narrow range oil, Applaud, Esteem, Release *Aphytis* wasps for CA red scale |  |

**Information in this chart comes from UC IPM Pest Management Guidelines at** [**http://www.ipm.ucdavis.edu/PMG/**](http://www.ipm.ucdavis.edu/PMG/) **or Walnut Research Reports 2012 at** [**http://walnutresearch.ucdavis.edu/**](http://walnutresearch.ucdavis.edu/)