

APPLE PGRs—Promoting Return Bloom Dr. James Schupp, Penn State University

A return bloom program should begin after the current year's crop becomes unresponsive to chemical thinning but before the crop becomes sensitive to the ripening effects of NAA or ethephon.

The first step in an effective return bloom program is an effective chemical thinning program. Chemical thinning removes a portion of the fruit crop, reduces competition, and can increase return bloom. When NAA or ethephon are used in a chemical thinning program, these chemistries can directly promote return bloom, in addition to the beneficial



Return bloom of 8th leaf Honeycrisp/M.26 apple trees at FREC, May 1, 2015. Row on the left received no return bloom sprays. Row on the right received 3 "sides" of RB sprays - one spray of NAA and 2 sprays of ethephon - June/July, 2014. Photo: Dr. James Schupp

effect from the actual thinning. For some annual bearing, or mildly alternating varieties, a good chemical thinning job can promote adequate return bloom for next year. For alternate bearing varieties, additional action is needed. Here is a concise review of how to improve return bloom.

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What to Use

NAA or ethephon

Both are effective for promoting RB when used in a multi-spray program such as that described below. Ethephon is the stronger promoter of the two.

When to Use

Spray every 7 to 10 days, starting after June Drop, and when fruits are larger than 30 mm in diameter. Return bloom sprays should be started after the current year's crop becomes unresponsive to chemical thinning, but before the crop becomes sensitive to the ripening effects of these plant growth regulators. Return bloom sprays later in July, particularly ethephon, can promote premature ripening and accelerate preharvest fruit drop. This is a greater concern for early ripening varieties such as Honeycrisp and McIntosh types. In most seasons, the effective window is early June to early July. For later ripening varieties, such as Delicious, York and Fuji, the sprays can go on until mid-July.

Rates

Low rates of either NAA or ethephon are effective. Two oz per acre of NAA or 8 oz of ethephon per acre per spray are adequate. There is little benefit from higher rates, and use of lower rates minimizes the risk of unwanted side effects. Increasing the number of low rate return bloom sprays is more effective than one or two heavy shots. For consistent results, 3 to 4 is recommended.

Can I Add to a Tank Mix?

Return bloom promoters can be applied as stand-alone sprays or tank-mixed with other crop protectants. Return bloom can be applied as part of regular cover sprays, either complete or alternate-row-middle. As with all chemical applications, good coverage is necessary.

Spray Adjuvants

While additives may increase uptake and activity of return bloom promoters, be careful with adding these to your tank mix. As Dr. Dave Rosenberger once said to me "Captan on the surface of a leaf is a wonderful thing. Captan under the surface of a leaf is terrible." If applying return bloom sprays as part of a tank mix, it is probably better to skip the adjuvants.

Some years ago, Dr. Ross Byers at Virginia Tech recommended using an ammonium form of nitrogen in combination with return bloom sprays to increase their activity. I have not been able to demonstrate a benefit from this practice, but some growers continue to add foliar N to return bloom sprays.

Do Return Bloom Sprays Work?

See the figure with this article. The photograph shows rows of Honeycrisp trees. Row 2 received no return bloom sprays. The

adjacent rows were treated once with NAA and 2 times with ethephon from one side. The results speak for themselves.

What Can Go Wrong?

Return bloom spray applied too early

Return bloom sprays applied too early increase the potential for unwanted additional thinning of the current season's crop. This risk is greater with ethephon than with NAA, and higher rates (>12 oz ethephon, or > 3 oz NAA per acre) can increase the risk of unwanted thinning. This is particularly the case with varieties that are sensitive to late thinning, such as Macoun, Golden Delicious, and Rome.

Return bloom sprays applied too late

Return bloom sprays applied too late increase the potential risk of premature ripening of early maturity varieties such as Honeycrisp. This risk is also made greater from use of higher rates, and is more acute when using ethephon. Avoid return bloom sprays when daytime highs are in excess of 85° F for the same reason.

Disappointing Results

Many factors influence return bloom. Excessively over-cropped trees, weak trees, excessively vigorous trees, unpruned/ heavily shaded trees, water stress and/or heat stress, can all contribute to poor results.

What about Post-harvest Return Bloom Sprays?

