

## Narrowleaf hawksbeard – 2018 Weed of Year

Prior to 2017, narrowleaf hawksbeard (NLHB) occurred in small areas of fields and along roadsides in western North Dakota. There were severe infestations in Canada and Montana but not in North Dakota. In 2017 several fields had very high populations of hawksbeard in North Dakota evident by yellow flowers after plants bolt. NLHB is a new weed for North Dakota growers and land owners did not expect rapid spread. Seed attached to the light pappus allow rapid spread by wind. Correct identification and good weed management practices will be required to prevent further infestation.

Narrowleaf hawksbeard is a winter annual weed that is a serious competitor of crops in western North Dakota crops, especially pulse crops. NLHB emerges primarily in the fall but can also emerge in the spring. However, fall-emerging plants are the most competitive and most difficult to control in the spring. Effective control of fall-emerged plants minimizes yield loss and spreading by seed. There are not effective chemical control options for controlling NLHB postemergence in pulse crops. Control with fall and early spring burndowns herbicides are required.

**Identification:** Narrowleaf hawksbeard is in the Asteraceae family (composite). It is a winter annual that reproduces by seed only. It typically grows 2-3 feet tall, although it may grow taller under more moist and sunny growing conditions. All parts of the plant exude a milky sap. Fall rosette stage NLHB can look somewhat similar to dandelion. However, NLHB leaf lobes protrude straight out rather than toward the center of the plant like dandelion. Leaves on mature plants are long and narrow (~0.5 inch wide). A unique characteristic of NLHB is that some leaf margins roll under toward the midrib. The bright yellow flowers resemble a dandelion or sowthistle flower. Similar to dandelion, seed is attached to a pappus that easily blows in the wind.

**Potential impact:** Under ideal conditions one plant can produce almost 50,000 seeds. Growers have observed NLHB in small areas one year and then almost complete cover the next year. Seeds blow easily in the wind and can spread quickly. One grower reported that dry pea yield was reduced by 65% in a heavily infested field. NLHB can be seen growing on field perimeters, along roadsides, and fencelines. These plants should be controlled to prevent seed from spreading into the field.

**Emergence:** NLHB has a wide emergence period. with plants emerging in late August through late October. This wide emergence window will not control plants with a single herbicide application in the fall. Glyphosate applied to early may miss late emerging plants. Weather may be too cold for delayed herbicide applications.

**Rates:** Herbicides applied at reduced herbicide will not control NLHB (e.g., glyphosate, 2,4-D, dicamba, etc.). Always apply labeled rates to control NLHB.

**Control:** Begin chemical control in the fall. Apply glyphosate at 32 fl oz/A in the fall and spring. Tank mixing glyphosate with other herbicides will increase control. Express (and products that contain tribenuron) and Panoflex are effective fall herbicides. Fall-applied Sharpen is slightly less effective than tribenuron. Glyphosate plus 2,4-D or dicamba are effective but consider crop rotation restrictions with these herbicides. A tank mix with at least two modes of action will increase control since some populations in Canada are Group 2 resistant.

The herbicides mentioned previously will control emerged plants but not plants that emerge in late August through October. Delayed application may control some late-emerged plants but not provide adequate residual control.

Soil-applied Valor will provide residual control is effective on several winter annual weeds. Glyphosate + Valor + 2,4-D may control emerged plants and provide residual control of late-emerging plants. This combination can applied in late September or early October. Late October applications have been effective on other winter annual weeds.

Be aware of crop rotation restrictions with any herbicides used. Banvel, Clarity and most other herbicides do not allow counting months when ground is frozen months as part of the rotation restriction. Valor does allow counting months when the ground is frozen. Valor can be applied at 2 oz/A on November 1 and plant lentil on May 1 (6 months). Valor at 3 oz/A of Valor will require application by October 1 to plant lentil on May 1 (7 months). See Table 1 below for Valor crop rotation restrictions.

Table 1. Crop rotations restrictions following Valor.

Crops	Up to 2 oz	2 to 3 oz
Soybean	Immediately	Immediately
Sunflower, wheat	30 days <sup>1</sup>	2 months <sup>1</sup>
Pea, barley, dry bean, flax, safflower, chickpea	3 months	4 months
Lentil	6 months	7 months
Oat	4 mo tilled 8 mo no-till	5 mon tilled 10 mo no-till
Canola + other crops not listed <sup>2</sup>	4 mon tilled 8 mo no-till	6 mo tilled 12 mo no-till

<sup>1</sup>>1 inch of rainfall must occur between application and planting.  
<sup>2</sup>Successful bioassay must be performed prior to planting.

There are no crop rotation restrictions on the Clarity label if applied 120 days or more before crop planting. The 120 days require non-frozen soil.

Below are some recommendations for NLHB control. This list is not all inclusive and is not listed in order of best control. Consider crop rotation restrictions when choosing herbicides.

**Fall:**

1. Glyphosate + Express (or Panoflex) +/- 2,4-D
2. Glyphosate + Sharpen +/- 2,4-D
3. Glyphosate + 2,4-D
4. Glyphosate + dicamba
5. Glyphosate + Valor +/- 2,4-D

**Spring burndown:**

1. Glyphosate
  2. Glyphosate + Express
  3. Glyphosate + 2,4-D
  4. Glyphosate + dicamba
  5. Glyphosate + Sharpen\* +/- 2,4-D - apply before bolting for best control.
- \*Apply Sharpen with MSO adjuvant at 1.5 pt/A.

The following are herbicide options for NLHB control in wheat:

Affinity BS + 2,4-D

GoldSky

Huskie

Kochiavore Quelex

Starane Flex + 2,4-D

Talinor

Always apply a fall-burn down and spring soil-applied residual herbicide for narrowleaf hawksbeard control!

Photo 1. Rosette narrowleaf hawksbeard.



Photo 2. Flowering narrowleaf hawksbeard in field pea.

