



## Greetings from Whately

### Optimistic.

This is how I would describe the future of our industry. Over the last few months, I have traveled to visit customers, attend trade shows, and sit in on conferences.

Despite everyone being impacted by the rising expenses of conducting business operations in 2022, it appears the demand for local food has not softened. Growers are reporting that it's a lack of product, not a lack in market demand, as their major challenge. **We want you to know we hear you, loud and clear.**

These conversations have left me feeling hopeful and confident for what lies ahead. As always, we at Nourse Farms are dedicated to your success. As you navigate today's interesting business climate, we are here for you. Whether you need new plants, growing advice or want to collaborate on a future growth plan – we are here for you.

Welcome to our 2023 Newsletter. We are looking forward to serving you this year.

Best Regards,

A handwritten signature in black ink that reads "John Place".

John Place  
Chief Executive Officer  
jplace@noursefarms.com



*This newsletter was produced  
by the collaborative effort of  
the Nourse Farms Sales and  
Customer Service Team.*

# The Importance of Scouting

**Insect pest management is an important component to successful crop production.** The key to an effective pest control program relies on regular monitoring, accurate identification, and proper control timing. Scouting and monitoring for insect pests helps identify and address potential issues before loss occurs or mitigate damage, reduce pesticide usage, and decrease damage to non-pest populations. Monitoring of populations also allows growers to make decisions on applications based on economic thresholds limiting unnecessary pesticide applications.

Regular scouting should begin in early spring and continue weekly/bi-weekly throughout the season. Before beginning a scouting program, identify the key pests for your crop, their development, and the damage caused. When scouting, accurate record keeping is essential. Historical information as well as weather data can be used to track crop and/or pest development stages in relation to temperature and moisture conditions.

Tools for scouting may include a clip board, reference guide/previous scouting notes, camera, hand lens, sweep net, sticky traps, spade or small shovel, knife and hand pruners, disinfectant for hand tools, containers for samples, online/mobile identification/monitoring tools. Many regions have websites and/or mobile apps to assist growers in pest identification and/or monitoring of populations or conditions suitable for infections.

Fields and greenhouses should be split into manageable sections and scouted separately. Scouts should walk in an X or W pattern to get accurate composite of area; patterns should change with each trip. In each section, select three to five sample points and inspect 10 – 20 plants, or about 100 square feet. Consider separating large fields by variety, age and spacing. All plant parts should be inspected, including leaves (top and underside), stems, roots and flowers and fruit.

For specific pesticide recommendations, please refer to your local extension agent.

## Key Pests in Small Fruit & Asparagus

### Two-spotted spider mite

#### Identification

- Adults about 1/50 inch in length, pale greenish yellow/yellow to dark green or brown, oval shaped
- Two large dark spots on back
- Overwintering females often orange to orange-red
- Eggs are spherical and transparent to yellowish
- Webbing may be present, especially during heavy infestations

#### Lifecycle

- Prefer temperatures above 80 F with low moisture levels
- Females lay up to 20 eggs per day, up to 120 total
- Larvae hatch in 1 – 2 weeks, depending on temperatures, can be as little as 3 days in hot weather
- Overwinter as adults, or sometimes eggs, on underside of leaves and emerge in early Spring

#### Host Plants

- Wide host range including strawberries, brambles, blueberries, vegetables, tree fruit, ornamentals and weeds

#### Damage

- Feeding damage causes stippling on leaves, lack of vigor, stunting, reduced yields
- Silken webbing may be visible

#### Monitoring period

- Outdoors – Early spring through late fall
- Greenhouses – Year-round

#### Control

- Maintain healthy plants, spider mites thrive on stressed plants
- Encourage natural predator populations
- Limit insecticide treatments unless necessary, as they can harm predators often increasing spider mite populations



Two-Spotted Spider Mite with eggs

Photo by Gilles San Martin from [https://commons.wikimedia.org/wiki/File:Tetranychus\\_urticae\\_\(4884160894\).jpg](https://commons.wikimedia.org/wiki/File:Tetranychus_urticae_(4884160894).jpg)

### Tarnished Plant Bug

#### Identification

- Adults about ¼" long, winged and greenish-brown with yellow and black dashes, have a brassy appearance

