

Blue Mustard Control

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Blue mustard is a troublesome weed in winter wheat and alfalfa in central and western Nebraska. This NebGuide discusses methods of control.

Life History

Blue mustard [*Chorispora tenella* (Pallas) D.C.] was introduced into the United States from Siberia in 1929 and was first reported in Lewiston, Idaho. It was identified in Keith County, Nebraska in 1953.



Blue mustard flowers are bluish-purple to purple and typically appear in early April.

Blue mustard is a winter annual weed, with seed germinating in late summer and fall. The plant overwinters as a rosette. The flower stalk usually elongates, a process known as bolting, in March. With mild February weather, bolting may occur in early March. Cold weather in February results in late March elongation. Typically, other common mustard species such as tansy [*Descurainia pinnata* (Walt.) Britt] or tumble [*Sisymbrium altissimum* L.] mustard begin bolting two or three weeks after blue mustard. Blue mustard flowers are bluish-purple to purple and typically appear in early April. Viable seed can be produced approximately 10 days after bloom. Blue mustard is a problem in winter annual crops such as winter wheat, perennial crops like alfalfa, and noncrop areas such as roadsides and railroad right-of-ways.

Problem

Blue mustard is more difficult to control with 2,4-D than other mustard species. Early April application of 2,4-D gives excellent control of tansy and other mustards but only fair control of blue mustard because it has already bolted. Blue mustard flowers very early, and 2,4-D is often applied too late to be effective.

Blue mustard competition early in the spring reduces wheat yields. In Washington state, competition also occurs during the winter. One blue mustard plant per square foot growing with wheat in the winter reduced yields 13 percent, while allowing blue mustard to mature reduced wheat yields 28 percent (*Table I*).

Table I. Reduction in winter wheat yields by blue mustard.^a

Growth period	Blue mustard plants/ft ²		
	1	3	9
	————— % yield reduction —————		
Fall to spring	13	21	29
Fall to maturity	28	42	51

^aAdapted from Swan, D.G. *Competition of blue mustard with winter wheat*. 1971. *Weed Science* 19:340-342.

Control

Rotations. Changing the crop rotation is suggested for heavily infested fields. Including a spring seeded crop such as corn, sorghum, soybean, oat, proso millet or sunflower in the rotation breaks the life cycle of blue mustard. This will reduce the blue mustard population in future winter wheat crops as the seed bank gradually decreases. Blue mustard plants must be killed before they produce seed prior to planting late spring crops. If early spring crops such as oat are planted,



Blue mustard is a problem in winter annual crops such as winter wheat, and it bolts and flowers two or three weeks before other common mustard species.



Blue mustard often invades a field from the edges, and in many fields, only field edges may need to be treated.

blue mustard must be killed before planting with tillage or a contact herbicide. It also may be necessary to spray the oat with a herbicide to kill late germinating blue mustard.

Winter Wheat. Winter wheat should be planted as near the optimum planting date as possible. Tilled ground should be firmed by rodweeding just before wheat planting. It's very important to scout fields after wheat emergence and in February in order to determine blue mustard populations. This is especially true if significant precipitation occurs shortly after winter wheat is seeded. Note the location of blue mustard patches when they flower so these areas can be scouted in subsequent years. Roadsides and field borders should be sprayed to keep blue mustard from spreading into winter wheat fields. Blue mustard often invades a field from the edges, and in many fields, only field edges may need to be treated.

If blue mustard emerges with the winter wheat, consider using a sulfonylurea herbicide such as Ally or Amber. These herbicides may be applied postemergence in the fall to wheat with at least two leaves fully emerged. Do not tank mix 2,4-D with a sulfonylurea herbicide in the fall or serious crop injury could occur. Apply herbicides before freezing temperatures slow weed growth.

The best time for spring herbicide application is when blue mustard is in the rosette stage. Typically, this occurs from late February to about March 15, depending on weather and location in the state. Control decreases after blue mustard bolts (*Table II*). It is a common mistake, especially with 2,4-D, to spray too late, and control is diminished because blue mustard plants become too large. In the spring, use 2,4-D ester or amine alone or with a sulfonylurea herbicide such as Finesse or Peak. Do not use Maverick herbicide for blue mustard control. Although Maverick is a sulfonylurea herbicide, it has not provided good control of blue mustard in university trials. See the current issue of *Guide for Weed Management in Nebraska* (EC130) for herbicide and rate recommendations for both fall and spring applications.

Alfalfa. Karmex 80 DF at 1.5 to 3.0 lb/A, Sencor DF at 0.5 to 1.0 lb/A, Sinbar 80WP at 0.5 to 1.0 lb/A, or Velpar L at 1.0 to 1.5 qt/A can be used on pure stands of alfalfa established one year or longer. Use the lowest rate on soil with less than 1 percent organic matter. Apply the treatment to dormant alfalfa in the fall before the soil freezes. Karmex, Sencor, or Sinbar can also be applied in early spring to dormant alfalfa. These herbicides will also control other mustards and downy brome that infest alfalfa fields.

In seedling alfalfa, blue mustard that emerges in the fall or early spring can be successfully controlled with a postemergence treatment of Pursuit plus Buctril. Blue mustard can also be controlled with late fall or early spring treatment with glyphosate in Roundup-Ready alfalfa.

Herbicides for Noncropland. Roadsides, railroad right-of-ways and waste areas should be sprayed with 2,4-D amine at 16 oz/A + Banvel at 4 to 8 oz/A, Oust at 1 oz/A, or Telar at 0.25 to 0.5 oz/A for blue mustard control. Spray before blue mustard flower stalks begin to elongate.

Table II. Control of blue mustard in winter wheat with herbicides applied November 13, March 6, or April 6 at Paxton, Neb.

Herbicides	Rate oz/acre	Application time		
		November	March	April
		————— % control —————		
Untreated	—	0	0	0
2,4-D amine ^a	16	99	98	46
2,4-D ester ^a	8	99	92	26
Dicamba + 2,4-D amine	4 + 8	94	92	56
Buctril + 2,4-D amine	16 + 8	96	68	85

^a4 lb per gallon acid equivalent.

Acknowledgment

This revision is based on the original NebGuide by Gail A. Wicks, former Extension Weeds Specialist.

Note: To simplify technical terminology, trade names sometimes may be used. No endorsement of products is intended nor is criticism implied of products not mentioned.

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