FS 296
February 1983

Growing Turnips for Forage

Area of Adaptation

Turnips *(Brassica rapa)* are best adapted to cool, moist climates of western Europe, New Zealand, and other temperate areas. Root crops thrive where the average summer temperature is 60 to 65° F. They do not grow as well as summer crops in areas where the average temperature is much above 70° F. Turnips will, however, stand a light freeze. A moist climate, together with a deep loam soil or a soil high in organic matter, provides optimal conditions for turnip growth.

Turnips may be grown in all parts of western Oregon and in irrigated, lower elevation regions of eastern Oregon.

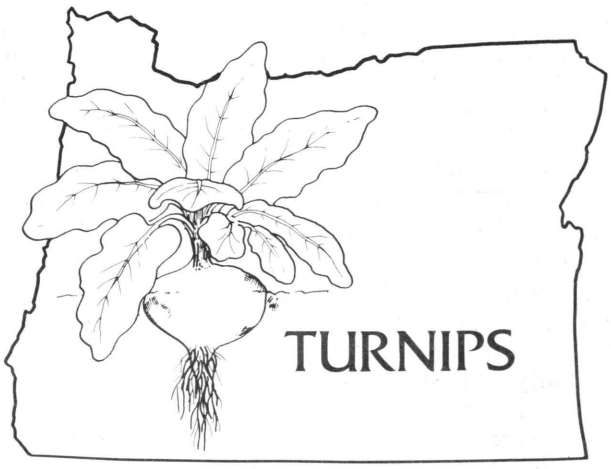
Primary Use

Turnips are used primarily as supplemental pasture feed for sheep during the winter in western Oregon or as a double-crop pasture for beef cattle in eastern Oregon. Shortage of pasture during the winter months in western Oregon often creates a critical need for forage that can be grown in late summer or fall and saved for this period. Turnips are ideally suited for this use because they grow well in the autumn when adequate precipitation is available.

In eastern Oregon, turnips usually are planted following wheat, potatoes, or peas to provide an inexpensive forage crop for beef cattle. The seed is broadcast by air on sandy soils and the area is irrigated to stimulate germination.

Use	Precipitation	Turnip seeding rate	Companion species	Companion species seeding rate
	Inches	*lbs/A*		*lbs/A*
Winter pasture	>30	1-2	Annual ryegrass or	10
			rape	5
Double-crop pasture	Irrigated	3*	—	—

* Reduce planting rate if seed is drilled.



Production of 6,000 pounds dry matter per acre is possible in western Oregon with fall planting and no irrigation. In eastern Oregon, with irrigation following another crop, production of 8,000 pounds dry matter per acre is common.

Varieties

Two types of turnips are used for forage purposes—white- and yellow-fleshed ones. The white-fleshed type is quick maturing, grows well up out of the ground (making it easy for sheep to eat), and is adaptable to a wide range of soil types. It also can withstand hot, dry weather better than yellow-fleshed types. The early maturing, white-fleshed turnips mature in 60 to 90 days. Turnips sown early in the season are not suitable for late fall or winter feeding because of deterioration. Typically, the white-fleshed turnips are sown from early to late summer to provide an abundant, nutritious forage crop throughout the fall and winter.

Examples of white-fleshed varieties are Purple Globe, York Globe, Red Globe, Green Globe, and Kapai 67.

OREGON STATE UNIVERSITY EXTENSION SERVICE

York Globe is a very early maturing variety and has good disease resistance. Green Globe is a later maturing variety with better keeping quality.

Yellow-fleshed varieties mature later than white-fleshed varieties and have firmer flesh and better keeping quality. Examples of yellow varieties include Purple Top Yellow, Yellow Globe, Green Top Yellow, Purple Resistant, Green Resistant, and Waites Eclipse.

Establishment

Plant turnips on fertile, well-drained soil. Accessibility of the planted area to the lots upon which the sheep will be wintered makes controlled grazing easier. Fields should be plowed in the fall and late winter and tilled during the spring months to prepare a deep, fine, firm seedbed capable of holding soil moisture. The seedbed should be similar to that prepared for seeding alfalfa or a new pasture. Drill the seed ¼ to ½ inch deep or broadcast and lightly harrow to cover the seed. Following seeding, firm the soil by rolling. Plant turnips during the May-to-July season for grazing from August to October. Feed the white-fleshed turnips as they mature, as they cannot be readily saved.

Early August plantings of turnips, either alone or with annual ryegrass, will produce excellent winter feed if moisture is available for germination. Supplemental irrigation may be necessary to assure early establishment during late summer, as natural rainfall at this time of year usually is not dependable. Later plantings are possible, but September plantings will have greatly reduced production compared to August plantings.

Fertility and pH Requirements

Work a fertilizer application of 60 to 80 pounds of nitrogen and 80 pounds of P_2O_5 into the seedbed prior to planting. If the crop follows a sod crop, such as a plowed-down grass pasture, double the nitrogen rate.

If crop residue such as wheat or grass seed straw is incorporated prior to planting turnips, even more nitrogen will be required to break down the residue. Apply 180 pounds of N for August 1 plantings of turnips and 140 pounds N for September 1 plantings. If turnips are seeded with a grain drill with banding equipment, applying 30 pounds of P_2O_5 in the band will be of considerable benefit in western Oregon.

Most root crops have a fairly high potassium requirement. If the soil test shows less than 200 ppm K, broadcast from 60 to 100 pounds of K_2O prior to seedbed preparation.

Include 20 to 30 pounds of sulfur per acre in the fertilizer program in areas where there is no carryover of S from the previous crop. Best production is obtained when the pH is between 6.0 and 7.0.

Management

Animals that have not grazed turnips before may take a few days to become accustomed to turnips, but once they do, gains of 1½ to 2 pounds per day for 500-pound calves and ¼ to ⅓ pound per day for lambs are possible.

When large fields are to be grazed, it is essential to cross-fence and graze limited areas before opening up new areas. To minimize waste caused by trampling, limit the grazing of turnips to 2 hours per day and hold sheep or cattle in a pasture or lot with access to hay the balance of the time.

Weed Control

Weeds are often a more serious problem in turnips than in other *Brassica* species. Harrow fields after seed emergence to kill recently germinated weeds. This practice is frequently used where the crop is too thick and will benefit from thinning.

Consult the *Oregon Weed Control Handbook* for currently approved recommendations.

This publication was prepared by David B. Hannaway, Extension agronomist, W. S. McGuire, professor of agronomy, and Harold Youngberg, Extension agronomist, Oregon State University.

Extension Service, Oregon State University, Corvallis, Henry A. Wadsworth, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.