PROTECT BERRY-POLLINATING BEES

Strawberries, raspberries, and blueberries need bee pollinators to produce good crops. This makes it important to protect the bees from hazardous insecticides.

Need for Insect Pollinators

Berry flowers have many pistils, each of which must receive pollen before it can contribute to the size and shape of the fruit. This can be partly accomplished by pollen thrown on the pistils as the anthers open or by air-borne pollen. However, studies in England, Scotland, Canada, and the United States (including Washington State) have shown that insects are essential for good production. The degree of response to insect pollination differs with variety.

Blueberry flowers must be pollinated by insects. Exclusion of insects from the flowers results in no fruit at all. Strawberries and raspberries will set some fruit in the absence of insects. However, strawberries produced under these conditions are smaller and very likely to be misshapen, resulting in greater cullage by the buyer. Raspberries remain very small and are often crumbly because of an insufficient number of drupelets.

Cross-pollination by insects sometimes results in larger fruit. However, this requires that two or more varieties be in close proximity to each other, which may not always be possible. The blueberry varieties Reubel and Jersey seem to produce good crops when planted in solid blocks. The Puyallup raspberry has greater tonnage when planted next to the Willamette variety. Little is known about cross-pollination of strawberries in the Pacific Northwest.

Numbers and Sources of Bees

The honey bee is the most important of the pollinators. There are usually sufficient numbers of "native" honey bees present in strawberry and raspberry fields for good pollination. There

Normal and poorly pollinated raspberry. Poorly pollinated raspberries may average 8-23 drupelets, compared to 45-90 in well-pollinated fruits.

Normal and poorly pollinated blueberry cross-section. The central fleshy portion between the seeds does not develop in poorly pollinated berries.

Normal and poorly pollinated strawberry. The poorly pollinated berry is small and tends to be misshapen, especially in areas where seeds are entirely missing.
have, however, been instances where raspberry growers have placed hives of bees in their fields because of insufficient local bee populations. A grower should watch his field closely during the bloom period to make certain that honey bees are present. If populations of native bees decline, it may be necessary to place hives of bees in the field. Examination of the fruit may also help determine whether enough bees were present during bloom. However, small crumbly raspberries or misshapen strawberries can also be due to other factors.

Since blueberries are highly dependent upon bees for fruit set, many growers place hives of honey bees in their fields at blossom time. Information on numbers and placement of colonies can be obtained from E.M. 2618, Suggestions for Pollination of High-Bush Blueberries, available from the WSU Cooperative Extension Service.

Protecting the Pollinators

Many insecticides used on berries are highly toxic to honey bees and other pollinators.

If hives of bees are set in or near berry fields, most people are likely to be careful with insecticides. However, the populations of honey bees that most strawberry and raspberry growers depend on are often taken for granted with little thought about their protection. Some of these honey bees may be from wild colonies, but many are from hives owned by local beekeepers. Insecticides should be used very carefully on berries during the blooming period to protect the grower’s pollinators and his neighbors’ bees.

Some insecticides should never be used during blossom time. Others can be used in the late evening when bees are not foraging. A few can be used safely any time. Consult your County Extension Agent concerning the safety of insecticides to bees before you apply them to blooming fields. A listing of the relative hazard of different insecticides is presented in WREP 0015.

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Assistance from Washington State University is available to all persons, without regard to race, color, or national origin.

Use pesticides with care. Read the label and follow its directions. Never smoke while using pesticides and avoid breathing the spray or dust. Wear natural rubber gloves when handling pesticides. Wash hands and face carefully with soap and water after applying. If insecticides are spilled on skin or clothing, remove contaminated clothing and wash skin thoroughly. Store pesticides in their original containers and be sure labels remain on the containers. Keep containers away from food or feed and out of reach of children or irresponsible persons.