#### Life cycle

- Prefer temperatures above 50 F but temperatures above 94F stops/ slows development
- Overwinter as adults in protected locations
- Return to field around early bud swell
- Females lay 1 – 3 eggs per day, 30 – 120 total per lifespan
- Eggs are laid in plant tissue
- Nymphs hatch in 5 – 7 days and take up to 40 days to develop into adults, can be as little as 12

#### Host plants

- Wide host range including strawberries, brambles, blueberries, asparagus, vegetables, tree fruit, ornamentals and weeds

#### Damage

- Adults and nymphs feed on unopened buds, flowers & tips of young fruit
- Damaged areas of fruit do not develop further, causing misshapen "cat faced" berries

#### Monitoring period

- Early spring through late fall

#### Control

- Scout flower/fruit clusters beginning at early bloom
- Nymphs can be easily identified by tapping flower clusters into a white cup or bowl
- Insecticide treatment should occur if average nymphs per fruit cluster is greater than one
- Several parasitoids are effective against TPB



Tarnished Plant Bug

Photo from NC State University <https://cotton.ces.ncsu.edu/insect-scouting-guide/tarnished-plant-bugs/>



## Spotted winged Drosophila

### Identification

- Adults about 3 mm long. Red eyes, tan body with dark brown bands
- Adult males have a single spot on each wing
- Adult females have a serrated ovipositor, visible under microscope
- Larvae about 1/8", white cylindrical body that tapers on one end

### Life cycle

- Prefer temperatures above 50 F; 94F+ stops/slows development
- Overwinter as adults in leaf litter, rotting fruit. Higher survival in mild-winter climates, or milder winters
- Adults live about 2 - 3 weeks, up to 9 weeks in summer
- Females lay up to 100 eggs per day, several hundred total
- Larvae hatch in 1 - 3 days. Take 7 - 10 days to mature into adults

### Host plants

- Wide host range of thin-skinned fruits and vegetables including strawberries, brambles, blueberries, cherries, tomatoes, as well as other damaged fruits

### Damage

- Females use serrated ovipositor to lay eggs in healthy, ripening fruit
- Larvae feed within fruits causing them to soften and brown
- Damage often not visible until after harvest

### Monitoring period

- Active during entire growing season but populations increase with temperatures
- Traps are often used to detect adult presence

### Control

- Regular picking, and sanitation, removing overripe/dropped fruit
- Removing wild hosts
- Removing foliage from lower canopy, in brambles
- Regular pesticide applications, 3 - 7 days depending on crop
- Early research on predators increasing



Adult Spotted Winged Drosophila  
(Male, left. Female, right)

Photo by Shane F. McEvey, Australian  
Museum, via Wikimedia Commons

## Raspberry Cane Borer

### Identification

- Adults: slender, black, long-horned beetles, 1/2" long, yellow-orange thorax, 2 - 3 black dots
- Larvae: legless, light-colored, 3/4" long

### Life Cycle

- Two-year life cycle
- Adults emerge in late spring/early summer
- Females puncture cane in 2 rows, 1" apart, 6" below tip of cane
- Eggs are laid in pith of cane between puncture marks
- Larvae hatch and tunnel down the cane
- 1st year Larvae overwinter in the cane close to the girdle
- The following year larvae move through the cane down to the crown
- 2nd year larvae overwinter at or below ground level and complete development the following spring

### Host plants

- Brambles: raspberries, blackberries, black raspberries

### Damage

- Two rows of puncture marks, 1" apart about 6" below tip of cane
- Tips wilt above punctures
- Cane death can occur if larvae is not removed

### Monitoring period

- Late spring through fall

### Control

- Prune out wilted tips as soon as they are noticed, ensure canes are cut below larval tunneling
- In heavy infestations, insecticide treatments should target adults pre-bloom



Raspberry Cane Borer  
Photo by Jon Yuschock  
N.C. Cooperative Extension



Damaged tip, Raspberry Cane Borer  
Photo by Ric Bessin  
U. of Kentucky Entomology