Researchers at Michigan State University discovered that stopdrop sprays of NAA could, in some cases, increase return bloom. This has led some consultants to recommend postharvest return bloom sprays. In 2014, a post-harvest spray of ethephon had no effect on return bloom of Honeycrisp/M.26 trees at the Penn State Fruit Research and Extension Center (FREC). A 2014 stop-drop NAA spray did not increase return bloom of York Imperial/Bud. 9 trees.

Several horticultural techniques (ringing, scoring, root pruning, pinching) have been documented to promote return bloom. With all of these techniques, the period shortly after bloom is the most effective timing, and this appears to be the best timing for return bloom sprays as well. Post-harvest return bloom may prove to be useful in certain circumstances, but even if this timing proves to be worthwhile, it is unlikely to replace the post-thinning timing.

This original article appears on the Penn State Extension website, and can be accessed at the following link: <u>https://extension.psu.edu/apple-pgrs-promoting-return-bloom</u>.

New Training Requirements for Mixing, Loading, and Applying Paraquat

Dr. Lynn Sosnoskie, Cornell AgriTech and Mike Basedow, CCE Eastern NY Commercial Horticulture

According to the EPA's website, there have been 17 deaths (three involving children) and multiple injuries caused by ingestion or contact (skin, eyes) with paraquat dichloride (a.k.a. paraquat, common trade name Gramoxone). In order to reduce the potential for harm and/or fatalities, the use of paraquat (mixing, loading, applying, or otherwise handling) will be restricted to certified applicators. It cannot be applied by workers under the supervision of a certified applicator, and can no longer be applied by NYSDEC Special Permit holders. In addition, the certified applicator must successfully complete an additional EPA approved training program every three years. This is required according to the EPA's 'Paraquat Dichloride Human Health Mitigation Decision' (https://www.regulations.gov/document?D=EPA-HQ-OPP-2011-0855-0115) and amended product labels.

An online training course can be accessed at the eXtension.org website (<u>https://campus.extension.org/enrol/index.php?id=1660</u>) and is available in both English and Spanish.

Notes:

- Because paraquat is a restricted use pesticide, this training is restricted to certified pesticide applicators only; noncertified persons working under the supervision of a certified applicator and NYSDEC special permit holders <u>are prohibited</u> from using paraquat. This includes mixing, loading, applying the pesticide, and any other pesticide-related activities.
- As a first-time eXtension user, you will need to set up an eXtension account before you can complete the training. Follow directions at the site; *i.e.* "Is this your first time...", "Create new account..."). A confirmation email will be sent to you after which you can access the module. You cannot take the training as a "guest".
- You should expect to spend about 60 minutes on the course plus the test at the end. You must score 100% on the test. You can take the test as many times as needed to achieve the required score.
- Your account can be accessed at any time to print the certificate following successful completion of the training module; print the certificate and keep it on file.
- According to a Rutger's website, some users have reported difficulty accessing the training program in Spanish when using Google Chrome; consider using a different browser if you encounter similar problems.

These training requirements only apply to newly labeled (2019 and beyond) products. They do not apply to paraquat products with labels prior to 2019. You will no longer be able to purchase product carrying the old label after September 30, 2020, as this is the last day suppliers can legally sell those materials.

For more details, see EPA's list of Frequently Asked Questions about the paraquat dichloride training. <u>https://www.epa.gov/pesticide-worker-safety/paraquat-dichloride-training-certified-applicators</u>

Guidance for NYS Farms—NY Forward Plans

Liz Higgins, CCE Eastern NY Commercial Horticulture

New York state has released official guidance specific to farms addressing COVID-19 (Novel Coronavirus). This is part of the NY Forward reopening plan. You can find the document titled **"Interim Guidance for Prevention and Response of COVID-19 at Farms"** at this link: <u>https://agriculture.ny.gov/interim-guidance-prevention-and-response-covid-19-farms</u>. This guidance can be used in developing your farm's required plan <u>https://forward.ny.gov/industries-reopening-phase</u>.

The document covers: cleaning and disinfection, face coverings, social distancing, high-risk locations, coordination with local health departments, employee health screening, quarantine/isolation, and farm-provided employee housing.

A companion document is a helpful checklist for farms to be sure they have covered every required item: <u>https://agriculture.ny.gov/covid-19-operator-checklist-farms</u>.

