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VEGETABLE CROP UPDATE

VINE CROPS EDITION

July 5th, 2007

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Downy Mildew

With the wet, overcast conditions of the past few days, all cucumber growers should be following a fairly tight fungicide program (every 5-7 days). Select fungicides that have proven efficacy on downy mildew. Given the highly infectious nature of this disease, do not rely solely upon folk remedies or “crop boosters” to provide adequate protection.

Fungicide treatments will be most effective if they are applied prior to a rain or irrigation event. Try to allow for ample drying time as most fungicides are only rain fast when dry.

While melons, pumpkins, zucchini and squash are somewhat more resistant to downy mildew; growers of these crops should still follow a 7-10 day preventative spray schedule. Keep in mind that products such as Tanos and Tattoo C are specifically targeted at downy mildew. They will not necessarily control other vine crop diseases such as anthracnose, alternaria, scab or powdery mildew. Rotation with the broad spectrum fungicides (Bravo, mancozeb or Cabrio) will help to keep the other leaf diseases under control.

Milstop (potassium bicarbonate) is a new organic fungicide registered for use on vine crops. Organic growers should always confirm product suitability with their certifying organization.

Scouting Update

The summer students continue to find low levels of angular leaf spot and gummy stem blight in the fields. To date, the downy mildew appears to be present only in the Elgin County fresh market crop. Cucumber beetle pressure remains low.

Spider mites have been reported on watermelons. While they prefer watermelons, spider mites can occasionally become a problem in other vine crops, especially during hot, dry weather conditions. Spider mite feeding first appears as bronze “pin pricks” on the upper leaf surface. Severe feeding causes the leaves to curl and appear drought stressed. The small (0.5mm) mites can be found on the lower leaf surface, often accompanied by a web and small round eggs. Mites often move into vegetable fields following wheat harvest. If mite populations appear to be building, apply 0.5 kg/ac of Kelthane 50W.

Bees & Pollination

Move hives into the fields at first bloom. Hives are normally required for cucumber, summer squash and melon crops. Native bees usually provide sufficient pollination in winter squash and pumpkins. However, if there appears to be a lack of bee activity in the field, these crops may also benefit from supplemental hives. To monitor for bee activity, take a walk in the field around 9 am. The noise of the bees should be easily heard.

Keep in mind that under dry conditions bees need water too! If the hives are not located close to a natural water source, consider supplying them with fresh water at the hives. Replenish the water regularly.

Avoid spraying insecticides during bloom. If an insecticide is required, either in the vine crop or in a neighbouring field; **spray during the late evening or early morning (between 7 pm and 6 am) when bees are resting in their hives.** Inform any neighbours or custom applicators of the location of the hives so that they can take necessary precautions when spraying.

Fertigated Vine Crops

Tissue samples can be used to assess a fertigation program. Sample at first flower to early fruit set. Take the most recently mature leaf from at least 20 plants in each fertigation zone. Keep the sample cool until it is delivered to the lab for analysis. The cucurbit nutrient sufficiency ranges are listed below.

Cucurbit Nutrient Sufficiency Ranges

Plant Part	Time of Sampling	N	P	K	Ca	Mg	S	Fe	Mn	Zn	B	Cu
		Percent (%)							Parts Per Million (ppm)			
Cucumber												
Most recently mature leaf	before bloom	3.5–6	0.3–0.6	1.6–3	2–4	0.58–0.7	0.3–0.8	40–100	30–100	20–50	20–60	5–20
	early bloom	2.5–5	0.25–0.6	1.6–3	1.3–3.5	0.3–0.6	0.3–0.8					
Muskmelon												
Most recently mature leaf	12-in. vines	4.0–5.0	0.4–0.7	5–7	3–5	0.35–0.45	0.2–0.5	40–100	20–100	20–60	20–80	5–10
	early fruit set	3.5–4.5	0.25–0.4	1.8–4	1.8–5	0.3–0.4	0.2–0.5					
Pumpkin												
Most recently mature leaf	5 weeks after seeding	3–6	0.3–0.5	2.3–4	0.9–1.5	0.35–0.6	0.2–0.4	40–100	40–100	20–50	25–40	5–10
	8 weeks from seeding	3–4	0.25–0.4	2–3	0.9–1.5	0.3–0.5	0.2–0.4					
Squash												
Most recently mature leaf	early fruit	3–5	0.25–0.5	2–3	1–2	0.3–0.5	0.2–0.5	40–100	40–100	20–50	25–40	5–20
Watermelon												
Most recently mature leaf	last cultivation	3–4	0.25–0.5	3–4	1–2	0.25–0.5	0.2–0.4	30–100	20–100	20–40	20–40	5–10
	first flower	2.5–3.5	0.25–0.5	2.7–3.5	1–2	0.25–0.5	0.2–0.4					
	first fruit	2–3	0.25–0.5	2.3–3.5	1–2	0.25–0.5	0.2–0.4					

Adapted from Maynard, D.N., and G.J. Hochmuth. 1997. *Knott's Handbook for Vegetable Growers, 4th Edition*. John Wiley & Sons, Inc. New York.

The Vegetable Crop Update is sponsored by:



*Ontario Processing
Vegetable Growers*

