



KCMS REPORT

Tree Fruit and Grapes for June 26, 2009

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SEVERE WEATHER UPDATE

With the recent storm cell that went through the Niagara area mid-day on Thursday we are trying to determine if any area experienced damaging hail events. A lot of heavy rains and wind was observed with one area in W. St. Catharines reporting some small, soft, non-damaging hail. We have one report of over 40 mm of rain in less than 45 minutes in the Beamsville area. Slightly lesser amounts were recorded in St. Catharines, Pelham and NOTL. If you have observed hail or plant damage from the recent storm, please contact Kevin or Ryan immediately so we can document these events.

TREE FRUIT

TENDER FRUIT

Peaches: Bacterial spot has been found on susceptible peaches and nectarines. There is no chemical control registered for bacterial spot on Ontario.

We have noticed an increase in powdery mildew lesions on peaches and nectarines this past week. We will remain at risk for new infections until pit hardening. Blocks with a past history of powdery mildew or have active powdery mildew present should be protected prior to the next rain. Fungicides that will control powdery mildew include Cabrio, Indar, Nova and Topas.

Green Peach Aphid colonies have stabilized this past week with less activity noted across the peninsula. Growers who have already applied a spray for aphids should look for any new colonies and determine if a follow-up spray will be necessary. Symptoms (curled leaves etc) will NOT disappear with spray applications. You need to examine the affected shoots to see if live aphids are still present about 72 hours after application to determine if need for further sprays.

Infestations of greater than 30% of terminals infested on mature peach trees or 20 colonies per tree on young non-bearing trees may require treatment.

Thresholds are lower for nectarines because aphids can cause fruit to be misshapen at harvest. Admire 240 does have peaches on the label and is very effective on green peach aphid. Diazinon 500 E or Zolone Flo are also labelled on peaches and should provide control of aphids. Be aware of the 14 day REI (Re-Entry Interval) on Zolone Flo.

Plant bug activity (including tarnished and oak bug) has been detected with stings evident. Fresh injury is a clear gum while injury more than 3-5 days of age will be cloudy or dark. These are site specific pests. All cultivation, mowing and weed control should stop in blocks where you are concerned about plant bug. Ground management practices can resume after the next spray is recommended for OFM. If more than 2% new injury is detected a control spray may be used.

Spray dates for second generation OFM will likely occur during the week of July 6th. Exact spray dates for each area will be outlined in next week's report. Ground management practices can resume after this upcoming OFM spray is applied if you use a product that will control the plant bug complex. Be aware that the use of Altacor or Delegate will provide good control of OFM however no control against plant bugs (including oak bug).

Data based on trap captures indicates that Peach Tree Borer flight numbers remain high. Young trees under stress are at the highest risk of injury from this pest. Sprays should be directed at the trunk and scaffold limbs. Thiodan and Sevin XLR are listed in Publication 360 for control of peach tree borer. If you are intending to use Thiodan be aware of what formulation you are using. There will be different rates listed based on the formulations.

We expect to Japanese Adult beetles adults emerging next week.

Plums: For those growers of early golden plums, remember, as the fruit softens and colours it becomes susceptible to brown rot and attractive to OFM. Pre-pick applications are very important as harvest approaches. Lance and Indar both have 1 day pre-harvest intervals. Matador is labelled for use on plums and has a 7 day pre-harvest interval. **European plums should avoid the use of Captan/Maestro as phytotoxicity may occur.**

Watch for the development of mites and leaf bronzing to determine if a miticide application is necessary. Be aware of the pre-harvest intervals if you choose to use a miticide on early varieties. With the rainfall experienced recently, we are at low pressure for mites.

Late June/early July are the time to start applying calcium sprays. Calcium will help in reducing the incidence of heat spot on plums. Be sure to check labels for any issues regarding rates and compatibilities with other products.

Cherries: Black Cherry Aphids have been observed in many monitored sweet cherry orchards. This pest curls and stunts the leaves and if more than 30% of the terminals are displaying symptoms with aphids present an application of

Diazinon will be beneficial. Growers who have already applied a spray for aphids should **look for any new colonies** to determine if a follow-up spray will be necessary.