Also included is a tip sheet intended for farm workers (<u>https://agriculture.ny.gov/covid-19-prevention-tips-farmworkers</u>). This document is presently in English but should be available in more languages soon, and I recommend that you distribute it to all employees. Please carefully read the last section of the document titled "Empower Yourself," this section informs workers about how to file complaints. Make sure that your business is in full compliance with all federal and state COVID-19-related sick leave and paid family leave requirements and that you are communicating this information to employees, see this post (<u>https://agworkforce.cals.cornell.edu/2020/04/01/covid-19-employee-leave-and-farm-employees/</u>) for more information.

By Richard Stup, Cornell University. Permission granted to repost, quote, and reprint with author attribution. The post <u>State Guidance for Farms to Prevent/Respond to COVID-19</u> appeared first in <u>The Aq Workforce Journal.</u>

Show Me the (COVID-19) Money! CFAP for NYS Fruit and Vegetable Farms

Elizabeth Higgins, CCE Eastern NY Commercial Horticulture

Show me the (COVID-19) Money is an attempt to help NYS fruit and vegetable farmers navigate the crazy, constantly changing world that is the government's economic response to COVID-19. Buckle-up its going to be a fun ride!

You will note that this issue's dollar photo is tiny, because although some NYS fruit and veg farms may qualify for CFAP payments, the actual amount of the payment for most fruit and vegetable farms won't be very large. CFAP helps agricultural producers impacted by the effects of the COVID-19 outbreak by providing direct payments to producers of eligible commodities. BUT if you also have livestock, dairy or field crops your situation with CFAP will be better, so you should include any eligible specialty crops also.

Generally, to be eligible for a CFAP payment, a specialty crop producer must have sold (or tried to sell) a crop between January 15 and April 15, 2020 that USDA has determined suffered a 5- percent-or-greater price loss over a specified time resulting from the COVID-19 outbreak <u>or</u> faces additional significant marketing costs for unsold inventories. These would be crops harvested in FY2019 and in storage or crops that matured and were ready to sell in January-April.

The list specialty crops that USDA has determined are <u>currently</u> eligible for some type of CFAP payment are: Almonds; apples; artichokes; asparagus; avocados; beans; blueberries; broccoli; cabbage; cantaloupe; carrots; cauliflower; celery; corn, sweet; cucumbers, eggplant; garlic; grapefruit; kiwifruit; lemons; lettuce, iceberg; lettuce, romaine; mushrooms; onions, dry; onions, green; oranges; papayas; peaches; pears; pecans; peppers, bell type; peppers, other; potatoes; raspberries; rhubarb; spinach; squash; strawberries; sweet potatoes; tangerines; taro; tomatoes; walnuts; watermelons. Other specialty crops will be announced in a future NOFA (Notice of Funding Availability) as losses due to COVID-19 market disruptions are better understood. In particular, nursery crops and cut flowers are under consideration.

There are three possible payments for eligible crops:

1. CARES Act Payments for crops that USDA has determined had a five percent-or-greater price decline in sales price that were sold between January 15, 2020, and April 15, 2020.

2. CARES Act Payments for eligible crop shipments that left the farm by April 15, 2020, and spoiled due to no market or the buyer did not (could not) pay.

3. CCC Payments for eligible crops that did not leave the farm by April 15, 2020, (for example, were harvested but sitting in crates on the farm), or mature crops that were unharvested by that date (for example, were plowed under) due to lack of buyers, and which have not been and will not be sold.

Eligible crops that were donated are eligible but it isn't clear whether they qualify for bullet 2 or bullet 3 payments (NYS FSA is getting an answer from DC).

Frozen produce that is otherwise eligible (2019 crop year) that you produced and were sold or in storage from January 15-April 15 are also eligible.

Payments for eligible specialty crops will be 80% of the sum of:

(1) For eligible specialty crops that were sold between January 15, 2020, and April 15, 2020, the quantity sold multiplied by the payment rate in **Column 2**; Producers must maintain records, such as a bill of sale, documenting that they sold the crop and the amount sold.

(2) For eligible specialty crops listed that were harvested and shipped off the farm between January 15, 2020, and April 15, 2020 producers must obtain documentation, such as a letter from the buyer, explaining non-payment or other record validating non-payment. This applies to producers who have met contractual obligations in delivering the crop to the buyer, but have not been paid, the harvested and shipped quantity that spoiled (or was unpaid) multiplied by the payment rate in **Column 3**.

