

Herbicide Update and Weed Management in Peas and Beans

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A good weed control program considers the weed species that need to be controlled, crop safety, not only under optimum growing conditions but also when conditions are adverse, and herbicide carryover and options available for following crops. Since peas and snap beans mature quickly, and peas are planted very early, follow crop options are more important than in full season crops.

The herbicides recommended in the mid Atlantic states for controlling weeds in peas are Pursuit (imazethapyr), Dual Magnum 7.62EC (s-metolachlor), Command 3ME, Poast 1.5EC (sethoxydim), Select 2EC/SelectMax 0.97EC (clethodim), AssureII (quizalofop), and Basagran 4SC (bentazon),

The herbicides recommended in the mid Atlantic states for controlling weeds in snap beans are Treflan 4EC (trifluralin), Eptam 7EC (EPTC), Dual Magnum 7.62EC (s-metolachlor), Command 3ME, Dacthal 6F (DCPA), Poast 1.5EC (sethoxydim), Select 2EC/SelectMax 0.97EC (clethodim), Basagran 4SC (bentazon), Sandea 75DF (halosulfuron), and Reflex 2SC (fomesafen).

Treflan 4EC is recommended for use in snap beans, and is labeled but not recommended for peas due to the potential for crop injury, especially when conditions after planting are cold and wet. Treflan 4EC controls annual grasses and suppresses or controls a few broadleaf weeds, but use alone may result in annual grass control and broadleaf weed problems. The label requires applications to be made preplant incorporated. Research has indicated that incorporation can be accomplished with a finishing disk or field cultivator with sweeps, and that two passes at right angles to achieve the good results. A single slow pass with PTO driven tillage equipment provides the best mixing of the herbicide and soil. The plantback restriction for most unlabeled crops is 5 months, but longer for beets and spinach. Follow crop options are available due to the large number of vegetables on the label.

Eptam 7EC is only labeled and recommended for use in snap beans. Eptam 7EC controls annual grasses and suppresses or controls a certain broadleaf weeds, but use alone may result in escapes that result in broadleaf weed problems. Eptam is volatile, so the label requires applications to be preplant incorporated immediately after application. A delay in incorporation of 20 minutes can result in the loss of a significant amount of herbicide by evaporation and reduced weed control. Incorporate using the same methods as Treflan. Eptam does not have plantback restrictions after snap bean harvest.

Pursuit is only recommended for use in peas. Pursuit controls many annual broadleaf weeds and certain annual grasses, but use is limited by the long 48 month plantback restriction for most vegetable crops. Pursuit is not labeled for peas in New England.

Dual Magnum 7.62EC is recommended for use in peas and snap beans. Dual Magnum 7.62EC controls annual grasses and suppresses or controls a certain broadleaf weeds, including nightshade, but use alone may result in annual grass control and broadleaf weed problems. Common lambsquarter is a frequent problem in fields treated with Dual Magnum. The label allows applications to be made preplant incorporated or preemergence. Preplant incorporation improves control of yellow nutsedge. Preemergence applications are more effective for the control of small seeded annual broadleaf weeds such as nightshade species when rainfall or irrigation can activate the herbicide before weed emergence. Follow crop options are available due to the large number of vegetables on the label.

Command 3ME is recommended for use in peas and snap beans, but snap beans are less tolerant to Command than some other labeled crops. Recommended rate for peas is 0.188 to 0.38 pounds of active ingredient per acre and for snap beans between 0.125 and 0.25 pounds of active ingredient per acre. Some early injury may be observed as a whitening of the edges of some of the leaves after emergence. Excellent control of annual grasses and many broadleaf weeds can be obtained with Command, but pigweed and carpetweed frequently escape and can cause serious problems. Preemergence applications cause less crop injury, and provide better weed control, but vapor drift of Command 3ME, although less than the old 4EC formulation, can still affect vegetation in adjacent fields. An alternative application technique is a preemergence application that is incorporated immediately after application about one quarter of an inch deep between the rows with rolling basket cultivators, a rotary hoe or with irrigation. Follow crop options are available due to the number of vegetables on the label.

Dacthal 6F is only labeled and recommended for use in snap beans. Dacthal 6F applied preemergence controls annual grasses and suppresses or controls certain broadleaf weeds, including common lambsquarter and common purslane, but use alone may result in annual grass control and other broadleaf weed problems. Nightshade and galinsoga are frequent problems in fields treated with only Dacthal. Preemergence applications are more effective when rainfall or irrigation can activate the herbicide before weed emergence. Follow crop options are available due to the large number of vegetables on the label.

Poast 1.5EC, Select/SelectMax, and Assure II/Targa 0.88EC are labeled and recommended for use in peas and snap beans to control annual and perennial grasses postemergence. Add oil concentrate to Poast, Select, or AssureII/Targa to be 1 percent of the spray solution (1 gallon per 100 gallons of spray solution) or nonionic surfactant to SelectMax to be 0.25 percent of the spray solution (1 quart per 100 gallons of spray solution). For best results, treat annual grasses when they are actively growing and before tillers are present. Repeated applications may be needed to control certain perennial grasses. Yellow nutsedge, wild onion, and broadleaf weeds will not be controlled. Do not tank-mix with other pesticides unless labeled, as the risk of crop injury may be increased or reduced control of grasses may result. . Follow crop options are available due to the large number of vegetables on the label.