As fruit begins to turn red and soften it becomes susceptible to rot and attractive to cherry fruit fly. Pre-pick fungicides and insecticides are important as we run up to harvest. Refer to the following chart to review labelled products that are effective on brown rot and cherry fruit fly in cherries. Depending on location and tree age, some tart and sweet cherries have begun to turn colour and with the rain, will be at risk from injury by Cherry Fruit Fly

Brown Rot Control in Cherries			
Product	Chemical Family	PHI	Max. # applications
Topas 250 E*	DMI	3	5**
Indar 75 WSP*	DMI	1	7
Mission 418 EC*	DMI	3	5**
Nova 40 W*	DMI	1	Not listed
Rovral	Dicarboximide	1	Not listed
Elevate 50 WDG	Hydroxylaniline	1	4
Lance WDG	Anilide carboxamide	0	5
Pristine WG*	Anilide Carboxamide + Strobilurin (QoI)	0	5

* - also registered for control of cherry leaf spot

** - no more than 2 applications within 3 weeks to harvest

Cherry Fruit Fly Control in Cherries			
Product	Chemical Family	PHI	Max. # applications
Diazinon 50 W	OP	10	Not listed
Zolone Flo	OP	14	3
Sevin XLR	Carbamate	2	Not listed
GF-120 NF	Spinosad	0	10
Entrust 80 W	Spinosad	7	3 (sweet), 4 (sour)
Imidan 50 WP*	OP	7	Not listed
Matador 120 EC	Pyrethroid	7	3

* - only registered on sour (tart) cherries

GF-120 NF is a product from Dow that is specifically labelled for control of fruit flies/maggot during the ripening phase on sweet and sour cherries. This product is a bait formulation that attracts the pest where the insect then picks up the active ingredient (0.02% Spinosad) and dies. Be aware – this is the same active ingredient as Success (Spinosad at 48%) but at a much lower concentration which is effective in controlling fruit fly! The manufacturer recommends that this formulation requires a large droplet size (4-6 mm) for application and specialized application equipment may be needed. GO-120 is not very rain fast and will rapidly lose effectiveness if exposed to rain or overhead irrigation. First

application should begin just as flies start to appear in the orchard with a second application made 12 days after the first. A third cover may be necessary if we experience wet conditions. GO-120 has a 0 day PHI, maximum of 10 applications per season and workers can re-enter the block once the product is dry.

APPLES & PEARS

With new leaves and fruit present, infection by scab can take place with any significant rain event. Scouts are finding primary scab lesions predominantly on leaves however; some fruit lesions are being detected. Do not extend intervals or reduce rates unless you are absolutely sure you are free of scab.

Secondary infection can occur under much shorter wetting conditions and can result in rapid spread to more leaves and fruit. If sporulating lesions are present, you should **NOT** be using any of these systemic products (like Nova/Nustar and Sovran/Flint) as this is a recipe for promoting resistance.

Where sporulating lesions are present, it is important that the newly developing tissues be protected regularly using full rates. A protectant fungicide such as Captan/Maestro, Polyram or Dithane/Manzate can be used. If you have applied Agrimek plus oil remember Captan/Maestro cannot be used 14 days prior to or after an oil application.

In orchards where terminals are showing symptoms of powdery mildew, it is important to protect young leaves and fruit from infection. Nova/Nustar, Sovran/Flint and Dikar will provide control of powdery mildew in susceptible cultivars. NOTE – the rate of Nustar is higher (doubled) for powdery mildew than it is for scab. Remember if scab is present Dikar may be your best option for scab and mildew!

Fireblight Risk for Apples and Pears – Fireblight strikes have been observed in a many monitored apple and pear blocks. Fruit becomes resistant to fireblight infections after petal fall; however, infection can still take place through open secondary blooms or if we experience significant hail or a severe thunderstorm that damages shoots and creates new infection points where the bacterial can enter. Watch the weather conditions and apply Streptomycin immediately if we experience severe weather events.

Please notify us immediately if this happens in your area.

An increase in adult Codling moth activity has been detected in our regional traps this past week and we will be continuing to track their movement. However, there is no need for any special sprays specifically targeting CM at this time.

Woolly Apple Aphid is becoming active and visible. Check pruning cuts for the first signs of activity. For control sprays, high water volumes are necessary to penetrate the “wool” generated by these insects.

