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Vegetable Seed Production

Kohlrabi, Mustard, Radish, Rutabaga, and Turnip

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KOHLRABI

Kohlrabi, when grown for seed, is handled as a biennial crop. Limited experience with plantings in the Willamette Valley has indicated that seed-to-seed production is successful if plantings are made from August 15 to September 10. Cultural requirements and handling practices are similar to those described for fall-sown turnip (see section on turnips).

MUSTARD

Mustard is grown by the seed-to-seed method and is usually planted in early spring. Spring plantings are preferred because fall seedings are more subject to the natural hazards of flooding, poor harvest conditions during June when the crop matures, and lack of sufficient pollinating insects during the early blooming stage.

Care should be taken to avoid planting on land infested with wild mustard, because this weed, like lambsquarters and rough pigweed, is extremely difficult to separate from the crop in the seed-cleaning operations. Many seedsmen believe that some crossing occurs between the tame and wild types of mustard when grown together.

A complete fertilizer should be banded at time of seeding. High yields can be obtained where a plentiful supply of water and nitrogen are maintained. Additional nitrogen may be sidedressed or broadcast. The most economical level of nitrogen appears to be about 100 pounds per acre. In contrast to turnip, no lodging takes place at these high rates of nitrogen. Excessively high levels of nitrogen (over 120 pounds) have a depressing effect on seed yields, however.

Under dryland conditions, mustard should be seeded in March or early April. Under irrigated conditions, where it is possible to maintain better soil moisture conditions throughout the growing period, satisfactory yields have been obtained where the plantings were delayed until the middle of May. Planting after this date would be inadvisable. Yields of 800 pounds per acre are average, but good yields of 1,500 pounds per acre are possible.

RADISH

Radish is an easy seed crop to grow and appears to be adapted to all of the major farming areas in Oregon. The main problem in its production, however, has been one of inconsistent seed yields. In some years, from 500 to 800 pounds of seed are obtained easily, whereas in other years under slightly different conditions, yields are lower. There is difficulty in predicting crop yields even when they appear most promising. Danish and Dutch seedsmen report this same difficulty under their conditions.

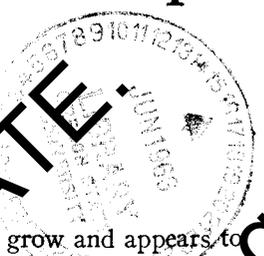
Commercial seed production of radish is usually by the seed-to-seed method. Stock seed should be produced from transplanted roots, with attention being given to the careful selection of the roots for desired size, shape, and color.

Plantings under dryland conditions should be made from March to the middle of April. Under irrigation, where a plentiful supply of plant nutrients are available, seedings in early May have matured successfully. Because the radish plant is a weak competitor, row plantings are recommended over solid seedings so that weeds may be controlled by cultivation. In the early stages of plant growth, *flea beetles* are a severe problem. Control these insects. During the cotyledon stage of growth, the plants are most susceptible to insect injury. Blooming extends over a long period, and the seed usually reaches maturity about September 1 in the Willamette Valley and October 1 in central Oregon.

Row spacings of 2, 2½, and 3 feet have no effect on seed yields. Shallow planting, furrow planting, ridging with 2 inches of soil along the rows, or combinations of these are equal in performance.

Radish seed does not appear to be exacting in its soil requirements and can be grown on a wide range of soil types. Best yields are usually obtained on good soils. Combinations of nitrogen and phosphorus increase seed yields. Highest yields are reported where a combination of 100 pounds of nitrogen and 200 pounds of P₂O₅ are applied as bands sidedressed shortly after emergence. Unfertilized plots yield less than one-half as much as fertilized plots. Observations

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show that excess nitrogen delays seed maturity and that irrigation tends to prolong the normal flowering period.

Threshing of radish is difficult because of the tendency for the seeds and the pithy pods to stick together. Intact pods blow over during threshing. Special threshing equipment should be used if large acreages are involved. When using the ordinary combine or stationary thresher, it is necessary to reduce the cylinder speed to 500 to 600 RPM, remove most of the concaves, and reduce the wind blast. Rerun the threshed material once or twice in order to remove the seed from pods which pass intact over the screens on the first run. *The seeds crack readily.* Yields range from 500 to 800 pounds per acre.

RUTABAGA AND TURNIP

Turnip and rutabaga can be grown as winter annual crops for seed production in Oregon. Rutabaga is hardier than turnip and somewhat later in seed maturity.

Cultural practices for turnip and rutabaga

Cultural practices from planting until harvest are similar for both crops. They are sown in early September directly in the field, remain there through the winter, and bloom and mature early the following year.

Broadcast $1\frac{1}{2}$ to 2 pounds of boron before seeding. Plants should be spaced 22 inches to 24 inches apart. Fertilize with a light application of a complete fertilizer placed in bands at time of seeding. In early spring apply 30 to 60 pounds of N and 40 to 60 pounds of P_2O_5 as a sidedressing.

High seed yields are obtained where plentiful supplies of nitrogen and water are supplied during the growing season. Applications of nitrogen above 150 pounds per acre will usually result in lodging.

Both turnip and rutabaga should be cut a little on the green side because the seed shatters badly if allowed to become fully ripe. The usual method of harvest is to cut and windrow when the plants have taken on a greenish-yellow tinge and before appreciable shattering has taken place. Following a curing period of from 1 to 3 weeks, a combine with retarded speed (1,000 RPM or less) and lowered cylinder is used to thresh the crop.

Under experimental conditions, irrigated spring turnip plantings made in April were better than those made in May and early June. Seedings made after the middle of June failed to bolt and mature seed.

Seed yields range from 400 to 600 pounds per acre, but 1,000 pounds per acre is considered an attainable goal.

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