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## G95-1272 Blue Mustard Control

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## Blue Mustard Control

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

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

### Life History



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 in March. With mild February weather the flower stalk may elongate in early March. Cold weather in February results in late March elongation. The flowers are bluish-purple to purple and appear in early April (*Figure 1*). Viable seed can be produced approximately 10 days after bloom. Blue mustard is a problem in winter annual crops, such as winter wheat.

**Figure 1.**

### Problem

Blue mustard is more difficult to control with 2,4-D than tansy mustard [*Descurainia pinnata* (Walt.) Britt]. Early April application of 2,4-D gives excellent control of tansy mustard but only fair control of blue mustard because the blue mustard has already bolted. Blue mustard flowers very early, and often 2,4-D is 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 during the winter reduced yields 13 percent, while allowing blue mustard to mature reduced wheat yields 28 percent (*Table I*).

<b>Table I. Reduction in winter wheat yields by blue mustard.<sup>a</sup></b>			
	<b>Blue mustard plants/ft<sup>2</sup></b>		
<b>Growth period</b>	1	3	9
	(percent control)		
Fall to spring	13	21	29
Fall to maturity	28	42	51

<sup>a</sup>Adapted from Swan, D.G. *Competition of blue mustard with winter wheat*. 1972. *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 seedbank 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 is planted then blue mustard must be killed before planting with tillage or a contact herbicide. Also, it may be necessary to spray the oat with a herbicide to kill late germinating blue mustard.

**Herbicides--Winter Wheat.** Winter wheat should be planted as near the optimum planting date as possible, and the ground firmed by rodweeding just before wheat planting. If blue mustard emerged with the winter wheat consider using Amber. Amber may be applied postemergence in the fall to wheat in any growth stage. Use 0.28 oz of product/A on soils with pH greater than 7.5. If longer residual control is desired on soils with less than 7.5 pH use 0.35 to 0.47 oz of product/A. Add 1 to 2 qt of nonionic surfactant (minimum of 80 percent spray adjuvant)/100 gallons of spray solution. Use the higher rate of surfactant for dense weed population or when applying Amber in a spray volume of 10 gallons/A or less. Do not mix with 2,4-D in fall. Apply before freezing temperature slow weed growth.

The best time to spray is when blue mustard is in the rosette stage. Late February to about March 15 is the ideal period for herbicide application. Control decreases after blue mustard stems elongate (*Table II*). It is more important, especially with 2,4-D to apply early as spraying "too late" is a common mistake. By waiting until ideal temperatures occur, control often diminishes because blue mustard plants become too large. Use 2,4-D LV4 ester at 8 oz/A, 2,4-D amine at 16 oz/A, Ally at 0.1 oz/A, Amber at 0.28 oz/A, or Finesse at 0.2 oz/A. Add 2,4-D LV4 ester at 4 to 8 oz/A with Ally, Amber, or Finesse to control sulfonyl-urea resistant weeds. Treating with 2,4-D ester at 8 oz/A of 4 lb/gal after November 15 to well tillered winter wheat is another option. Spraying with 2,4-D before this stage may cause injury to the winter wheat.

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

Herbicides	Rate oz/A	Application time		
		November	March	April
		(percent control)		
Untreated	--	0	0	0
2,4-D amine <sup>a</sup>	16	99	98	46
2,4-D ester <sup>a</sup> LV	8	99	92	26
Banvel + 2,4-D amine <sup>a</sup>	4+8	94	92	56
Buctril+2,4-D amine <sup>a</sup>	16+8	96	68	85

<sup>a</sup>4 lb per gallon acid equivalent.

It's very important to examine fields after wheat emergence and in February in order to be prepared to spray if necessary. 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.

**Herbicides--Alfalfa.** Karmex 80 DF at 2.0 to 3.0 lb/A, Sencor DF/Lexone 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 in the fall to dormant alfalfa but before the soil freezes. Karmex, Sencor, Lexone, 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.

**Herbicides--Non-cropland.** Roadsides, railroad right-of-ways and waste areas should be sprayed with 2,4-D amine + Banvel at 16 + 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' elongation.

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