## Rednecked Cane Borer

### Identification

- Adults: 1/2" long, slender, metallic blue-black, coppery thorax
- Larvae: flatheaded, white, 5/8" - 3/4" long when mature

### Life Cycle

- Overwinter as larvae in canes
- Larvae pupate early spring, adults emerge late spring/early summer
- Adults lay eggs on undersides of raspberry leaves
- Larvae hatch in 4 - 24 days
- Larvae chew into cane and tunnel in spiral pattern
- Larvae pupate in 10 - 14 days and emerge as adults

### Host plants

- Brambles: raspberries, blackberries, black raspberries

### Damage

- Larval feeding causes cane to swell, sometimes forming gall
- Canes weakened often breaking above swelling

### Control

- Remove canes showing swelling and destroy them
- In heavy infestations, insecticide treatments should target adults pre-bloom or post-harvest



Rednecked Cane Borer  
Photo by Ric Bessin  
University of Kentucky Entomology

## Strawberry Root Weevil

### Identification

- Adult beetles: small dark snouts, rows of pits along backs, 8-12mm
- Larvae C-shaped, legless, white with tan heads, up to 12 mm long

### Life Cycle

- Larvae overwinter in soil, pupate early spring, adults emerge late spring/early summer

### Host plants

- Strawberries, brambles and some ornamental plants

### Damage

- Adult weevils feed on leaves (notching), causing minimal damage
- Larvae feed on roots through winter and spring, causing stunting and poor yields, sometimes death in severe infections

### Monitoring period

- Early summer, inspect for adult feeding damage

### Control

- Treat soon after adult feeding begins, before egg laying
- Predatory nematodes



Strawberry Root Weevil  
Photo from Michigan State University  
<https://www.canr.msu.edu/resources/strawberry-root-weevil>

## Aphids

### Identification

- Small sap-sucking insect, typically green, mostly wingless
- Several aphid species can be found on strawberry leaves
- Species ID is important! Damage and control varies by species

### Life Cycle

- Overwinter as eggs on underside of strawberry leaves
- Eggs begin to hatch in early Spring
- Adults begin to fly in early summer
- Can be vector for viruses in strawberry

### Host plants

- Wide host range including small fruit, vegetables, trees

### Damage

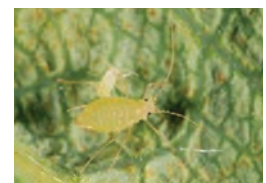
- Honeydew deposition from feeding can cause sooty mold
- Can be a vector for viruses

### Monitoring period

- Early spring through late fall

### Control

- Encourage predator populations
- Limit insecticide treatments unless necessary



Aphid (Nymph, top. Adult, bottom)  
Photo by Jeffrey W. Lotz  
Florida Dept. of Ag. and Consumer  
Services, Bugwood.org

# FIVE POINTS TO PREPARE

*Get Ready for the Season!*

## IMPORTANT: RUNNER REMOVAL IN PLASTICULTURE STRAWBERRY PRODUCTION

**1** Plasticulture strawberry production has continued to grow in popularity in North America in recent years. For new growers or those converting from matted-row production, runner removal can seem a costly practice. However it is essential to optimize fruit production.

Runners act as an energy sink on their mother plant, reducing resources that support fruit bud development. They also interfere with cultivation and pest control. Runner reduction increases berry size and fruit numbers per plant.

A trial conducted in Ontario showed that runner removal (once, three times and weekly for two months) increased both total yield and marketable yield of spring planted 'Albion' during the planting year. This included a 37% - 45% increase in total yields of derunnered plants over plants with no runner removal.

Similarly, a study in the Netherlands saw a 15% increase in planting year yields of derunnered plants, but a decrease in yields on plants with leaf removal. This increased yield was compared to the total yield of plants where no runners were removed, and these runners contributed to the total yield of the plants.

Runner removal should be done regularly, as often as weekly, but even removing runners just three times during the season can increase yields compared to only one removal or no removal.

## USING CONSUMER INSIGHT TO YOUR ADVANTAGE

**2** Data shows that 93% of consumers have used online reviews to guide purchases, and 81% of consumers use Google to evaluate local businesses before visiting.

