Preemergence Herbicide Use in the Nursery and Landscape

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Weed control in the nursery and landscape differ in purpose, but are equally important. The major challenge, and difference as compared to other crops, of ornamental weed control is the diversity of plant material. Due to this diversity, herbicide choice must be carefully considered prior to application. Regardless of nursery or landscape situations, the primary method of weed control in ornamentals should be via two applications of preemergence herbicides, once in the spring and once in the fall. Though usually more expensive than postemergence herbicides, preemergence herbicides are less likely to cause damage to ornamentals, require less labor throughout the growing season, and are less likely to contribute to the weed seed bank.

Spring applications of preemergence herbicides will prevent summer annuals, while fall applications will prevent winter annual weeds. These timings are based on the life cycle and germination of each of these types of weeds. Some perennial weed populations that reproduce by seed will also be reduced over time by the use of preemergence herbicides. Many operations will only use preemergence applications in the spring, but to have a complete weed control program a fall application is also important. The fall application window is usually missed because the applications are made too late. Late summer to early fall is when winter annual weeds are germinating, not in mid-to-late fall.

By implementing an effective preemergence herbicide program, labor costs decrease, herbicide phytotoxicity decreases, the weed seed bank is reduced and depleted over time, crop competition is decreased, and landscape aesthetics are increased.

Figure 1. The threshold for weeds in a landscape is much different than nursery crop production.
Figure 2. Row of nursery field production applied with flumioxazin (a preemergence herbicide) in the fall.
Figure 3. Weeds have a much greater negative impact on crops grown in containers. Preemergence herbicides can reduce the labor needed for hand-weeding, while being less phytotoxic than postemergence applications.