

APPLE PIPS

~ Little Things to Grow From ~



2017 SEASON RE-CAP

The 2017 season will go down as an “average crop” in Ontario. To get to this point however, we didn’t have any “average weather”. The spring started with cooler and wetter than average weather across Ontario which made early season disease control a challenge. West of Kitchener, fields started to dry up and stayed quite dry for the remainder of the season - even to the point of “drought” in the south-west. East of Kitchener was a very different story with cool, wet spring time weather continuing on throughout the “summer”. The East luckily had a warm and dry September to help ripen the crops. Frost wasn’t a major concern in 2017, but it certainly was a year that witnessed a lot of hail events. In Niagara, some orchards were completely wiped-out after 3-5 different hail events with one of them lasting over 30 minutes!

All in all, the fruit quality looks to be quite good, with the overall tonnage trending slightly lower than average. The lower yields in many cases can be contributed to the “hangover” effect from last year’s drought. With very healthy, generally well-balanced trees coming through 2017, we can look forward to strong potential for the 2018 crop.

From the extended Bartlett family to yours, we congratulate you on a successful harvest, and look forward to another great year in 2018!

Off-season Spray Homework

Review Pest Pressures: Top insect issue, top weed issue, top disease issue.

Review Treatment Successes: What new products did you use that added value to your orchard? Can you use this product more often? Protect by rotating chemistries.

Review Treatment Failures: What new product did you use that didn’t add value to your orchard – why not? Weather not conducive? Stress levels not high enough to show dramatic differences in treated/untreated when using a stress-reduction product? Wrong timing?

Review potential/building pressures: Example - BMSB, herbicide resistant weeds closing in, potential loss of fungicides.

Once this review is complete, make an appointment with your local Bartlett Rep to formalise a logical plan for 2018!

Homework due date: March 2018

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Pat's Corner

Orchardists in Ontario and Quebec will find that the trees are green as grass and showing no indication of moving toward senescence. Therefore the copper shut down program has increased importance in '17 compared to other years. The rate is 5 to 7 kg/ha of fixed copper and preferably copper hydroxide (better copper equivalent) instead of copper oxychloride. Rate should be the higher end. A second application may be warranted if these tree conditions prevail.

Secondly, with these conditions and the unpredictable weather extremes since 2012, the Zinc application is even more important to help protect dormant tissue from winter damage. This type of fall weather scenario we are having is similar to B.C. where they get an arctic cold front in late October or early November after mild fall conditions, often resulting in trunk and bud damage.

The copper, zinc, boron and urea can be tank mixed. If growers plan on applying high rates of urea to decompose scab lesions I would suggest that this application be made to fallen leaves not onto the tree canopy this year as the trees are too green. After the application the leaves should be flailed.

Pat Johnson is the long-time nutrient specialist for N. M. Bartlett Inc. Pat earned his formal training from U of G and has worked with growers across North and Central America in Fruit Nutrition. He operates a large organic farm in the Georgian Bay area with his wife and son.



Pre and Post-Harvest Nutrition

ZINC

Zinc applications are valuable for correcting deficiencies as well as acting as an "anti-freeze" to aid in winter-hardiness. **Yara's Zintrac (40% Zn)** is the product of choice for this timing and is generally used @1L/ha.

BORON

Best effects of Boron application comes from foliar sprays made post-harvest and prebloom to improve bud development, flower set, and fruit set. Yara's Bortrac (10.9% B) is the product of choice for these timings. The rate for post-harvest sprays is 2L/ha.

COPPER

Copper is antibacterial and acts as a sterilant. Late fall applications at 20 and 80% leaf drop is a great finish to your disease management plan and has shown to help control the spread of Necteria Canker (indicated by orange spores on dead wood) by protecting newly exposed leaf scars where the canker can inhabit. Copper sprayed at this timing has also shown to speed up and condense natural leaf drop.