We are monitoring for Green Apple Aphid and White Apple Leafhopper and have noted some activity. The use of Admire, Assail or Alias will control Apple Aphid and White Apple Leafhopper at the same time. For white apple leafhopper, if 2-5 nymphs are observed per leaf, a spray should be applied. For green apple aphid, if more than 20% of the terminals are infested then a control product should be applied.

Calcium sprays for apples should begin in early July. Check product labels for rates and compatibilities with other materials.

To reduce the incidence of Blister Spot on Crispin/Mutsu and other sensitive cultivars, you may choose to use Copper or Aliette. Do not exceed three (3) applications per season of either of these products.

We continue to see pear psylla young nymphs present in the samples examined this past week. If you chose not to use Agri-Mek this year, it will be very important to be regularly checking your individual scouting reports to determine if you are experiencing levels that require control. If you did use Agri-Mek then pay attention to the early instar numbers indicated on your scouting reports. These numbers should remain very low (less than 2 active instars per sample). Applications of Actara or Assail when the majority of the population is in the early instar stages have shown good activity in suppressing psylla numbers.

Movento is available for psylla control this season and should be timed when the majority of the population is at the early instar growth stages for maximum efficacy. Inclusion of a non-ionic surfactant is required to increase the efficacy of this product. If a fungicide is not compatible with a surfactant be sure not to tank mix that fungicide with Movento plus surfactant. A 10 day interval is recommended between the Movento plus surfactant application and the non-compatible fungicide application to reduce potential burning. Captan/Maestro is considered a non-compatible fungicide with some surfactants.

Grapes: Some things to think about as we continue through bloom:

- Temperature – Temperatures that are either significantly below or above average for several days during bloom can have a negative impact on fruit set. Average temperatures below 15°C and above 32°C are both detrimental to fruit set.
- Rainfall – Rainy, wet conditions during bloom can make it more difficult for caps to completely detach from the flower, which is necessary for pollination and fertilization to take place.
- Nutrition – Adequate BUT NOT EXCESSIVE nutrition is important for fruit set. Using non necessary macro (N, P, K, Mg) or micronutrients (especially Boron) can lead to DECREASED or incomplete fruit set.
- Light – Results from several studies indicate that light levels independent of temperature do not have any significant effect on fruit set in the current season.

At many locations we have hybrid and labrusca cultivars at the end of bloom and have full bloom on many of the vinifera cultivars which means that we are now in a highly susceptible stage for infection by Black Rot, Powdery Mildew and Downy Mildew.

Foliar Phomopsis infections have been observed in a few monitored blocks. Phomopsis releases spores until bloom so it is important to continue to protect leaves and shoots in phomopsis prone vineyards until bloom is complete. We have observed downy mildew and black rot lesions however so far we have not observed powdery mildew symptoms as of June 25. From bloom onwards fruit infections by powdery mildew can take place and cause aborted berries or limit berry growth and result in split fruit and injured clusters. Now is not the time to be sparing on product rates, spray intervals or water volumes. Maintain protectant intervals of 7-10 days to ensure newly developed tissues are protected.

More downy mildew lesions have been picked up by the scouts this past week. We are observing the “oil-spots” on the upper surface lower leaves (second or third leaf) on a wide array of vinifera cultivars at many monitored locations. Active sporulation is now evident on all observed lesions. Downy mildew has recently been observed on shoots and clusters (pre and post bloom). Downy mildew will have a tendency to pig-tail clusters if the infection is on the rachis. If downy mildew has been observed in your blocks we are recommending to not extend your spray intervals past 7 days (even shorter if significant rainfall is experienced) and to rely on protectant materials like Captan/Maestro, Polyram, Folpan or Dikar for DM control. If you use Revus you will need to add another material that will cover for Powdery Mildew and Black Rot. Eradication measures can be considered once a majority of the spores have developed and are present on the underside of the infected leaves. We are recommending NOT using eradication products until bloom is complete.

REVUS FUNGICIDE

By. Wendy McFadden-Smith, OMAFRA Vineland

Revus is a new downy mildew product for grapevines. It shows no cross-resistance to other classes of fungicides. Revus is easily and quickly taken into the wax layers of leaves and fruit. This means that it is not subject to wash-off by rain that occurs more than 2 hours after the spray is dry. Revus penetrates into leaves where it then distributes to the opposite leaf surface via translaminar movement but **does not** move from treated to untreated leaves or fruit. Do not consider this a licence for sloppy coverage as this product is site-specific in activity and therefore prone to resistance. The manufacturer recommends the inclusion of a non-ionic surfactant to increase efficacy. Do not use more than 4 applications (2 would be optimum) per season. This product does not control any other diseases so you must tank mix it with other fungicides to provide full disease spectrum activity. Revus should be used as a protectant (pre-infection) treatment.