Today, there are countless platforms available for customers to leave reviews; Google, Dave's Garden, Yelp, Facebook, TripAdvisor, Better Business Bureau, to name a few.

Good or bad, these reviews can be used to your advantage.

- **Harness the power of positive reviews** by showcasing them in your catalog and on your website. Tell customers where they can find reviews and encourage satisfied customers to post reviews of their own.
- **Use common words or phrases from positive reviews** in taglines on your website, driving more customers to your page.
- **Negative reviews can be useful tools** in determining where you may be falling short on satisfying customers. Use these reviews as an opportunity to improve on products or processes that may not be working for you. Include customer feedback in your employee trainings.
- **Engage with customer reviews.** Take advantage of the opportunity to offer a solution to an unhappy customer and built rapport with happy customers.

Reviews are out there, and we believe that paying attention to consumer insights is an indisputable benefit to any business.

## MAXIMIZING HERBICIDE EFFECTIVENESS

# 3

Many factors impact the effectiveness of herbicides.

- **Sprayer calibration is important.** Be sure your spray tips are not worn, as that will result in uneven application. Some labels call for 3 ounces of material: a small amount in a 100-gallon tank. Proper calibration assures that you are applying enough, but not too much. Your sprayer manufacturer or your local Extension Service will have guidelines for calibrating your sprayer properly.
- **The pH and water quality of your spray water** will also affect performance of herbicides. There are many kits to test water's pH; better kits will provide a more accurate reading. Your herbicide's label will also indicate the correct pH for the most effective results. High levels of calcium and magnesium in hard water can negatively impact effectiveness; there are a variety of products available to soften water.
- **Avoid overlapping when applying herbicides.** Referring to the 3 ounces in the first item, overlapping doubles the rate. This could result in crop injury.
- **Be aware of wind conditions.** Herbicide drift can cause damage to a neighboring crop. Do not apply when wind is above 5 miles an hour.
- **Follow safety rules** as outlined on product label to ensure proper PPE (Person Protective Equipment) and re-entry interval. Be cautious when mixing, and making spray applications.
- **Properly identify your predominant weeds and their growth stage.** Herbicides can have different levels of effectiveness based on the weed stage. Consult the label for the appropriate growth stage for application.

## OXIDATE ON SWD

# 4

Numerous studies over several years have demonstrated the efficacy of OxiDate® 2.0 and OxiDate® 5.0 on many pathogens on multiple crops: powdery mildew on grapes and strawberries, yellow rust on red raspberries, and anthracnose on blueberries. Adding OxiDate 5.0 to a spray program reduces disease in the field, and also improves control of spotted wing drosophila (SWD) in these small fruit crops. In a study

conducted by Agriculture and Agri-Food Canada on SWD, OxiDate 2.0 indirectly contributed to the control of SWD <sup>1</sup>. Applying OxiDate 2.0 prior to Malathion reduced larvae, pupae, and adult SWD on cherries better than applying Malathion first, or no treatment at all. By reducing microbial populations (yeasts, bacteria) on the surfaces of fruit, OxiDate 2.0 likely improved the efficacy of the insecticides and deterred oviposition <sup>2</sup>.

In 2013, Cornell University labs demonstrated that a 1% (v/v) solution of OxiDate 2.0 on blueberries had a direct impact on controlling eggs, adult SWD, and larval presence in berries by 56% <sup>3</sup>. Here, OxiDate 2.0 burned eggs lying on the fruit surface and burned breathing tubes of eggs under the fruit surface <sup>4</sup>. Another study at Cornell University demonstrated that applying antimicrobials such as OxiDate 2.0 with insecticides during grape ripening significantly controls sour rot better than using OxiDate 2.0 alone or insecticide alone <sup>5</sup>. Sour rot can be difficult to control because it results from multiple microbes, including yeasts and bacteria, and is spread by SWD; using simultaneous treatments can cover all the bases more effectively.

