
Weed Control Guide For Ohio and Indiana

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“Corn Herbicide Management Strategies”



Corn Herbicide Management Strategies

Preemergence herbicide programs have long been the mainstay of weed management in corn, due in large part to the low cost of atrazine and its broad spectrum of control. A total preemergence approach can still be effective in fields with low to moderate populations of most annual weeds. The commonly used premix of atrazine plus an acetamide herbicide (Bicep II Magnum, Degree Xtra, Keystone, etc) can be supplemented as necessary with Balance, Python, Callisto (Lexar, Lumax), Hornet, or simazine to improve control of weeds such as fall panicum, triazine-resistant lambsquarters, giant ragweed, and velvetleaf. In fields with moderate to high weed populations, a preemergence plus postemergence approach will provide more consistent control with less risk of corn injury. A number of options are available for this type of program at a reasonable cost. A preemergence plus postemergence approach is especially effective in fields with giant ragweed, burcucumber, moderate to high annual populations of annual grasses and triazine-resistant lambsquarters, and perennial weeds. A number of effective total postemergence herbicide programs are also available. However, research indicates that total postemergence programs lacking residual activity should be used only in fields with low weed populations. A total postemergence herbicide program should be applied before most weeds in a field exceed 2 to 4 inches in height, and reinfestation with later-emerging weeds is likely if a herbicide with residual activity is not included.

Preemergence Corn Herbicide Programs

Total preemergence (PRE) herbicide programs fit fields with:

- low to moderate annual grass populations
- low giant ragweed populations
- any level of population of most annual broadleaf weeds

Total preemergence programs do not fit fields with:

- high grass populations
- moderate to high giant ragweed, cocklebur, velvetleaf, and annual morningglory populations
- perennial weeds
- burcucumber

Advantages of PRE programs:

- one-pass, can apply while planting
- with adequate rain, provides control through the first 6 weeks, and later-emerging weeds have little impact on corn yield
- effective on many annual grass and broadleaf weeds

Disadvantages of PRE programs:

- dependence upon adequate rain within narrow period of time
- not effective enough on tough broadleaf or perennial weeds or in high grass populations
- corn needs to be competitive with weeds earlier in season compared to PRE plus POST programs

Approaches:

Atrazine premix products (Lexar, Harness Xtra, etc) or similar mixes are effective broad-spectrum treatments for fields suited to total preemergence.

- can add simazine or Balance Flexx to improve grass control (or use a mixture of Radius + atrazine)
- can add Balene Flexx to improve consistency under low rainfall conditions
- can add Balance Flexx, Callisto, Python, or Hornet to improve triazine-resistant lambsquarters, giant ragweed, and velvetleaf control, or apply premix products that contain these herbicides.
- atrazine rates of 1.5 to 2 lb/A can improve control of velvetleaf and giant ragweed. Some premix products have less than 1.5 lbs/A

Preemergence plus Postemergence Corn Herbicide Programs

Preemergence (PRE) plus Postemergence (POST) herbicide programs fit any field, but are especially well-suited for fields with:

- moderate to high annual grass populations
- moderate to high giant ragweed, cocklebur, velvetleaf, and annual morningglory populations
- perennial weeds
- burcucumber

Advantages of PRE plus POST programs:

- very consistent, as long as some rain on PRE
- creates wider window for POST application, compared to total POST programs
- good on many tough weeds

Disadvantages of PRE plus POST programs:

- dependence upon rain for PRE activity (although have planned POST backup)
- two-pass
- cost

Approaches:

In fields with low to moderate grass populations, can take an approach of preemergence grass herbicide followed by postemergence broadleaf herbicide (without much grass activity). Examples:

- Outlook followed by dicamba + atrazine
- TopNotch followed by Hornet + Clarity

To provide postemergence control of a few grass escapes, can take an approach of a preemergence grass or grass and broadleaf herbicide followed by a postemergence broadleaf herbicide that also has activity on small grasses. Examples:

- Dual II Magnum followed by NorthStar or Celebrity Plus
- Outlook followed by Distinct + atrazine
- Guardsman Max followed by Impact

In fields with moderate to high grass and/or problem broadleaf populations, can take an approach of preemergence grass or grass+broadleaf herbicide (full or reduced rate) followed by broad-spectrum postemergence herbicide with grass and broadleaf activity. Examples:

- Cinch ATZ followed by Steadfast ATZ
- atrazine + simazine followed by Lightning + Status (Clearfield corn)
- Corvus followed by Ignite (Liberty Link corn)
- Harness Xtra followed by glyphosate (RR corn)

Total Postemergence Corn Herbicide Programs (with residual)

Total postemergence (POST) herbicide programs that provide substantial residual control can be used in fields with:

- most annual weed populations

Avoid use in fields with:

- perennial broadleaf weeds (might emerge too late for control)
- high giant ragweed and annual grass populations

Advantages of total POST with residual:

- one-pass, can plant first and apply later
- not dependent upon rainfall for postemergence activity (although soil moisture status affects weed response to herbicides)
- consistent control of many annual weed populations

Disadvantages of total POST with residual:

- should be applied before weeds exceed 2 to 4 inches in height to avoid yield loss
- application too early for best perennial weed control
- need rain within 2 weeks of application for residual activity

Approaches:

Can make a single postemergence application before weeds exceed 4 inches in height with mix of postemergence herbicides with grass and broadleaf activity and residual herbicides with primarily broadleaf activity (if grass population not high). Examples:

- Ignite + atrazine (Liberty Link corn)
- glyphosate plus atrazine (glyphosate-resistant corn)
- Steadfast ATZ + Callisto
- Option + Marksman

In fields with moderate to high grass pressure, may need residual component with more activity on grasses than those listed above. Examples:

- Glyphosate + Degree Xtra (glyphosate-resistant corn)
- Halex GT (glyphosate-resistant corn)
- Ignite + atrazine/chloroacetamide premix (Liberty Link corn)