We now have enough leaf area present to effectively absorb locally systemic materials for powdery mildew control such as Sovran, Flint, Lance, or Nova. These materials are absorbed by the tissue and are relatively rain fast. If you are using Sovran, Flint, Nova or Lance you will need to add another material for Downy Mildew control. From here on, be sure to follow a resistance management strategy and alternate product families. Be aware that Sovran and Flint are from the same chemical family.

If we get very wet and hot through bloom a botrytis specific spray may be used on susceptible cultivars such as Pinot cultivars, Riesling and others with thin skins or prone to late season Botrytis. For all other cultivars it is much more cost effective to use botrytis suppressing materials such as Lance at the petal fall/berry set stage of development **if we have normal bloom weather**. This is suggested as a resistance management strategy and to get multiple disease control (powdery and downy mildew and black rot) with these products along with suppressing botrytis. For resistance management (and cost) each botrytis specific product should never be used more than once per season.

According to the bees act, it is prohibited to apply an insecticide while grapes are in bloom.

Grape Berry Moth (GBM) larvae have been found at very low numbers in a couple monitored blocks. Multiple years of research results have shown that 1st generation GBM injury has not translated into economic loss by the end of the season. Growers that are concerned must be aware that this pest only attacks the fruit clusters.

If you wish to spray for the 1st generation, timing is for first egg hatch. Spray timings for the first generation were June 21-23 for the early areas and June 22-24 for the mid and late season areas. These timings are based on regional trap captures and are likely to be during bloom. Since it is prohibited to apply an insecticide during bloom you may have to wait until petal fall to start the application. At that time it may be difficult to control larger larvae.

Phylloxera galls have been picked up on susceptible cultivars at very low levels. Publication 360 lists Thiodan 50 WP, Thionex 50 W and Movento for control of the leaf form of Phylloxera. For Thiodan/Thionex, two applications are usually required 10-14 days apart. Pre-bloom applications generally result in greater control of Phylloxera because the later generations are not synchronous (some are present in all life stages). Movento is available now at local dealers and, according to trial data, should provide excellent control of Phylloxera.

If you have experienced problems with Erineum mite in the past, the use of a sulphur spray will help in suppressing this pest. This is not a recommendation for a general spray but is site and cultivar specific. Be aware that the use of locally systemic fungicides for mildew control will have no suppression effect on EM. For blocks that have EM present and wish to use a systemic material for mildew/black rot control should include a low rate of sulphur or Kumulus (3 kg/ha)

to aid in keeping EM at manageable levels. Susceptible cultivars include; Riesling, Sauvignon Blanc, Vidal, Seyval and Cabernet Sauvignon.

Leafhoppers have started to move into cultivated grape blocks. The species' that are present include the potato leafhopper and the three-banded leafhopper (bench area). Traces of damage and activity are being picked up by the scouts with damage/activity levels remaining well below threshold values. Control will not be necessary until after bloom. Watch for the mowing of nearby hay fields and ditches which may drive leafhoppers into the vineyards.

For those growers who choose to apply Surround for leafhopper control, the first application should already be applied. This material is only a suppressant of feeding and not a contact material that kills leafhoppers. Therefore, a residue must be established and maintained throughout the season to effectively deter leafhoppers from feeding. Read the label for full instructions on use and the need for reapplications.

Grape Disease/Fungicide Options Table

Key

Phom=Phomopsis, PM=Powdery Mildew, DM=Downy Mildew, BI Rot=Black Rot, Bot=Botrytis

Growth Stage	Disease	Fungicides		
		PM	DM, BI Rot or Phom	Bot
1-3 leaves	Phom (if there is a history)		captan Folpan	
3-5 leaves	Phom, PM	Sulphur Serenade Max	captan Folpan	
		Dikar		
20-25 cm shoot growth	Phom, PM, DM, BI Rot	Sulphur <u>Nova</u> <u>Lance</u> <u>Milstop</u>	copper captan Folpan Polyram Revus (DM) <u>Ridomil Gold MZ (DM)</u>	