The best SWD management plan is an aggressive sequence of effective chemistry that protects plants and fruit from all channels of infestation. Often, one chemistry isn't enough; adding microbial elements to a spray program strengthens all your defensive protections. Both OxiDate 2.0 and OxiDate 5.0 provide additional control of SWD populations in fruit and berry crops by working in tandem with insecticides. PAA (Peracetic Acid) products like OxiDate can reduce SWD populations by burning eggs' breathing tubes. Reducing desirable yeasts on the surface of the berries deprives SWD of their food source and prohibits the yeasts from breaking down the insecticide, increasing insecticide longevity. The addition of OxiDate 2.0 or OxiDate 5.0 to a typical spray program can enhance disease control as well as SWD control, improving fruit quality at harvest.

1, 2 Murali-Mohan Ayyanath, Cheryl L. Zurowski, Ian M. Scott, and Kenna E. MacKenzie. 2017. Report on the Effect of OxiDate 2.0 for Suppressing *Drosophila suzukii* (Matsumura) Populations. Agriculture and Agri-Food Canada (AAFC), Summerland RDC, BC, Canada.

3 Jentsch, Peter J. et al. 2013. Evaluation BioSafe Products for Controlling SWD on Blueberry. Cornell University's Hudson Valley Laboratory, Highland, NY 12528.

4 Jentsch, Peter J. and Lampasona, Tim. 2013. Evaluation BioSafe Products for Controlling SWD on Blueberry. Cornell University's Hudson Valley Laboratory, Highland, NY 12528.

5 Megan E. Hall, Gregory M. Loeb, and Wayne F. Wilcox. 2018. Control of Sour Rot Using Chemical and Canopy Management Techniques. *Am. J. Enol. Vitic.* 69:4.

*Continued on page 7*

# Small Fruit Winter Injury Update

## Strawberries

The duration of cold temperatures, the amount of snow cover you may have had at the time, and the amount of straw mulch applied are all factors that can influence the amount of damage caused. This can range from mild injury, causing reduction in vigor, all the way to extensive damage that is of major concern.

To assess your damage, take the following steps:

- Go out now and sample your field; take plants from across the bed, outside edges to the center.
- Cut open the strawberry crown from top to bottom (vertically), rather than crosswise (horizontally) to determine the extent of damage.
- Immediately evaluate the color of the crown – with no winter injury the crown should have a creamy-white color.

## Injury levels

**Mild injury would result in a brown flecking inside the cut crown.**

The deeper the brown coloration in the crown, the more damage is indicated. Plants will grow out of this medium damaged condition and can produce a normal crop.



Photo courtesy of Ontario Ministry of Agriculture, Food & Rural Affairs

**Major or extensive damage would result in the crown having a dark brown color and corky texture.**

This condition is the most concerning and requires careful spring management of the field.

Damage needs to be managed carefully to harvest the best crop; this includes:

- Minimizing stress to the plant. The efficiency of the plant to make use of water and nutrients may be reduced because the conduction tissues have been impacted.
- Maintaining good moisture levels. 1 - 2 inches per week, through the harvest period, which allows the damaged tissue to absorb the required moisture.
- Managing fertilizer applications. Light nutrient applications, either ground applications of granular nitrogen or foliar applications with spring fungicides. Depending on the degree of damage, a range of 15 - 30 pounds of actual nitrogen per acre would be effective by "spoon feeding" small amounts over several applications.

Closely monitoring moisture levels and nutrient applications through the harvest period is critical to maximize your yield from these stressed plants.



Photo courtesy of Ontario Ministry of Agriculture, Food & Rural Affairs



## Brambles

With raspberries and blackberries, winter injury can appear in a variety of ways. Very cold temperatures during the winter can kill overwintering floricanes and damage the crown and root system in extreme cases. Late frost in spring can result in injury or even death of flower buds on floricanes-fruiting varieties, drastically impacting yield.

The most typical form of winter injury, however, results from fluctuating temperatures during the dormant season. This injury occurs after plants have achieved their chilling requirements and are no longer fully dormant. Variable temperatures during the winter tend to damage less cold-tolerant tissue. March can often be when injury occurs as you see more fluctuating temperatures, rather than in mid-winter when plants are totally dormant.

Winter injury typically kills or damages the overwintering floricanes but not new primocanes. There are a variety of methods for assessing winter injury that allow you to evaluate the extent prior to spring pruning. One of the simplest methods includes cutting buds lengthwise (tip to base), as buds have begun to swell to check for blackened centers or damaged tissue. This assessment can also be done prior to bud swell by putting cut canes in a bucket of water in a warm sunny location.