(3) For eligible unpriced specialty crops listed that did not leave the farm or mature crops that remained unharvested between January 15, 2020 and April 15, 2020 due to loss of marketing channel, the sum of the quantity of crops that did not leave the farm (in acres in this case) or the quantity of mature crops that remained unharvested, multiplied by the payment rate in **Column 4**.

CFAP could be useful for greenhouse producers with tomatoes or lettuce and producers who sold dry onions, potatoes, apples, cabbage or garlic from January 15th to April 15th, especially if you had any unsold inventory between January 15th and April 15th of those crops or did not receive payment for crops that you shipped. Nursery growers who suffered significant losses should also apply with FSA as it is likely that there will be a benefit, but the agency does not have enough data yet.

Table 1: Example Eligible Crops and Payment Rates – full list of crops and payments is available on page 33 of the final rule <u>https://www.farmers.gov/sites/default/files/documents/CFAP%20Final%20Rule.pdf</u>

Example Eligible Crop	Column 2 crops you sold that USDA determined had losses	Column 3 crops that left the farm to be sold, but pmt. not received	Column 4 mature crops that never left the farm (could have been donated)	Payment for 1000 lbs in each category
Apples	\$0.00	\$0.18	\$0.03	\$0 + \$180 + 30 = \$210
Cabbage	\$0.04	\$0.07	\$0.01	\$40 + \$70 + \$10 = \$210
Garlic	\$0.00	\$0.85	\$0.17	\$0 + \$850 + \$170 = \$1,020
Romaine Lettuce	\$0.07	\$0.12	\$0.02	\$70 + \$120 +\$20 = \$210
Mushrooms	\$0.00	\$0.59	\$0.11	\$0 + \$590 + \$110 = \$700
Dry Onions	\$0.01	\$0.05	\$0.01	\$10 + \$50 + \$10 = \$70
Potatoes	\$0.00	\$0.04	\$0.01	\$0 + \$40 + \$10 = \$50
Strawberries	\$0.84	\$0.72	\$0.14	\$840 + \$720 + \$140 = \$1,700
Tomatoes	\$0.64	\$0.38	\$0.07	\$640 + \$380 + \$70 = \$1,090

Should you apply?

USDA-FSA has a payment calculator on the CFAP page (<u>https://www.farmers.gov/cfap</u>) that you can use to estimate what your CFAP payment is likely to be. This will help you determine if it is worth applying. Unless you sold a lot of an eligible crop, or experienced considerable losses from non-payments or mature crops going bad due to loss of markets, CFAP will probably not be that useful to most NYS specialty crop producers. Future losses aren't covered as the crops needed to be mature and harvested by April 15th. However, payments for dairy, livestock and field crops may be more favorable. If you also produce these products you should definitely investigate CFAP. Finally, the application is very simple so if you have good records and already have a relationship with USDA FSA the transaction cost for participation is really low for a USDA program.

USDA is aware that there are likely to be some specialty crops that suffered losses that weren't included. If you suffered significant losses from a specialty crop that isn't covered, USDA is collecting data to consider including other crops. Examples of these could include maple syrup, and nursery plants. Definitely contact FSA if you produce a specialty crop that suffered losses that aren't reflected here.

What do you Need to Apply?

Sign ups for CFAP began on May 26th and will run through August. The application for CFAP will be available at <u>https://www.farmers.gov/</u> <u>cfap</u>. Forms are on-line.

All applicants need to be signed up with USDA FSA to be able to apply for these funds. If you have NAP, have had a USDA-FSA loan or have USDA NRCS cost-share funding you are probably already in their system. If not, to start the process you will need to provide:

- Name and address
- Personal information, including your Tax Identification Number
- Farm operating structure
- Adjusted Gross Income compliance certification to ensure eligibility

Direct deposit information to enable payment

Because USDA disaster payments almost always require you to be signed up with FSA, even if CFAP payments are not much, signing up with USDA-FSA would get you into the USDA system to be eligible for future programs. Also, by being in the system, USDA is more likely to see how disasters impact your farm.

Spray Mixing Instructions Considering Tree Row Volume (TRV)

Terence Robinson, Poliana Francescatto, and Jaume Lordan, Cornell University

Plant Growth Regulator response is a function of the amount of chemical deposited on the leaves of the tree. The amount of chemical that is sprayed per acre should consider tree size to not over-apply chemical to small trees and under-apply chemical to large trees.