		Dikar		
Immediate pre-bloom	<u>Fruit & Leaves</u> PM, DM, BI Rot	<u>Sulphur</u> <u>Nova</u> <u>Sovran/Flint</u> <u>Lance</u> <u>Milstop</u>	copper captan Folpan Polyram Revus (DM) <u>Ridomil Gold MZ (DM)</u>	
		Dikar		
Immediate post-bloom	<u>Fruit & Leaves</u> PM, DM, BI rot	<u>Sulphur</u> <u>Nova</u> <u>Sovran/Flint</u> <u>Lance</u> <u>Milstop</u>	copper captan Folpan Polyram Revus (DM) <u>Ridomil Gold MZ (DM)</u>	<u>Rovral</u> <u>Vanguard/Scala</u> <u>Elevate</u> Serenade Max
	<u>Fruit Bot*</u> Only if extensive hail or GBM injury occurs	Dikar		
Berry touch	<u>Leaves</u> PM, DM	<u>Sulphur</u> <u>Lance</u> <u>Sovran/Flint</u> <u>MilStop</u> Serenade Max	copper captan Revus (DM) Polyram	<u>Vanguard/Scala</u> <u>Elevate</u> Serenade Max
	<u>Fruit Bot</u>	Dikar		
Veraison through early September	<u>Leaves</u> PM, DM	<u>Sulphur</u> <u>Lance</u> <u>Sovran/Flint</u> <u>MilStop</u> Serenade Max	copper captan Revus (DM) Polyram	<u>Vanguard/Scala</u> <u>Elevate</u> Serenade Max
	<u>Fruit Bot</u>			
Early September through Pre-harvest	<u>Fruit Bot</u>			<u>Vanguard</u> <u>Elevate</u> Serenade Max

If a product is underlined, it means that it is prone to the disease developing resistance and it is **very important to rotate** among fungicides from different lines within that particular box (not with one on the same line, such as Sovran/Flint or Vanguard/Scala). For resistance management purposes, try to avoid using products from the same chemical family more than twice in a growing season.

**Adapted and edited from an original document generated by;
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KCMS PEST RISK NOTES Week of June 26, 2009

The above chart is a summary of observed pest activity and projections of activity over the next 7 days. These are general observations and should not replace site specific scouting to determine if a particular pest should require control. The authors assume neither liability for the information nor its use.

APPLES:

PEST	RISK LEVEL
Apple Scab	M-H
Powdery Mildew (PM)	M-H
Fire Blight	L-M
Tentiform Leafminer (TLM)	L-M
Woolly Apple Aphid	M-H
Green Apple Aphid	M-H
European Red Mite (ERM)	L
Codling Moth	M
Oriental Fruit Moth (OFM)	L
Leafhoppers	M
OBLR	L

GRAPES:

PEST	RISK LEVEL
Powdery Mildew (PM)	H
Phomopsis	L-M
Downy Mildew (DM)	H
Black Rot	H
Grape Berry Moth (GBM)	M
Potato Leafhopper (PLH)	M-H
Grape Leafhopper (GLH)	L
Spring Feeding Caterpillars (SFC)	L

PEARS:

PEST	RISK LEVEL
Pear Scab	M-H
Fire Blight	L-M
Pear Midge	L
Pear Psylla	M-H
European Red Mite (ERM)	L
Spring Feeding Caterpillars (SFC)	L
Pear Rust Mite	L
Oblique Banded Leafroller (OBLR)	L

CHERRIES:

PEST	RISK LEVEL
Brown Rot (BR)	H
Black Knot	L
Plum Curculio (PC)	L
Aphids	M
Spring Feeding Caterpillars (SFC)	L-M
Cherry Fruit Fly	H
Oblique Banded Leafroller (OBLR)	L

PEACHES:

PEST	RISK LEVEL
Plant Bug/Oak Bug	M-H
Brown Rot (BR)	L
Oriental Fruit Moth (OFM)	L
Plum Curculio (PC)	L-M
Aphids	M-H
European Red Mite (ERM)	L

PLUMS:

PEST	RISK LEVEL
Brown Rot (BR)	H
Oriental Fruit Moth (OFM)	H
Plum Curculio (PC)	L
Aphids	M
European Red Mite (ERM)	M