

MINT (PEPPERMINT AND SPEARMINT)

VARIETIES

Peppermint: Black Mitcham, Robert's Mitcham, Todd's Mitcham, and Murray Mitcham. The latter three varieties are more resistant to Verticillium wilt.

Spearmint: Scotch spearmint and Native spearmint. These two spearmints have distinctly different oils.

PLANTING AND ROTATION

The mints are grown from dormant runners (stolons) dug from existing fields in the late fall or spring. Because Verticillium wilt disease is an important problem, even with the more resistant varieties, growers should always use disease-free planting stock. Certified and disease-free stocks are available. Also, careful fall plowing of established stands is important for both winter protection and to reduce the incidence of mint rust and other foliar diseases. "Squirrely" mint, which occurs primarily on peppermint, is caused by the mint bud mite *Tarssonemus pipermenthae*.

Although the mints are perennials, stands should not be maintained longer than 3 or 4 years in a rotation program. Older stands may show a serious build-up of disease, insect and weed problems.

Irrigation significantly increases oil yields both on muck and mineral soils, even in seasons with normal rainfall.

FERTILIZING

Established mint - apply from 120 to 150 lb. N in split application (before emergence and before canopy closure). Potash and phosphorous should be maintained at 400 lb. K₂O and 50 lb. P₂O₅, respectively.

DISEASES CONTROLLED	TREATMENT	COMMENTS
Spearmint rust, Septoria leafspot	Several chlorothalonil products are labeled including Agronil, Bravo, Echo, Equus and Terranil. Use Bravo Ultrex at 1.2 lb. per acre. Bravo 500 at 2 pt. per acre. All 720 formulations at 1 3/8 pt. per acre. OR Rally 40W at 0.3125 lb. per acre.	Indiana only. Repeat spray at 7-10 day intervals for a total of 3 sprays. 80 day PHI. Spray when disease symptoms first appear. Repeat at 14-21 day intervals. 30 day PHI.
Verticillium wilt	Use wilt-resistant varieties of peppermint (Todd's Mitcham, Murray Mitcham, or Robert's Mitcham). Native spearmint is resistant.	Rotate plantings after no more than 3 or 4 years.

HERBICIDE*	TREATMENT**	COMMENTS
<u>PREEMERGENCE</u> Sinbar 80WP	1 to 2 lb. per acre before mint emerges or apply 0.25 to 0.5 lb. per acre plus surfactant or crop oil postemergence to the crop and small weeds.	Do not exceed 2 lb. total per acre per season. Do not apply within 60 days of harvest.

* For specific weeds controlled by each herbicide, check table on page 29.

** Rates given are for overall coverage. For band treatment, reduce amounts according to the portion of acre treated.

MINT (PEPPERMINT AND SPEARMINT)

WEED CONTROL (CONT.)

HERBICIDE*	TREATMENT**	COMMENTS
------------	-------------	----------

PREEMERGENCE (cont.)

Goal 2XL -- <u>MUCK SOILS ONLY</u>	2 to 3 qt. in 20 to 40 gal. of water per acre. Add a nonionic surfactant at 1 qt. per 100 gal. spray solution when applied postemergence to the weeds.	Apply only to dormant spearmint and peppermint grown on muck soil (greater than 20% organic matter). Do not apply to spearmint or peppermint grown on mineral or black sand soils. Application to emerged spearmint or peppermint will result in severe injury. Apply Goal before weeds are 4 in. tall. Indiana only.
paraquat	1.2 to 2.4 pt. per acre of 2.5L or 1.3 to 2.0 pt. per acre of 3L, plus 1 qt. COC or 4 to 8 fl. oz. nonionic surfactant per 25 gal. spray solution.	Apply before crop begins to grow in spring. Do not exceed 2.4 pt. 2.5 L or 2.0 pt. 3L per acre per season.
Trifluralin (4 lb./gal.)	1 to 1.5 pt. per acre. Use lower rate on coarse soil and higher rate on fine soil. Incorporate or irrigate with 1/2 inch water.	Apply late winter to spring or in the fall after the harvest, when mint is dormant or semi-dormant.

