



Peppermint

Western Oregon—west of Cascades

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Production of a successful crop of peppermint depends on good management—weed control, irrigation, fertilization, and flaming of the crop following harvest.

In western Oregon, the stubble remaining after harvest should be flamed within 1 week. If flaming cannot be done within 10 days after harvest, it should be deferred until after the first frost. Delaying flaming until fall frosts will result in some additional spread of wilt.

Fields with weak roots should be flamed within 1 week of harvest and irrigated immediately. Flaming after regrowth has a good start will weaken roots. A light fall application of nitrogen often will help the regeneration of weak roots. Fields that are dry should be irrigated before flaming.

Soil Samples

Mint fields should be soil tested to plow depth before planting. This provides a basis for lime and fertilizer applications and for comparing changes in soil test values with succeeding years of production.

Soil samples on established fields that are not plowed should be taken from 2 depths: (1) the surface 2 inches of soil, and (2) the 2- to 6-inch layer of soil. Changes in soil test values in the surface 2 inches of soil give a more sensitive measure of changes in soil fertility. Comparisons between soil test values when the field was established with the 0- to 2-inch and 2- to 6-inch soil samples help you evaluate changes in soil fertility levels. Do not take soil samples within 1 month following a fertilizer application. Further information on soil sampling, soil sample bags, and information sheets are available from the Oregon State University Extension Service agent in your county.

For established stands, suggested lime, phosphorus, and potassium applications are based on soil samples from the surface 2 inches of soil.

Plant Samples

In addition to soil testing, the chemical analysis of plant samples is useful in planning a fertilizer and liming program and in evaluating the previous year's fertilizer program. Contact the OSU Extension Service agent in your county for information about plant sampling.

Nitrogen (N)

Mint farmers spend most of their fertilizer dollars for N. Research conducted by OSU indicates that the annual application of 200 lb N/a is optimum. A continuous N supply throughout the growing season is important to maintain active vegetative growth and development of new leaves for optimum oil production.

Suggested N application

Fall application of 20 to 30 lb N/a following harvest may help the growth of weak roots.

1. Apply a total of about 200 lb N/a during the growing season. Apply 40 to 60 lb N/a 1 week before the last spring flaming or immediately after spring flaming in the Willamette Valley. Apply the remaining N (about 150 lb N/a) between June 1 and July 10. Applications in early June can be made with conventional spreaders with little mechanical damage to the mint plants. A pipe, small pole, or chain can be dragged behind the spreader to reduce the burn that sometimes occurs when dry fertilizer falls on growing vegetation.
2. N application through sprinkler systems is a good way to provide a continuous N supply. The following N fertilizer materials can be applied through sprinkler systems: ammonium sulfate, ammonium nitrate, urea, calcium nitrate, and solution 32.

Phosphorus (P)

Adequate P is important to stimulate new root growth after harvest. Apply P in the fall (see Table 1). Liberal P fertilization has resulted in very high P soil test values in many fields.

Table 1.—P fertilization rates for peppermint.

If the soil test for P is (ppm)	Apply this amount of phosphate (P ₂ O ₅) (lb/a)
0–20	100–150
20–40	60–100
over 40	0



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On established stands, the suggested P application is based on a 0- to 2-inch soil sample. Increase P rates by 50 percent if the 2- to 6-inch soil test is below 20 ppm P.

Potassium (K)

Response of mint to K has been observed on soils with low K soil test values in western Oregon. Three tons of peppermint hay/a remove about 250 lb of K/a from fields, and soils with a low K-supplying power can be rapidly depleted of K. Apply K in the fall or early spring (Table 2).

Table 2.—K fertilization rates for peppermint.

If the soil test for K is (ppm)	Apply this amount of potash (K ₂ O) (lb/a)
0–100	120–200
100–200	60–120
over 200	0

On established stands, the suggested K application is based on a 0- to 2-inch soil sample. Increase K rates by 50 percent if the 2- to 6-inch soil test is below 100 ppm K.

Sulfur (S)

Peppermint has responded to applications of S in western Oregon. Apply about 30 lb S/a each year. S often is a constituent of N, P and N, P, and K fertilizer materials.

Magnesium (Mg) and Micronutrients (Zn, Mn, Fe, Cu, B)

To date, there has been no indication of a need for the application of Mg or micronutrients such as zinc (Zn), manganese (Mn), iron (Fe), copper (Cu), or boron (B) on peppermint fields in western Oregon. Plant analysis for these nutrients in peppermint plants has indicated levels that would be considered relatively high for other plants.

Lime

New plantings should be limed if the soil pH is below 6.0 or the Ca (calcium) soil test is below 8 meq Ca/100 g of soil.

This would give some allowance for an increase in soil acidity during the life of the mint stand. Mix half of the lime with 6 to 8 inches of surface soil to counteract soil

acidity throughout the plow layer. Mix half of the lime with the surface 1 or 2 inches of soil, where most of the acidification from N fertilizer takes place. (See Table 3.)

Table 3.—Lime application rates for peppermint.

If the SMP buffer test for lime is	Apply this amount of lime (t/a)
under 5.2	5–6
5.2–5.6	4–5
5.6–5.9	3–4
5.9–6.1	2–3
6.1–6.5	1–2
over 6.5	0

The liming rate is based on 100-score lime.

Mix lime into the soil at least several weeks before planting. A lime application is effective for several years.

High rates of N fertilization increase soil acidity during the 6- or 7-year life of a mint field. Plowing and disking of established mint fields has been eliminated to reduce the spread of verticillium wilt in western Oregon. This eliminates mixing lime with the soil on established plantings.

When soil pH drops below 5.5 in the surface 2 inches of soil on established fields, broadcast about 1½ t/a of lime as soon after harvest as possible. Surface application of lime will stimulate root growth during the fall and winter on acid fields.

The surface application of lime may stimulate volatilization losses from surface applications of N fertilizer. Irrigation immediately following the N application should reduce this loss where lime has been recently broadcast and left on the soil surface. A winter season or several irrigations following the surface lime application will greatly reduce the N volatilization hazard.

For More Information

How to Take a Soil Sample ... and Why, EC 628, by E.H. Gardner (revised 1997). No charge.

A List of Analytical Laboratories Serving Oregon, EM 8677, by J. Hart (revised 1997). No charge.

Fertilizer and Lime Materials, FG 52, by J. Hart (reprinted 1997). No charge.

You can access the above publications, as well as FG 15, *Peppermint: Western Oregon—West of Cascades*, our Publications and Videos catalog, and many other publications via our Web site at eesc.orst.edu

Suggested fertilizer applications are based on a survey and experiments conducted by T.L. Jackson, Oregon State University, and on observations of growers' results.

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Revised April 1983. Reprinted January 2000.