Basagran 4SC is recommended for use in peas and snap beans. Peas should be treated after they have more than 3 pairs of true leaves, but before bloom. Snap Beans should be treated when the beans have 1 to 3 fully expanded first trifoliate leaves. Earlier application will result in an increased risk of crop injury. Later application may split the pod set. Use lower rate to control common cocklebur, mustards, and jimsonweed and the higher rate to control yellow nutsedge, common ragweed, and Canada thistle. Common lambsquarter and smooth pigweed control may

not be acceptable. Temporary, pronounced crop injury may be observed that can result in delayed maturity. The use of oil concentrate may increase the risk and severity of crop injury. To reduce the risk of crop injury, omit additives or switch to a nonionic surfactant when weeds are small and soil moisture is adequate. Do not spray when temperatures are over 90°F (32.2°C). Basagran does not have plantback restrictions after harvest.

Sandea 75WDG is recommended for use in snap beans to control broadleaf weeds and yellow nutsedge. Sandea may be applied preemergence or postemergence, depending on the target weeds, to suppress or control many broadleaf weeds and yellow nutsedge.

Apply preemergence after seeding to control the largest number of annual broadleaf weed species. Irrigate to activate the herbicide if rainfall is not imminent after application. Weed control failures may occur if activating moisture is not provided. Sandea will not control grasses, and may not control or only suppress common lambsquarter and certain other broadleaf weeds, especially if moisture for herbicide activation is delayed. Tank-mix with another herbicide to control annual grasses and broadleaf weeds known to be present in the field and are not controlled by Sandea.

Apply postemergence to control certain broadleaf weeds, including smooth pigweed and galinsoga, and to control yellow nutsedge. Add nonionic surfactant to be 0.25% of the spray solution. Do not use oil concentrate. The number of broadleaf weeds controlled by Sandea applied postemergence is less than the number controlled by preemergence applications, but yellow nutsedge control is more consistent when treated postemergence. Apply Sandea when the crop has 2 to 3 trifoliolate leaves. Target broadleaf weeds should be less than 2 inches in height. Delay the application when yellow nutsedge is the target, to allow the perennial sedge time to emerge and develop a leaf canopy to intercept the spray, but treat before the crop has more than 3 trifoliolate leaves.

Extensive testing at Rutgers and other mid Atlantic universities has established that the margin of crop safety for Sandea is good when it is used to control weeds in snap beans. Some temporary crop injury has been observed when postemergence treatments are applied to a rapidly growing crop and “soft” growing conditions prevail. The injury appears about 5 to 7 days after treatment, and is seen as a light green or yellow color in the new growth. The color of the shoot tips recovers quickly and appears normal within a week with no affect on yield. Applications after the crop has more than 2 to 3 trifoliolate leaves should be avoided due to the increased possibility of splitting the pod set. Follow crop options are available due to the number of vegetables on the label.

Sandea is an ALS inhibitor. Herbicides with this mode of action have a single site of activity in susceptible weeds. The risk of the development of resistant weed populations is high when herbicides with this mode of action are used continuously and exclusively to control a weed species for several years or in consecutive crops in a rotation. Integrate mechanical methods of control and use herbicides with a different mode of action to control the target broadleaf weeds when growing other crops in the rotation. Observe a thirty (30) day preharvest interval (PHI). Do NOT apply Sandea to crops treated with a soil applied organophosphate insecticide, or use a foliar applied organophosphate insecticide within 21 days before or 7 days after a Sandea application.

Reflex 2SC is recommended in the mid Atlantic states for use postemergence in snap beans. Apply Reflex 2SC when snap beans have one to two fully expanded trifoliolate leaves to control many annual broadleaf weeds. The recommended rate is lower than the labeled rate to reduce the risk of crop injury. Use the lower recommended rate when weeds are small or when plentiful soil moisture, high humidity, and warm cloudy weather cause “soft” growing conditions. Add nonionic surfactant to be 0.25% of the spray solution (1 quart per 100 gallons of spray). Tank-mix with bentazon (Basagran) to improve the control of common lambsquarter. Observe labeled plantback restrictions. Do NOT apply to any field more than once every two years. Use of Reflex is limited by the long plantback restriction for most vegetable crops.

The most commonly recommended herbicide program for weed control in peas is Command or Dual Magnum. preemergence, or a tank-mix of Command and Dual Magnum. Basagran is most often recommended postemergence. The choice between Command and Dual Magnum is made based on weeds anticipated in the field and the following crop to be planted after pea harvest.

The most commonly recommended program for weed control in snap beans is Dual Magnum preemergence followed by Reflex postemergence for large growers that rotate snap beans with field crops. Small direct market growers often cannot adjust to the long follow crop restrictions on the Reflex label. These growers use Dual magnum plus Dacthal preemergence and Basagran postemergence if it is needed. Sandea is also used by both groups, most commonly for yellow nutedge control.