Tree size can be used to adjust the amount of chemical added to the spray tank by calculating the size of the tree canopy (tree row volume). The tree row volume (TRV) of an orchard is defined as the volume of water needed to spray the trees to drip point, which is termed a full dilute spray.

The amount of chemical can then be adjusted to the size of the trees with fully-grown trees receiving a full amount (100% dose) and smaller trees receiving an appropriate fraction of a full dose.

The volume of water used to carry the chemical to the leaves can be less than the full dilute volume, but if less than the full dilute volume is used then the amount of chemical in the tank must be concentrated to allow the proper amount of chemical to be applied to each tree.

The concentration factor is determined by dividing the full dilute volume of water (TRV) by the actual amount of water to be sprayed.

First Step is to Mix the Tank Properly

This process can be broken down into 3 easy steps:

1. <u>Calculate Tree Row Volume</u> (Tree height X Tree width X 43,560 X 0.7) / (Between row spacing X 1000)

- Example of a Tall Spindle Orchard for many mature Tall Spindle Orchards this is ~200 gallons/acre. Example (11' X 7' X 43560 X 0.7) / (12' X1000) = 196 gallons/acre (rounded to 200GPA).
- For the example of the Tall Spindle trees lets assume you set up the sprayer to spray ½ of Tree Row Volume which would be100 gallons/acre. Thus this is a 2X application on TRV trees of 200GPA (200/100=2).
- Multiply the recommended rate for 100 gallons dilute TRV basis X 2 for each chemical (except oil or surfactants).
- 2. Then set up the sprayer for less than the full TRV amount
- 3. Concentrate the chemicals in the tank

We suggest that for each orchard block, you calculate tree row volume with the formula above and set up your sprayer for some fraction of TRV and then calculate YOUR own concentration factor. **Note**- Old semi dwarf trees may be 300GPA+ however, these older bigger trees with more vigorous rootstocks, thin easier, so set your maximum TRV at 200 GPA max, never 300. However younger trees in tall spindle blocks may be only be 150, 125 or 100 GPA TRV on younger trees. We strongly recommend that you calculate the actual TRV with the formula in #1 above and then adjust the chemical rate based on how many gallons you spray per acre.

Next Step is Adjusting the Spray Pattern

Often the bottoms of trees show over-thinning while the tops of trees show under-thinning. Our standard recommendation is to nozzle the sprayer so that 2/3 of the spray volume is directed to the top half of the tree and only 1/3 is directed to the bottom half of the tree. Recent studies have shown that this still gives 65% of the fruit in the top half of a tall spindle trees and only 35% of the fruit in the bottom half of the tree. To overcome this imbalance of crop load and ensure fruit on the entire tree uniformly, our new recommendations are in two parts:

- 1. Bloom and petal fall sprays
 - Adjust nozzles so that spray pattern directs 2/3 of the spray to the top of the tree and 1/3 to the bottom of the tree.
- 2. Sprays from 10-18mm
 - Completely shut off the bottom half of the nozzles, so that all of the spray is directed to the top half of the tree and no spray be directed to the bottom half of the tree.
 - Mature Tall Spindle Orchard (11' X 7' X 43560 X 0.7) / (12' X1000) = 196 gallons/acre (rounded to 200GPA)
 - Sprayer calibrated at 100GPA (1/2 TRV)
 - Concentration factor = 2X (200/100=2)
 - The dilute rate for Sevin is 1pt/100 but the orchard needs 200 gallons for full coverage so each acre should receive 2pts.
 - The dilute rate for Maxcel is 48oz/100 but the orchard needs 200 gallons for full coverage so each acre should receive 96 oz.
 - Calculation: 1pint Sevin x 2X= 2pt Sevin per 100 gallons of spray
 - + 48 ounces Maxcel x 2X=96 oz. Maxcel per 100 gallons of spray
 - If your tank is 500 gallons you would times chemical by 5
 - 5 x 2 Pints of Sevin XLR= 10 pints per 500 gallon tank+
 - 5 x 96 ounces Maxcel=480 ounces per 500 gallon tank and sprayer will cover 5 acres

These recommendations are based on three years of research with Terence Robinson and Andrew Landers and the last 3 years with Poliana Francescatto and Jaume Lordan. Turning off the bottom half of the nozzles and adjusting the chemical rate up produced the most uniform fruit set overall. The reason this works is that the upper part of the tree gets so much sun light and therefore produces more carbohydrate. Fruit on top receive a greater carbohydrate supply making fruits harder to thin, as compared to the fruit located on the bottom of the tree where you have more shade. The harder to thin

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fruit on tree tops need the extra chemical (PGR) to assist in thinning fruit.

