

Weekly Newsletter
from Agresource Inc.
for turning waste into
opportunity

Takeaway

Pre-emergent herbicides work by disrupting the early growth stages of germinating seedlings, preventing weeds from becoming established. While highly effective, they can also affect desirable seeds if planting occurs too soon after application.

Understanding the mode of action, following label restrictions, and carefully planning planting schedules, landscape professionals and homeowners can achieve effective weed control while successfully establishing new plants.

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*"Nature does not hurry,
yet everything is
accomplished."*
— Lao Tzu

Understanding Pre-Emergent Herbicides: How They Work

What Are Pre-Emergent Herbicides?

Unlike post-emergent herbicides that kill existing weeds, pre-emergent herbicides target weed seeds during the germination process. They do not prevent seeds from germinating entirely; rather, they interfere with critical developmental stages immediately after germination, preventing seedlings from successfully establishing.

When applied to the soil surface and activated by rainfall or irrigation, pre-emergent herbicides create a protective barrier in the upper layer of soil where weed seeds typically germinate.

Mode of Action

Most commonly used pre-emergent herbicides work by disrupting cell division and root or shoot development in newly germinated seedlings. These herbicides interfere with the formation of microtubules, structures that are necessary for cells to divide and grow. As a result, weed seedlings may germinate but are unable to develop normal roots or shoots and die shortly after emergence.

Because established plants already possess mature root systems and developed tissues, they are generally unaffected when products are applied according to label directions.

Why New Seedings Are Sensitive

The same biological processes that make pre-emergent herbicides effective against weeds can also impact desirable seeds. Newly seeded turfgrass, wildflowers, vegetables, and ornamental plants rely on root and shoot development during germination. If seeds are planted into soil containing an active pre-emergent barrier, they may fail to establish or emerge unevenly. This is why most labels caution against seeding for a specified period following application.

How to Work Planting Around Pre-Emergent Applications

Successful planting requires understanding the residual activity of the herbicide being used.

Before Applying Pre-Emergent

If seeding is planned, complete the seeding project first and allow seedlings to become fully established before applying a pre-emergent product. Many turf managers delay pre-emergent applications in areas scheduled for renovation or overseeding.

After Applying Pre-Emergent

Waiting periods vary by product, application rate, soil type, and environmental conditions. Some products may remain active for several months.

