

Weed Monitoring and Factors Affecting Weed Control

Knowing the weed species present and the extent of the spread can provide you with valuable insight on possible control strategies.

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Weed Identification

Numerous university websites have online resources with pictures of weeds, including the [Penn State Center for Turfgrass Management](#). The book, *Weeds of the Northeast* by Uva, Neal, and DiTomaso, is an excellent reference to help in identifying weeds. It has color pictures and helpful keys to identify the weeds.

Not all weed problems need to be controlled by a blanket application to the tree rows. Some weeds introduce themselves into orchards in discrete patches rather than over the entire orchard floor. Quackgrass, nutsedge, and thistle tend to enter an orchard in one area and then jump in patches. Weeds that produce fruit and seeds for animals to disperse may also typically develop in patches. Site-specific herbicide applications to these “patch communities” will be more cost-effective as long as they are timed appropriately. On the other hand, weed species that depend primarily on wind dispersal of their seeds may spread evenly over the orchard; a good example is dandelions and their light, airy seeds. This is also a point of attack for control. Destroy weeds before they flower and shed seeds. Pay particular attention to the edge of your orchard or along the roadsides. In the late summer and early fall scout your orchard for weeds, and map out the weed patches. Try to identify any weeds you are unsure of. Destroy weeds in flower before they shed seeds. This is very important around field edges and along roadsides.

Plant Factors Affecting Weed Control

Several characteristics of specific plants interact with the efficacy of herbicides. Contact herbicides will be ineffective if the growing point of the weed is either protected in a sheaf of leaves or below the soil surface. Plants that have narrow or upright leaves can contribute to herbicide runoff as compared to plants with broad or flat leaves. Plants with thick wax or cuticle layers, such as yellow toadflax, can prevent herbicide entry to the leaf and the waxy surfaces can cause the spray mix to form droplets, which can run off of leaves. Dense leaf hairs can hold spray droplets away from the leaf. Young, rapidly growing plants are more susceptible to herbicides. Seedlings are very susceptible to most weed control methods. Some perennial plants can be very susceptible to systemic materials just prior to their blooming.

Site Factors Affecting Weed Control

The orchard site can influence the response of the weeds to herbicides. The primary influencing factor is soil texture. Soils that are heavier—either having higher amounts of clay or higher amounts of organic matter—may require higher rates of herbicides. Control in these types of soils may also not be as long as on lighter soils. On the other hand, overdosing and causing herbicide injury may be easier on lighter soils.

Source: [Penn State Tree Fruit Production Guide](#).

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