Please note that when you shut off the bottom half of the nozzles you need to adjust up your rate of chemical per acre you add to the tank since the volume of water applied per acre is less. We still want to keep the same amount of chemical per acre, even though you are spraying only the top of the trees. The bottom part of the trees will get some drift and do not need to be directly sprayed in 8-14 and 18mm sprays. Therefore, if we turn off 50% of the nozzles and reduce the GPA by 50% you need to recalculate the concentration factor and increase the amount of chemical you add to the tank. More chemical has to go in the tank to account for the factor of shut off nozzles and less water is applied to the acre.

For example, if you reduce the water per by 50%, instead of covering five acres with one tank it now covers ten acres. The way to think about this is how many acres will your tank be covering, this determines how much chemical per acre you need to add. (If you just want to try shutting off 30% of the bottom nozzles that's ok to start, and adjust the chemical you add per tank accordingly.)

Note: one important item, you will have to know the output of the nozzles you turn off, to calculate the water reduction in gallons per acre. Often growers already have smaller nozzle sizes on the bottom. Calculate the total output for each nozzle turned off on each side x 2 sides, and subtract from your GPA to get your actual GPA output.

Example 1. Calculations for bloom or petal fall spray of

Maxcel+Sevin with all nozzles on. Standard rate of Sevin XLR at 1 pint per 100gal TRV basis+ Maxcel at 48 ounces per 100 gallons TRV basis:

Example 2. Calculations for 12mm or 18mm sprays of Maxcel+Sevin with bottom nozzles turned off. Standard rate of Sevin XLR at 1 pint per 100gal TRV basis+ Maxcel at 48 ounces per 100 gallons TRV basis:

- Mature Tall Spindle Orchard (11' X 7' X 43560 X 0.7) / (12' X1000) = 196 gallons/acre (rounded to 200GPA)
- Sprayer calibrated at 50GPA (1/4 TRV since bottom half of nozzles turned off)
- Concentration factor = 4X (200/50=4)
- The dilute rate for Sevin is 1pt/100 but the orchard needs 200 gallons for full coverage so each acre should receive 2pts.
- The dilute rate for Maxcel is 48oz/100 but the orchard needs 200 gallons for full coverage so each acre should receive 96 oz.
- Calculation: 1pint Sevin x 4X= 4pt Sevin per 100 gallons of spray
- + 48 ounces Maxcel x 4X=192 oz. Maxcel per 100 gallons of spray
- If your tank is 500 gallons you would times chemical by 5
- 5 x 4 Pints of Sevin XLR= 20 pints per 500 gallon tank+

• 5 x 192 ounces Maxcel=960 ounces per 500 gallon tank and sprayer will cover 10 acres

Example 3. Calculations for bloom or petal fall spray of NAA+Sevin with all nozzles on. Standard rate of Sevin XLR at 1 pint per 100gal TRV basis+ NAA (Fruitone) at 10ppm or 4 ounces per 100 gallons TRV basis:

- Mature Tall Spindle Orchard (11' X 7' X 43560 X 0.7) / (12' X1000) = 196 gallons/acre (rounded to 200GPA)
- Sprayer calibrated at 100GPA (1/2 TRV)
- Concentration factor = 2X (200/100=2)
- The dilute rate for Sevin is 1pt/100 but the orchard needs 200 gallons for full coverage so each acre should receive 2pts.
- The dilute rate for Fruitone is 4oz/100 but the orchard needs 200 gallons for full coverage so each acre should receive 8 oz.
- Calculation: 1pint Sevin x 2X= 2pt Sevin per 100 gallons of spray
- + 4 ounces Fruitone x 2X=8 oz. Fruitone per 100 gallons of spray
- If your tank is 500 gallons you would times chemical by 5
- 5 x 2 Pints of Sevin XLR= 10 pints per 500 gallon tank+
- 5 x 8 ounces Fruitone=40 ounces per 500 gallon tank and sprayer will cover 5 acres

