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Suggestions for Peppermint Wilt Control

Prepared by I. C. MACSWAN, *Extension Plant Pathologist* and C. E. HORNER, *Associate Professor of Botany and Plant Pathology*,
Oregon State University, Corvallis

Significant advances toward control of mint wilt caused by *Verticillium dahliae* have been made in the past three years. Although a complete and economical control program to fit all wilt-infested fields is not now available, the following measures will allow many growers to extend the productive life of their plantings after wilt first appears:

- Plant only wilt-free rootstock. *Certified*, wilt-free rootstock is becoming available rapidly. Planting diseased stock will result in early loss of the planting. If you plan to use common stock rather than certified stock, the source fields should be carefully inspected for wilt before harvest. Because of the difficulty of detecting small amounts of wilt, it is possible to obtain diseased roots even from carefully inspected fields.

- Remove badly infested fields from mint production *before* wilt becomes so severe that mint will no longer grow. Fields severely infested with wilt will not respond to flaming; take them out and plant wilt-free stock on clean land.

Western Oregon

In western Oregon, begin a program of field flaming when wilt *first* appears in a planting. If possible, flame within two weeks after harvest to allow regrowth before frost; this strengthens the rootstock. If necessary, irrigate after harvest to keep soil moisture adequate for growth. Flame at 1½ to 2 mph with 40 psi gas pressure. After fall flaming, two plans of action are available; choose one of the two plans described below.

Plan A. Remove the wilt-infected plants from the field and spot treat the soil with Vorlex. Spot treatment is easier and more effective in row mint. Plow as usual, and use chemical weed control to reduce cultivation as much as possible. Flaming kills the wilt fungus in stubble, but plowing and cultivation spread the fungus that is already in the soil.

Plan B. Do not plow or cultivate. Flame stubble again in spring between March 20 and May 1. On

unplowed mint, spring flaming is absolutely necessary for rust control. Flamer speed of 3 mph and gas pressure of 40 psi is sufficient for rust; but 2 mph, which will increase the exposure of plants to heat, may be necessary for weed control. Speeds below 2 mph at 40 psi may damage mint stands. Apply chemical weed control after flaming. Plan B nearly eliminates the spread of wilt but may cause management problems, particularly in the control of weeds. Mint tends to become shallowly rooted when not plowed; therefore, irrigation and fertilizer schedules should be watched carefully.

Eastern Oregon

Spot treat infested soil in row mint fields with Vorlex as above.

Because of different growing conditions and the possibility of greater winter injury to mint in eastern Oregon, the flaming practices recommended for western Oregon mint fields are not recommended for eastern Oregon. Research trials on flaming in eastern Oregon are being conducted.

Soil fumigation

Soil fumigation of heavily infested sites is a promising method of controlling wilt. For those interested in trying soil fumigation, the following suggestions may be used as guidelines:

1. You should check with your oil buyer and have a clear understanding about disposition of the oil.
2. Land to be fumigated must have been out of mint production for at least one year. Decomposition of roots and other plant parts in the soil is a necessity for good soil fumigation.
3. Soil fumigants showing promise for wilt control are:

Vorlex	40 gallons per acre
Telone	70 gallons per acre
Vapam	70 gallons per acre
Chloropicrin-methyl bromide mixtures (for production of rootstock only—see below)	



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Limitations

- VorlexExpose soil to fumigation for 4 days, and then aerate for an additional 7 days for each 23 pounds per acre used, before planting.
- TeloneFumigate soil in the fall for spring planting. After treatment, wait at least 25 weeks or until the odor of the fumigant has left the soil before planting. Cultivate several times during the aeration period, especially after a rain, to aid the release of the fumigant from the soil.
- VapamCultivate 5 to 7 days after application. Do not plant within 7 days after treatment on light soils or 14 days on heavy soils. Do not plant within 30 days after treatment if soil temperature is below 60° F.

Chloropicrin-methyl

bromide mixtures These mixtures may be used *only* in soils where mint plants are being grown to produce rootstock, not oil. Chloropicrin is registered for use as a soil fumigant for any crop; however, bromide residue tolerances have not been established to cover applications of methyl bromide to soils in which peppermint plants are to be grown for oil.

Soil fumigation must be done properly if satisfactory results are to be obtained. Some of the factors to be considered in soil fumigation are soil preparation, temperature, moisture, and soil surface seal. If you are not experienced in fumigating soil, ask the assistance of your county Extension agent, custom applicator, or chemical company representative.

Use Pesticides Safely

Use only recommended pesticides at approved rates. Observe time limitations on the use of pesticides to avoid illegal residues at harvest. Avoid exposure to hazardous chemicals by wearing an approved mask, gloves, and water-repellent clothing. Store pesticides out of reach of children. Dispose of empty pesticide containers immediately by burning or burying deeply in a remote area.

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