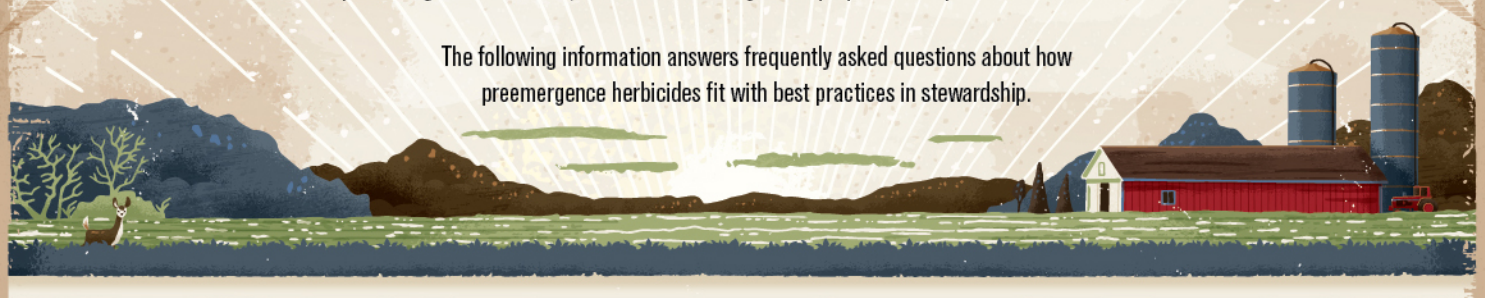
TAKE STEWARDSHIP & WEED MANAGEMENT TO THE NEXT LEVEL

FMC

Soybean growers are driven to cultivate healthy crops that register high yields. Being a good steward can help you do that. So can incorporating a weed management program that involves the timely application of preemergence and postemergence herbicides, with consideration given to proper and responsible use of chemicals.

The following information answers frequently asked questions about how preemergence herbicides fit with best practices in stewardship.



WHY APPLY A PREEMERGENCE HERBICIDE?

Weeds compete with the crop for nutrients, space and light. Preemergence herbicides prevent early season weed growth and reduce the weed seed bed. When weeds aren't allowed to grow, crops thrive.

4-8" TALL WEEDS CAN REDUCE SOYBEAN YIELDS BY AS MUCH AS 6 BUSHELS PER ACRE

WEEDS CAN GROW 1" PER DAY

Preemergence herbicides provide extended weed control, allowing for better results from post control applications.

RPO residuals continue to provide the best control of Palmer pigweed & waterhemp.

PREEMERGENCE HERBICIDES REDUCE THE WEED SEED BANK.

SUMMER

Waterhemp and Palmer pigweed can produce up to

1,000,000

seeds per plant

SPRING

Preemergence herbicides prevent weeds from coming up and competing for nutrients.

FALL

As part of a fall burndown program, herbicides keep winter annuals from emerging in the spring.

HOW IMPORTANT IS A WEED MANAGEMENT PLAN?

Weed resistance is forcing growers to change the way they manage their acres. Crafting a year-long weed control plan is necessary to start clean and stay clean. Every field must be evaluated to ensure optimal weed management. Be sure to consider:

- Cultural practices
- Crop rotation
- Herbicide rotation
- Multiple modes of herbicide action
- Back-to-back applications of herbicides containing ALS or single modes of action may result in increased potential for herbicide carryover, herbicide stacking and potential crop injury

WHAT IS THE VALUE OF MORE THAN ONE MODE OF ACTION?

A singular mode of action is no longer enough to stem resistance while controlling tough and resistant weeds. Multiple modes of action are at the core of a "start clean, stay clean" approach to weed control. In short, incorporating different chemistries boosts control.

1. It is highly effective to overlap residual herbicides—multiple modes of action—to extend protection.
2. Combining preemergence herbicides with traditional post weed control applications is the best way to protect yield and practice good stewardship.

PRE POST

MULTIPLE MODES OF ACTION DELIVER MANY BENEFITS

- Reduce weed resistance
- Manage a variety of weeds
- Help eliminate the weed seed bed
- Control primary and secondary weeds

Application Rates

Soil Organic Matter*	Authority® First DF (Dry Ounces per Acre)**	Product Use Rates (Pound Active Ingredient Per Acre)	
		Sulfentrazone	Cloransulam-methyl
3% or less	6.45	0.25	0.032
Greater than 3%	8.00	0.31	0.040

*Do not apply Authority First DF Herbicide to soils classified as sand with less than 1% organic matter.
**Maximum application rates.

LABELS PROVIDE VALUABLE INFORMATION

Good stewardship means paying attention to product labels. Label information can help generate the greatest impact from multiple products, as well as avoid any issues regarding crop response, potential carryover or over-use. Disregarding label directions, such as application rates, can lead to undesirable crop response, product failure and a negative environmental impact. Remember that when tank mixing preemergence herbicides, follow the most restrictive use rates and precautions of the mixing partners.

HRAC (Herbicide Resistance Action Committee) codes help growers plan chemistry rotations to avoid over-use

- Application timing
- Restrictions
- Warnings
- Recrop statements

WHAT PART DOES SOIL PLAY IN HERBICIDE EFFECTIVENESS?

First, when using soil-applied products—preemergence herbicides—make sure the seed furrow is closed and the seed is covered with soil. Next, keep in mind that the effectiveness of preemergence herbicides is dependent on soil characteristics. Each field possesses specific soil characteristics that can impact product efficacy, application rates, and crop tolerance of a herbicide. It is important to frequently sample the soil to accurately evaluate pH and other soil characteristics. Remember, the herbicide zone is in the top 2 to 3 inches of soil, so the sample for herbicide selection purposes should be taken accordingly. A soil's texture and organic matter can play an important role in how well and how long a residual herbicide controls weeds. These characteristics also dictate application rates needed to provide acceptable weed control.

Coarse soils with low organic matter generally require lower rates of preemergence herbicides to achieve the desired weed control. Because these soils have lower capacity to absorb the herbicide, more herbicide becomes available to the plant. As a result, the herbicide is more active to control weeds, but can also raise the risk of crop response at higher than recommended rates.

Heavier soils with higher organic matter generally require higher rates of preemergence herbicides to achieve acceptable weed control. Since these soils absorb greater amounts of herbicides, making them less available for uptake, the risk of undesirable crop response in these soils is lower. Because herbicides can be bound in soils by organic matter, lower than recommended rates on these soil types can result in less than optimal weed control.

Always read and follow label directions. Take special care to note:
- **Restrictions for combining products with the same modes of action and/or class of chemistry**
- **Restrictions involving soil types, soil pH and rates**

pH

Soil pH can impact herbicide activity. For example, calcitic soils slow the degradation of some herbicides, leading to greater potential for undesirable herbicide carryover. Be aware of the ag lime cycle and its impact on variability (over time) of soil pH when determining herbicide use. Timely soil sampling is an invaluable tool in this instance.

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Rainfall and Soybean Stunting – Soybean stunting can occur if excessive rainfall occurs after application but before soybeans emerge. Injury is more prevalent under poor drainage or compacted conditions or when soil is saturated for long periods of time. Soybeans outgrow stunting once favorable growing conditions return.

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