Example 4. Calculations for 12mm or 18mm sprays of NAA+Sevin with bottom nozzles turned off. Standard rate of Sevin XLR at 1 pint per 100gal TRV basis+ NAA (Fruitone) at 3 ounces per 100 gallons TRV basis:

- Mature Tall Spindle Orchard (11' X 7' X 43560 X 0.7) / (12' X1000) = 196 gallons/acre (rounded to 200GPA)
- Sprayer calibrated at 50GPA (1/4 TRV since bottom half of nozzles turned off)
- Concentration factor = 4X (200/50=4)
- The dilute rate for Sevin is 1pt/100 but the orchard needs 200 gallons for full coverage so each acre should receive 2pts.
- The dilute rate for Fruitone is 3oz/100 but the orchard needs 200 gallons for full coverage so each acre should receive 6 oz.
- Calculation: 1pint Sevin x 4X= 4pt Sevin per 100 gallons of spray
- + 3 ounces Fruitone x 4X=12 oz. Fruitone per 100 gallons of spray
- If your tank is 500 gallons you would times chemical by 5
- 5 x 4 Pints of Sevin XLR= 20 pints per 500 gallon tank+
- 5 x 12 ounces Fruitone=60 ounces per 500 gallon tank and sprayer will cover 10 acres

UPCOMING EVENTS & IMPORTANT INFORMATION

High Tech Precision Orchard Spraying

July 20, 4-5pm

Join us the afternoon of July 20th via Zoom to learn what's new in orchard precision spraying technology.

We'll be joined by Dr. Jason Deveau, Dr. Heping Zhu, and Steve Booher.

Jason is the Application Technology Specialist with the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA). Jason literally "wrote the book" on airblast spraying, and will discuss how to improve spray targeting as well as the benefits of rate controllers.

We will then hear from Dr. Heping Zhu and Steve Booher. Heping is an Agricultural Engineer with the US Department of Agriculture Agricultural Research Service, and has extensively researched intelligent spray application technologies for horticultural crops. Steve is the founder and CEO of Smart Guided Systems, who worked closely with Heping to commercialize their research into the Smart Apply Intelligent Spray Control SystemTM. Heping and Steve will discuss the science behind and the commercial application of their system, which utilizes pulsed lasers and advanced computer algorithms to remotely sense the volume of each tree to deliver a precise spray volume in real time.

After their presentations, we will open up the meeting for all three presenters to field questions and comments.

Register at the following link: https://tinyurl.com/precisionspraying

Best Management Practices for U-Pick Farms During the COVID-19 Pandemic

U-Pick is a critical direct marketing approach for many of our farms and provides customers with a unique connection to fresh produce grown close to home. In light of what we understand about the spread of COVID-19, new management practices will be needed to protect your farm team and your customers. This document provides recommended practices and communication strategies for U-Pick operations for the 2020 season. View it here: <u>https://smallfarms.cornell.edu/resources/farm-resilience/best-management-practices-for-u-pick-farms-during-the-covid-19-pandemic/</u>

PPP is Still Available—Legislation is Likely to Increase Flexibility for Loan Forgiveness

The PPP (Paycheck Protection Program) is a low interest SBA disaster loans with a grant component intended to help businesses cover routine operating costs during a disaster. In a nutshell: PPP allows up to 100% loan forgiveness for payroll, rent, utilities and mortgage interest paid in the 8 weeks directly after receiving the loan. The part that is not forgiven is a 1% loan with no fees. Must be paid back in 2 years.

If you anticipate some challenges this season, you should look at PPP. Although the grant portions are targeted to specific items and must be used appropriately, having the grant could help to offset your higher costs in other areas for managing COVID-19 that may not be reimbursed. This can include additional mileage, credit card fees, cleaning supplies, loss of revenue from public events, possible overtime costs and the cost of caring for sick workers, should some of your employees become sick. So far, for most NYS fruit growers, I think it is the most beneficial COVID-19 federal grant program. Getting PPP could have tax implications however, so you should check with your tax advisor. For example, you currently will not be able to deduct expenses on your 2020 federal taxes that are paid for with PPP grant funds. This could change however as these programs are being designed on the fly.

Link to SBA information for PPP <u>https://www.sba.gov/funding-programs/loans/coronavirus-relief-options/paycheck-protection-program</u>

Tree Fruit Specialists

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