NITROGEN

Late season Nitrogen applications can help in two ways. 1) increasing N levels in buds now will help push healthy growth early next spring before 'mass flow' of N into roots commences. 2) Nitrogen applied at higher rates onto leaves before winter can directly kill apple scab and also aid in the decomposition of leaves which decreases survival rate of over-wintering fruiting bodies of apple scab. Better coverage on both sides of leaves is generally obtained when applications are made while leaves are still on trees, however Urea can volatilize quickly (7-10 days), so application should be applied right before the majority of leaves drop (15-30% of leaves dropped).

APPLICATION NOTES

Various tank-mixes of these elements have been used effectively. We promote high quality micro-nutrients from Axter BioScience (Oligosol) and Yara for their proven track record for efficacy and crop safety. Several coppers are available for use at this timing with varying rates. The Nitrogen source you use should be scrutinized. Only Low Biuret Urea (LBU) should be used as a foliar spray. It is uncommon to see the Biuret reading on the bag, so make sure you are using foliar or industrial grade. Although 7-12kg/ha may be enough for nutrition, most studies state that a higher rate of N is necessary for satisfactory sanitation. A **4-5% solution of LBU** has shown good results (40-50Kg/1000L water). If using this high a rate of Urea (46-0-0), make sure to alter your fertilizer applications accordingly.

ORCHARD SANITATION

Mulching of leaf litter will further help you in your battle against apple scab. A study performed at the Horticultural Research and Development Centre, AAFC, Saint-Jean-sur-Richelieu, Quebec concluded that the highest reduction of apple scab inoculum was found in the treatment that had an application of Urea, followed by leaf shredding. **90% + reduction of ascospore** viability the following spring resulted from this treatment.

RODENT CONTROL: Strategies and Considerations

When you think of protecting your apple crop, you use all available tools to ensure minimal loss. Trapping, scouting, proper pest ID, cultural practices, product selection, timing and product rotation. This shouldn't be any different for rodent control!

Cultural Practices – This is your first and potentially most important step. Alter the rodent habitat by opening it up so natural predators (raptors, cats, coyotes) have a better chance at finding their food. Growers who mow their row middles tight after harvest and clean the herbicide strip have less mouse damage. Now remove the rodent food source to limit the growth of the local population. A brush sweeper does a great job taking culls from under the trees. Attach the sweeper to a flail mower and you'll chop up the apples to expedite their breakdown. In doing this you'll also reduce inoculum from other insects and diseases. 'Perfect' makes a high quality sweeper that can be outfitted with either bristles or paddles depending on user preference (see Provide Agro insert for more info).

ID your pest – Is your main rodent pest Pine Vole (*Microtus pinetorum*), Meadow Vole (aka orchard mouse) (*Microtus pennsylvanicus*) or Deer Mouse (aka field mouse) (*Peromyscus maniculatus*) (Figure 1). Try live traps to properly identify the species. If live trapping is not an option (maybe the orchard is not near home and checking daily is cumbersome), you can try to analyse the damage. Pine voles tend to burrow in subterranean runs and feed on the root shank just below the soil surface. Meadow voles and deer mice create runways in long grass and under snow and feed right at the soil or snow line. Meadow vole/deer mouse damage looks different than rabbit damage in the size and depth of the gnaw marks.



Figure 1:
(L to R)
Meadow Vole
Pine Vole
Deer Mouse

Product Application – Now you know what your target is and have created favourable odds by altering habitat. Time to finish the job! Choosing the right bait and applying it effectively takes some consideration. Timing is critical, especially for a zinc-phosphide product like **BARTLETT WAXED MOUSE BAIT**. Although great care is taken in its production to coat and protect each kernel to maximize the longevity of lethal potency, best results will occur when you can ensure several days after application will be clear from rain or snow. This product has been used by Canadian farmers for over 50 years and has a proven track record of great rodent control! Growers have reported success from a multi-pronged approach to rodent control. The program suggests an initial application of the quick knock-down product **BARTLETT WAXED MOUSE BAIT** to lower the population, followed a few weeks later by an application of the anti-coagulant rodenticide **GROUND FORCE** to provide sustained control into the winter. **GROUND FORCE** is formulated as a weather-resistant paraffinized pellet that holds up to wet/snowy conditions and has been used successfully for over 30 years. Using the two-pronged approach will also help reduce bait shyness and potential development of resistance. If you have identified pine voles as a problem pest you may find treating the openings of the subterranean runways as well as applying in the broadcast method to achieve best results.