POSTEMERGENCE

Assure II 0.88E	8 to 10 oz. per acre.	Include 1 qt. COC or 1 pt. non-ionic surfactant per acre. Maximum application of 20 oz. per acre per season. 30 day PHI.
Basagran 4E	1 to 2 qt. per acre post-emergence to mint and weeds.	For yellow nutsedge and Canada thistle, repeat application 7-10 days later. A crop oil will enhance activity. Do not apply more than 4 pt. per acre per season.
Buctril 2E	1 to 1.5 pt. per acre in at least 10 gal. water per acre. Apply before weeds have more than 4 to 6 leaves. Do not apply when air temperatures exceed or are expected to exceed 70°F within 5 days of application.	Application should only be made on established mint that has been harvested at least one year prior to application. Buctril may cause temporary stunting and leaf chlorosis when applied to growing mint. Do not apply to mint growing under stressful conditions. Check label precautions. 70 day PHI.
Poast 1.5E	1 to 1.5 pt. per acre plus 1 qt. COC or 1 pt. Dash HC per acre.	Apply to actively growing grass. Do not apply more than twice per season. 20 day PHI.

* For specific weeds controlled by each herbicide, check table on page 29.

** Rates given are for overall coverage. For band treatment, reduce amounts according to the portion of acre treated.

WEED CONTROL (CONT.)

MINT (PEPPERMINT AND SPEARMINT)

HERBICIDE*	TREATMENT**	COMMENTS
POSTEMERGENCE (cont.)		
Stinger 3EC	0.33 pt. per acre for annual weeds to 0.5 pt. per acre for perennial weeds, plus 1 pt. nonionic surfactant per 100 gallons spray solution. Use a total of 10 gals. or more total volume per acre.	Apply after mint and weeds have emerged. For Canada thistle control, apply prior to bud stage of the weed. Do not apply more than 1 pt. per acre per season, and do not apply by air. 45 days PHI.
Select 2EC	6 to 16 fl. oz. for annual grasses; 8 to 16 fl. oz. for perennial grasses; plus 1 qt. COC per 25 gal. spray solution (1% v/v).	Apply to actively growing grasses. use at least 8 oz. on established mint. Wait at least 14 days between applications. Do not exceed 32 fl. oz. per acre per season. 21 day PHI.

* For specific weeds controlled by each herbicide, check table on page 29.

** Rates given are for overall coverage. For band treatment, reduce amounts according to the portion of acre treated.

INSECTS CONTROLLED	TREATMENT	COMMENTS
Cutworms, loopers	Lannate 90SP at 1 lb. or LV at 2 1/4 to 3 pt. per acre.	14 day PHI.
	OR	
	Orthene/Address 75S at 1.3 lb. per acre.	Do not apply more than 2.6 lb. per year. 14 day PHI.
	OR	
	Lorsban 4E at 2 to 4 pt. per acre.	Use lowerrate when cutworm larvae are less than 3/4 inch long. Only 1 application per growing season. 90 day PHI.
	OR	
	<i>Bacillus thuringiensis</i> . (MVP, Javelin, Dipel, Lepinox, Biobit, Agree, Ketch, etc.) Follow label rates.	0 day PHI.
Flea beetle	Malathion 57EC at 1.5 pt. per acre.	For best results, apply immediately after harvest on stubble. 7 day PHI.
	OR	
	Lannate 90SP at 1 lb. or 2.4LV at 3 pt. per acre.	For best results, apply immediately after harvest on stubble. 14 day PHI.
Mites	Metasystox-R at 3 pt. per acre. Repeat treatment in 10-14 days.	Ground application only. Apply in at least 20 gal. of water. 14 day PHI.
	OR	
	Omite 6E at 2 to 3 pt. per acre.	No more than 2 applications per year. 14 day PHI.