

'Martigena' White Mustard

Sinapis alba



Alternate Name

Brassica hirta

Uses

Suppress Diseases and Nematodes: This cultivar was bred in Germany for sugar beet nematode suppression. In the Pacific Northwest it has also been used for the control of Verticillium and Rhizoctonia and suppression of common root rot (*Aphanomyces euteiches*). Suppression of nematodes depends on timing of plow down as well as the type of nematodes.

Weed Seed Bank Reduction: Martigena has shown to have an effect on the weed seed bank. It has been observed to substantially reduce viable weed seed emergence in the subsequent crop.

Biofumigation: Mustard contains glucosinolate, which produces isothiocyanate when the plant material is incorporated into the soil. Isothiocyanate is similar to the active chemical in the fumigant VAPAM.

Improved Soil Quality: As mustards are used as a green manure, improvements in soil quality include: increased organic matter, aggregation and infiltration, water and nutrient holding capacity, and overall productivity.

Management

Seeding Rate: 7 lbs/ac at 6" spacing.

Seeding Depth: 1/2 - 3/4"

Seeding Dates: In the Pacific Northwest, the optimal seeding time is the end of July to the beginning of August. This can be extended out through the end of August. If planted prior to July, the plants will bolt quickly and won't have the biomass needed to be an effective fumigant.

Fertility: Use 150 pounds of total Nitrogen. Never fertilize in the row as it can reduce germination by as much as 80%. Apply Sulfur in a 1:5 ratio with Nitrogen. On the soil analysis 15 ppm Phosphorus is adequate. Most growers in the Pacific Northwest use a fertilizer program that is similar to soft white winter wheat.

Weed Control: Treflan and Sonalan can be used as preplant chemicals. Read the labels for appropriate rates.

Incorporation: See Figure 1 for a Planning Guide for Planting and Incorporation of Mustard Green Manures for the Columbia Basin. Incorporate the mustard in the Fall or 4 - 6 weeks prior to planting a spring crop. It is important to incorporate the plant material before viable seed is produced. If the plants do go to seed this crop is soft seeded and won't be a continual issue, unless it is plowed in. Incorporate within the top 6" by flail mowing then disking once or twice.

Other Recommendations: 'Martigena' has been shown to be more effective when mixed 50-50 (by seed count) with 'Cutlass' (*Brassica juncea*), an oriental mustard. Oriental and white mustards can be more effective when used together.

Crop Characteristics and Requirements

Sinapis alba is an annual broadleaf.

Soil pH: 5.5-8.3 **Temperature:** This crop will be killed by a hard frost.

Herbicide Sensitivity: Glyphosate, 2,4-D, and other various broadleaf herbicides.

Sources

Curtis Hennings, Spectrum Development (Ritzville, WA).

Andy McGuire of the Grant-Adams County Extension (Ephrata, WA).
'Cover Crops for the Columbia Basin, Yellow Mustard.'

'Considerations When Using Mustard Green Manures.' WSU Grant and Adams Area Cooperative Extension. 2003 Mustard Green Manure Field Day.

'Managing Cover Crops Profitably' 3rd Edition (SAN).

Figure 1 — Planning Guide for Planting and Incorporation of Mustard Green Manures — Columbia Basin

Planting Date	Emergence	Flowering Begins*	1-Oct	8-Oct	15-Oct	21-Oct	29-Oct
1-Aug	5 days	4-Sept	●	●	□	□	□
8-Aug	5-6 days	14-Sept	●	●	●	●	□
15-Aug	5-6 days	24-Sept	●	●	●	●	●
21-Aug	6 days	6-Oct	◇	◇	●	●	●
27-Aug	7 days	19-Oct	◇	◇	◇	◇	●

*For earliest flowering variety being sold in Columbia Basin

● Recommended

□ Increased risk of viable seed production, plant only late blooming varieties

◇ Reduced biomass due to shortened growing period

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