Pay particular attention to young High Density plantings! Once rodents find that beautiful row of recently planted, tightly spaced trees - they may never want to leave! It's like an all-you-can-eat smorgous board for rodents!

Follow-up – Last but not least, make sure you follow up your applications with some more scouting! You can make a simple monitoring tool out of a piece of shingle and a slice of apple. Place the apple slice under the shingle and check every other day for a week or so for the presence of chewing. If there is still activity, treat accordingly! Both **BARTLETT WAXED MOUSE BAIT** and **GROUND FORCE** labels allow farmers to reapply if necessary to get extended control. The secondary application is something to seriously consider in your young HD plantings. Remember these rodents do not hibernate, and can reproduce all year long.

Safety Reminder – Always read and follow label directions. For sites that are open to the public (PYO) you must use "tier 1" bait stations (see label for details on construction). Where possible, dispose of dead rodents to limit potential risk of predator exposure.

New Products Recap 2017



First in a new Insecticide sub-class (Grp. 4D), *Sivanto™ Prime* precisely targets key damaging pests like aphids, leafhoppers, and scale while at the same time having a favourable safety profile for bees and many beneficial insects. Sivanto proves to be efficacious on insects feeding on the underside of leaves, even when applied to only the upper surface of leaves, making use of translaminar movement.

SIVANTO vs. SCALE, ONT TRIAL RESULTS 2017: Spring in Canada is always variable. This can make timing a traditional oil application for scale difficult. In 2017, trials were performed in Central Ontario and Niagara orchards with high incidence of Scale to test efficacy of a delayed oil application mixed with high rate Sivanto - targeting both ERM and Scale. This timing has traditionally been thought to have been too late for effective scale management. In both trials the treatments were quite effective, and we look forward to utilizing this strategy when the opportunity presents itself in the future. Thanks to Norfolk FGA, Harold Schooley and Al Inksetter for their support!

Aprovia™ Top fungicide combines the proven power of difenoconazole with a potent, longer-lasting SDHI, Solatenol®, providing excellent control of apple scab as well as powdery mildew. A new product from Syngenta adding two translaminar active ingredients (Group 3 and 7).



Blush™ is a new plant growth regulator developed to promote colour change in bi-colour apples, thereby improving the commercial value of your apple crop. With cool August weather providing excellent natural colouring conditions, many growers decided to not use blush in 2017, but those that did still saw colour improvement.

Label Expansions and Revisions



Apple Leaf Curling Midge has been added to Bayer's two-way systemic insecticide, *Movento™*. This URMULE, sponsored by OAG, is labelled for suppression.

Sevin™ XLR has been re-evaluated with label changes. Changes have been reduced to a maximum of **one** thinning application only. Please refer to label for other notes.



Dow AgroSciences® has expanded their *Delegate™* insecticide label to now include control of European Apple Sawfly, a newly emerging pest, that is spreading throughout Ontario orchards.

Kasumin™ use rates have changed to take into consideration water volumes used. 100ppm should be targeted (eg 5.0L/ha in 1000 L/ha of water). See label for more details



Powdery mildew has been added to the label of *Buran™* for suppression on apples.



Product Phase - Out (Apples)

Product	Active	De-registered	Last Date of Sale	Last Date of Use
Diazinon	Diazinon		over	Dec. 31, 2016
Malathion 25WP	Malathion		over	Dec. 31, 2016
Gramoxone	Parquat		Sept. 30, 2017	Dec. 31, 2018

*No regulatory changes have yet been made to: Maestro (Captan), EDBC's, or Granuflo

Always read and follow Label guidelines and recommendations from local experts.

N. M. Bartlett Inc. is the most trusted name in the business because **we care**. We strive to help you grow a higher quality crop that will return you more money! Give your local rep a call to develop a solid strategy for the 2017 season.

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