

Importance of Preplant Incorporated and Preemergence Herbicides in Peanut Production

Emi Kimura, James Grichar, Pete Dotray, and Josh McGinty

Best Management Practices (BMPs) for peanut production include effective season-long weed management. Below are four weed management principles in peanut production.

1. Start clean
2. Use residual herbicides
3. Timely postemergence applications
4. Know your weeds

Early season weed management is most important which means weed control later in the season should be easier. There are roughly five critical herbicide application timings in peanut production (Table 1). These application timings include preplant burndown (PP), preplant incorporated (PPI), preemergence (PRE), early postemergence (EPOST), and postemergence (POST) applications. Yield losses are minimized when peanuts are free of weed competition for the first 4-6 weeks after planting. The use of PP, PPI, and PRE herbicides are critically important for minimizing weed competition during the early season. April is a good time for planning/applying PP and PPI herbicides in your peanut fields while PRE herbicide applications are made at-planting.

Table 1. Timing of herbicide application in peanut

PP	PPI	PRE	EPOST 10-20 DAP	POST 30-45 DAP
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*DAP: Days after planting

Preplant burndown

Early emerging weeds such as Russian-thistle and kochia can be controlled by tillage or use of burndown herbicides. One of the strengths of paraquat (Gramoxone) is Russian-thistle, and glyphosate (Roundup PowerMax and other generics) is effective on a broadspectrum of annual and perennial grass and broadleaf weeds.

Preplant incorporated

Preplant incorporated herbicides labeled for peanut include ethalfluralin (e.g., Sonalan 3EC and generics), pendimethalin (e.g., Prowl H₂O and generics), and trifluralin (e.g., Treflan and generics). These dinitroaniline herbicides (also known as yellow herbicides) are effective on annual grasses and small-seeded broadleaf weeds such as Palmer amaranth (carelessweed or pigweed), Russian thistle (tumble weed), and kochia (iron weed). They are ineffective at controlling large-seeded broadleaf weeds such as cocklebur, sunflowers, and sedges (yellow and purple). Use of a PRE herbicide will enhance control of some of these weeds. Please read the label carefully for recommendations regarding effective incorporation methods for these PPI herbicides. If the incorporation is too deep, and peanuts are planted shallow, peanut roots from planted seed have to go through treated soil which can result in stunting.

Preemergent herbicides

The use of a PRE herbicide can be effective at controlling annual broadleaf and sedge weeds. There are several options for PRE herbicides in peanut. They are flumioxazin (e.g., Valor, Panther, Rowel, and other generics), S-metolachlor (e.g., Dual Magnum and generics), dimethenamid (e.g., Outlook and generics), acetochlor (Warrant), and imazethapyr (e.g., Pursuit and generics). PRE must be applied and activated before weed emergence and some must be applied prior to peanut emergence to avoid crop injury. Please read labels carefully for incorporation methods (irrigation, mechanical, etc.), application rates, application timing, and grazing or feeding restrictions. Flumioxazin should be applied prior to planting and up to 2 days after planting and before peanut emergence. It provides 4-6 weeks of residual activity for controlling Palmer amaranth, golden crownbeard, morningglory species and other weeds. Crop injury can occur if flumioxazin is applied 3 days after planting. Severe stunting can occur with flumioxazin if applied alone or in combination with S-metolachlor under cold, wet soils or water logged conditions and peanuts may never recover during the growing season. Acetochlor and dimethenamid provide good residual control of grass weeds and small-seeded broadleaf weeds, and can control ALS-resistant Palmer amaranth.

It is important to read the label carefully, especially on application rates based on your soil types, feeding restrictions, rain-free periods, rotation restrictions, herbicide groups, and other issues.



Texas Peanut Variety website at <http://varietytesting.tamu.edu/peanuts/>