

Oilseed radish

Oilseed radish (*Raphanus sativus* or *R. sativus* var. *Oleiferus*) is a type of mustard originally developed, as the name implies, for oil production. It is widely used in Canada and is being adapted throughout Michigan as a cover crop. Oilseed radish establishes and grows quickly during cool weather. It can be planted early in the spring to provide fast cover and a green manure crop for cash crops planted in late May or early June. Oilseed radish has a thick, deep root that can help break up compacted soil layers and scavenge nitrate that has leached beyond the rooting zone of other crops. Like other mustards, oilseed radish is also a highly digestible forage for early and late season grazing.

In Michigan, oilseed radish is being evaluated for organic matter production in the preparation of cherry orchards. Also, sugarbeet and snap bean growers are evaluating oilseed radish as a tool to help break up compacted soil.

Benefits

- Fast growth in spring or fall provides quick ground cover to protect against soil erosion and smother weeds.
- Thick, deep taproot can break up compacted soil layers and scavenge nitrate from deeper soil layers.
- Can be used as a cover crop and livestock forage.
- May have an allelochemical effect following decomposition that can help control soil-borne pests, including insects, weeds and nematodes.

Establishment

Oilseed radish is planted at a depth of 0.25- to 0.5-inch, at 14-18 pounds per acre. Use the lower rate when drilled and the higher rate when broadcast. If broadcast, the seed can be incorporated with a light tillage. Even though oilseed radish winter kills, it tolerates light frosts to 25 degrees F, especially as a seedling.

In short-season crops such as snap beans, oilseed radish can be planted before or after the crop. Oilseed radish can also be planted following wheat or cereal rye harvest. Because the seed germinates even at low soil moisture, establishing a good cover is possible even in dry years. Since oilseed radish is neither shade nor traffic tolerant, it is not recommended for planting in either corn or soybeans.

Management

Planting oilseed radish in a recently or heavily manured field can be a good strategy since oilseed radish can scavenge residual nitrogen from the soil. Oilseed radish produces about 1.5 tons of dry matter per acre in about 60 days if residual soil nitrate is high. The plants will grow to a height of 1-3

feet, depending on conditions. Since oilseed radish winter kills, the nitrogen it scavenges is likely to be released in early spring, thus reducing some nitrate leaching potential.

Oilseed radish's large taproot has many lateral roots that help loosen and aerate the soil. In no-till situations, this conditioning helps prepare a nice seed bed.

Some farmers have found that oilseed radish can become a weed if allowed to go to seed, although we have not experienced this problem in Michigan. If seeding is a concern, either kill oilseed radish before it goes to seed or plant it late enough in the season to avoid letting it go to seed. If planted in mid to late August oilseed radish will generally not go to seed in Michigan.

Oilseed radish can also be planted as part of a cover crop mix with cereal rye, annual ryegrass or oats. After the mix winter kills, it provides a protective mat against soil erosion. Since neither oilseed radish nor the grasses fix nitrogen, this combination will not add additional nitrogen to your system, but it will reduce the amount lost.

To lessen disease problems, it is not recommended to plant mustards on the same field for more than two years in a row. Also, since oilseed radish may be susceptible to clubroot disease (*Plasmodiophora brassicas*) or cabbage root maggot (*Delia radicum*), it should not be used in a rotation with vegetable crops susceptible to these pests.

The disadvantages of using oilseed radish are that the seed may be difficult to locate, and it is relatively expensive. Some Michigan farmers are experimenting with seed production/harvest methods.

Sources: Kellogg Biological Station Cover Crops Research Program; The Quick, N-Trapping Cover, B. Hofstetter. 1994. *New Farm* 16:24-26; Northeast Cover Crop Handbook, Marianne Sarrantonio, 1994, Rodale Institute; Managing Cover Crops Profitably, Sustainable Agriculture Research and Education Program, [USDA](http://www.usda.gov).