

Project Title: Effect of Auxinic Herbicides on Peppermint

Project Leader: Bob Stougaard

Project Personnel: Qingwu Xue and Fernando Guillen

Objective: To evaluate the mint tolerance to auxinic herbicides at different application rates.

#### Results:

This is the second year's study for evaluating mint tolerance to different auxinic herbicides in an established field of Black Mitchum peppermint, planted in the fall of 2000. The treatments included 3 application rates of Banvel, Tordon, Garlon, Stinger and Starane, and an untreated check. These 5 herbicides were applied at 0.125, 0.25, and 0.5 lb ai/a on May 20, 2005 when mint was 3-7 inches tall. The treatments were applied using a CO<sub>2</sub> backpack sprayer in 20 GPA of water using XR11002 nozzles. The treatment with the low rate of Garlon (0.125 lb ai/a) was discarded due to an application error in this season.

Crop injury was evaluated as plant stunting and discoloration. Stunting occurred in all treatments and increased as herbicide rate increased. However, the effect was transitory and decreased as growing season progressed. Comparing among herbicides, Banvel, Tordon and Garlon resulted in more stunting than Starane and Stinger. The high rate of Banvel, Tordon and Garlon (0.5 lb ai/a) exhibited the greatest stunting. Discoloration occurred in treatments with higher rate of Banvel, Tordon, Garlon and Starane. In contrast to stunting, discoloration in treatments with Banvel and Tordon increased as growing season progressed.

Except for the high rates of Banvel, Tordon and Garlon (0.5 lb ai/a), mint biomass yield was not affected by herbicide. The high rate of Banvel, Tordon and Garlon decreased biomass yield about 20%. The herbicide effect on mint oil yield was less consistent as compared to biomass.

#### Summary:

The results of this years study are consistent with those from last year, indicating that low rates of Tordon, Garlon and Starane have potential for use in mint for weed control.

Table 1. Effects of Banvel, Tordon, Garlon, Stinger and Starane on mint injury, yield and oil content in 2005.

Trt No.	Treatment Name	Rate (lb ai/a)	Crop injury (%)						Biomass ton/ac	Oil yield lb/ac
			Stunt			Discoloration				
			6/9/05	6/15/05	7/6/05	6/9/05	6/15/05	7/6/05		
1	Banvel SGF	0.125	8.3	25.0	16.0	0.0	6.7	11.7	3.1	59.4
2	Banvel SGF	0.250	13.3	25.0	31.7	3.3	3.3	15.0	3.0	68.5
3	Banvel SGF	0.500	16.7	36.7	41.7	5.0	5.0	20.0	2.4	45.9
4	Tordon 22K	0.125	5.0	11.7	6.7	1.7	1.7	6.7	3.1	58.8
5	Tordon 22K	0.250	18.3	30.0	18.3	6.7	15.0	10.0	2.9	73.0
6	Tordon 22K	0.500	31.7	46.7	41.7	8.3	20.0	15.0	2.4	52.7
8	Garlon	0.250	15.0	36.7	6.7	5.0	8.3	0.0	3.2	56.4
9	Garlon	0.500	28.3	58.3	31.7	1.7	13.3	0.0	2.3	71.4
10	Stinger	0.125	0.0	0.0	0.0	0.0	0.0	0.0	3.4	64.0
11	Stinger	0.250	3.3	1.7	0.0	0.0	0.0	0.0	2.9	53.9
12	Stinger	0.500	6.7	5.0	0.0	0.0	0.0	5.0	3.3	65.4
13	Starane	0.125	6.7	6.7	0.0	0.0	0.0	0.0	2.9	42.2
14	Starane	0.250	21.7	25.0	3.3	3.3	1.7	0.0	2.7	59.5
15	Starane	0.500	40.0	53.3	10.0	16.7	10.0	0.0	2.6	64.8
16	Untreated		0.0	0.0	0.0	6.7	0.0	0.0	2.9	47.2
LSD (P=0.05)			7.32	11.97	13.52	7.27	5.06	4.46	0.49	20.42
CV (%)			30.54	29.70	58.40	111.76	53.43	47.97	10.29	20.70
Treatment F			22.41	22.47	11.13	3.26	13.48	20.89	3.79	1.74
Treatment Prob(F)			0.0001	0.0001	0.0001	0.0038	0.0001	0.0001	0.0013	0.1051