



# Extension Extra

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## Mustard Production (yellow, brown, and oriental)

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**General:** The most commonly grown mustard in the United States is the yellow mustard. The brown and the oriental are not as frequently seen.

Mustards belong to the Cruciferae (mustard) family and the genus Brassica which includes several other crops such as cabbage, broccoli, rape, and turnips. Yellow mustard belongs to the species *B. hirta*; the brown and oriental mustards are in *B. juncea* which is a hybridization of *B. nigra* (black mustard) and *B. campestris* (turnip rape and oilseed rape).

Most yellow, brown, and oriental mustards are used either in the production of table mustard or seasoning for processed foods.

**Adaptation:** Mustard is best adapted to fertile and well drained soils. Avoid dry, sandy, or sandy loam soils. Yellow mustards mature in 80 to 85 days; the brown and oriental mustards require about 90 to 95 days.

Mustard, like other Brassicas, is a relatively cool-season crop. Hot, dry weather during flowering and seed set may limit yields. Present areas of adaptation are unknown for South Dakota. However, it is likely that mustard will not produce well where

hot, dry weather often limits spring wheat production.

**Seedbed Preparation:** A good seedbed is a must for successful mustard production. A critical factor is soil firmness. A firm seedbed which allows shallow placement at about 1/2 to 1 1/2 inches is best. It may be necessary to pack with a roller packer or empty press drill before seeding.

**Seeding:** Early seeding is recommended. Although mustard seedlings are somewhat frost tolerant, seed during the first 2 weeks of May. Later planting may result in reduced yield.

A seeding rate of 10 to 14 lb/A for yellow mustard and 6 lb/A for brown and oriental mustard is suggested. Mustards are commonly solid seeded with a grain drill.

Soil crusting can cause emergence problems. In such a case tillage often does more harm than good. Generally, if the stand is poor the soil should be reworked and reseeded to mustard or another crop.

Mustard should not be followed with rapeseed crops. You will have contamination from volunteer mustard plants.

Harvesting: Although the weather does not normally cause mustard to shatter, harvesting can cause severe shattering losses if the crop is overripe.

In most cases brown and oriental mustards should be swathed. Yellow mustard should be swathed if the field is weedy or the crop is uneven in maturity. Swath when the plants drop leaves and turn from green to yellow/brown. The best time is when the middle pods of the stem turn brown. In most cases the remaining green pods will mature in the row. Swath in the early morning hours to reduce shattering losses.

Yellow mustard that is weed-free and uniformly ripe may be direct-combined. In some cases, removing the reel or lifting it above the crop will reduce shattering losses. If the reel is used, remove half of the reel bats and/or reduce the reel speed.

Since cracked seed results in dockage, adjust the combine cylinder speed to the lowest possible setting. A cylinder speed of about 600 RPM is suggested.

A field method of testing for cracked seed is to run your hand through the threshed seed. Cracked seed will stick to the hair on the back of your hand, indicating further adjustment is necessary.

Storage: A moisture content of 10% or less is needed to safely store mustard. If drying is necessary, it is critical that air temperatures not exceed 150°F and the seed temperature not exceed 120°F. For all Brassica seed a tight bin is essential.

Weed Control: Plant in a relatively weed-free field. There are no herbicides labeled for use in mustard seed production.

Mustard, like many other Brassicas, is sensitive to drift from broadleaf herbicides such as 2,4-D, picloram, or bromoxynil. Mustard is also sensitive to carryover from previous herbicides such as atrazine, chlorsulfuron, or picloram.

Insect Pests: Flea beetle is the most common insect pest associated with mustard seed production in South Dakota. Presently, only Sevin and Malathion are labeled for use in controlling flea beetle in mustard. Follow label directions for current rates and method of application.

Fertility: Mustard, like many small grains, responds to both nitrogen and phosphate fertilizer.

Generally, it takes about 6 lb of nitrogen to produce 100 lb of mustard seed. Nitrogen can be furnished either by commercial fertilizers, manures, or soil test nitrogen. A starter fertilizer of 10 lb N plus 15 lb P<sub>2</sub>O<sub>5</sub> can be applied with the seed.

Avoid using more than 10 lb of actual N and K<sub>2</sub>O together when seeding. Any combination of actual N plus K<sub>2</sub>O exceeding 10 lb/A may lead to seedling injury. Do not apply urea nitrogen in contact with the seed.

Agronomic Performance: The yield performance and agronomic characteristics of some mustard varieties grown in North Dakota (Table 1) and Minnesota (Table 2) are given.

Table 1. Yield comparisons of mustard varieties in North Dakota.

Variety	Type	Locations							
		Williston		Minot		Fargo		Langdon	
		'81	'82	'81	'82	'81	'82	'81	'82
Blaze	Brown	1020	1425	1380	1304	—	—	—	1148
Domo	Orient.	1003	1799	1537	1600	1489	2201	1075	1196
Lethridge 22A	Orient.	1151	1613	1068	1578	678	1664	768	1253
Tilney	Yellow	132	1293	796	1240	—	—	1026	993
Ochre	Yellow	427	1335	892	1062	—	—	966	899
Kirby	Yellow	431	1368	829	1092	884	1700	1148	887
Gilsilba	Yellow	—	—	—	—	775	1679	—	—
Yellow #2	Yellow	—	—	—	—	1023	1766	—	—
Common Brown	Brown	—	—	—	—	458	1403	757	—

Table 2. Yields and characteristics of some mustard varieties in Minnesota.

Crop and Variety	Yields (lb/acre)			Oil (%)	Bushel Weight (lbs.)	Planting to Maturity (days)
	Rosemount (1979-83)	Roseau (1981, 82, 84)	Crookston (1980-81)			
<u>Yellow Mustard</u>						
Kirby	1144	1494	639	23	56	94
Ochre	1166	1491	669	25	56	92
<u>Oriental Mustard</u>						
Carrow 85	1646	1609	1035	34	54	93
Domo	1626	1403	998	33	53	93
Lethridge 22A	1568	1545	470	—	53	93
<u>Brown Mustard</u>						
Black	1395	1715	998	—	54	92
Blaze	1466	1677	767	31	54	93

## References

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