



Evaluation of alternative treatments for the control of powdery mildew on protected herb crops (2004)

Defra HH3118TPC / HDC PC 210



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Powdery mildew on parsley



Powdery mildew on apple mint



Objective

- To evaluate foliar spray treatments for the control of powdery mildew on two protected herb crops.
 - Parsley (*Petroselinum crispum*)
 - Apple mint (*Mentha suaveolens*)



Treatments

Treatment	Rate in 1L water*	No. of sprays**
1. Control	~	~
2. Amistar (azoxystrobin)	1 ml	1
3. Thiovit Jet (sulphur)	2 g	2
4. Experimental fungicide	0.5 ml	1
5. Potassium bicarbonate (food grade)	20 g then 10 g	2
6. K50 (50% potassium bicarbonate) + wetter	3 ml + 0.1 ml	2
7. Sodium silicate	10 g	2
8. Milsana® (giant knotweed extract)	1.5 ml	2
9. Di-potassium hydrogen phosphate	10 g	2
10. Paraffinic oil	15 ml	2

*in 100 ml water/m² (equivalent to 1000 L/ha)

**Applied at a 7 day interval if more than 1 spray



Methods

- Inoculated glasshouse trials were carried out in October 2004
- Mint and parsley were grown in separate glasshouses
- Plant material used was rooted mint cuttings (1 month old) in pots, and parsley seedlings in pots
- Treatments were applied at a 7 d interval pre- and post inoculation with powdery mildew
- Plants were inoculated using infector plants & spore suspension
- Conducive conditions for powdery mildew provided:
 - high RH
 - limited watering
 - >15°C
 - shading



Crop damage was observed following 2 sprays of:

- Potassium bicarbonate (food grade)



4 days after 2nd spray

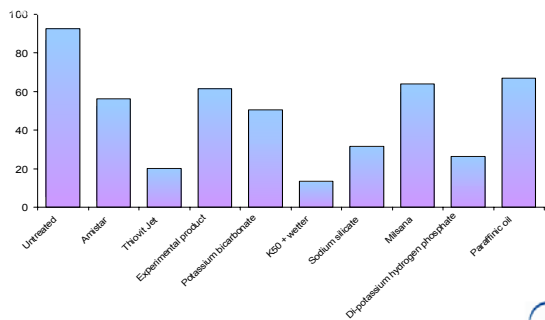
- Sodium silicate



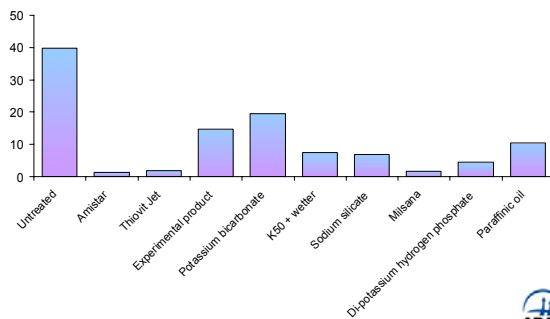
4 days after 2nd spray



**Parsley % leaf area affected,
17 days after powdery mildew spores added**



**Apple mint % leaf area affected,
17 days after powdery mildew spores added**



Summary

- The trials were carried out under high disease pressure.
- On parsley, treatments with Thiovit jet (sulphur) and K50 (50 % potassium bicarbonate; Omex) + wetter, were the most effective.
- On apple mint, treatments with Amistar (azoxystrobin), Thiovit Jet and Milsana® (extract of giant knotweed) were the most effective.
- Leaf scorch occurred following treatment with 2% and 1% potassium bicarbonate (food-grade). This effect has also been reported by herb growers.
- Promising products are being tested in combined programmes in 2005.