Winter injury is prevented by making appropriate site selection, avoiding frost pockets, having good air drainage, and planting sufficiently winter hard varieties for your area.

**Please contact us if you have any questions!**

## ATTENTION: Powell Transplanter Parts Available!

- 19 ½" Planter Discs PT#003-4528
- Opener Clamp PT#004-4859
- Sliding Furrow Opener PT#003-4504
- 9 Tooth Drive Gear PT#004-4601
- 11 Tooth Idler Gear PT#004-4602
- 10/11 Tooth Drive Gear PT#004-4603
- 10 Tooth Drive Gear PT#004-0511

**Contact us for pricing and details!**

*Continued from page 5*

## STORAGE & HOLDING OF DORMANT PLANTS

# 5

Here at Nourse Farms, we pack, hold, and ship our plants in their dormant stage for spring planting. Our plants perform best when planted into warm soil, after the risk of hard frost has passed. When growers receive plants, they should plant within 2 - 3 days of receipt. So, what do you do

when they are received when conditions may not be suitable for immediate planting?

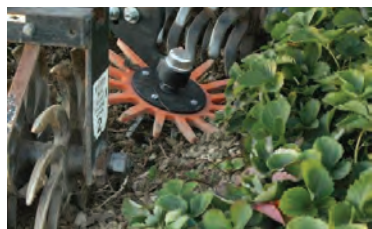
For a short duration, up to 7 - 10 days, plants can be held in a standard walk-in cooler at 35°F - 40°F. For durations longer than 10 days, plants must be held at a consistent 28°F to maintain dormancy. If plants cannot be held

at temperature, they should be potted. Potted plants should be allowed to root well before transplanting to reduce shock.

Upon receipt, check the condition of the plants. Bareroot strawberry and raspberry plants are shipped in a plastic bag with moistened shredded paper added to prevent the roots from drying out. Check that paper has not dried and moisten slightly if necessary. Asparagus plants are susceptible to storage molds and should be kept dry. If mold is noticed at receipt, remove the crowns from the box and lay them out in a single layer, out of direct sunlight. After 2 - 3 hours, they can be put back into the box and moved into cold storage.

## Hillside Cultivator for Strawberry Weed Control throughout the Year

Weed control is probably the most difficult obstacle to successful strawberry production. In a matted row system a combination of effective mechanical tools will greatly reduce hand labor. The Hillside Cultivator incorporates several tools for the different stages of growth. Timing is always critical.



- **Rolling cultivator** gangs are part of the cultivator in all seasons and are excellent for uprooting weeds while not cultivating too deeply.
- **S-tines** mounted in the front position are used to move runners into the row. (pictured above)
- **Finger Weeder** attachment can be used all season for disrupting small weed growth along the row and close to plants. (pictured left)

- Through the late summer and into the fall, the width of the strawberry row can be controlled with the **rolling cultivators** and weeds between the row removed. These cultivations can remain shallow so that new weed seeds are not brought to the surface. Cultivation can also be done as an herbicide loses its effectiveness and prior to another low rate application.



- Following harvest and mowing the plants, the Hillside Cultivator is ideal for strawberry renovation. **Disk gangs** are mounted in the front position which are used to narrow the row and cut through the straw. A **coil tine** follows and fractures the soil which has been packed by foot traffic during harvest. The rolling cultivator in the rear rolls soil back toward the strawberry plants. Cultivating speed is 3-4 mph with two passes normal for each row. This machine is more economical and less disruptive of soil structure than a rototiller.

- The **Eco Weeder** is a PTO driven machine with rotating vertical teeth that are manually moved between and around young plants. An attachment is available for straw removal in the spring.



- The cultivator can be used for vegetables such as Pumpkins, Squash, Potatoes, and Cole Crops.
- The cultivator can be used to straddle a plastic bed.

### Hillside Cultivator Co. LLC

911 Disston View Dr. Lititz, PA 17543

Cell 717-669-3158

[www.hillsidecultivator.com](http://www.hillsidecultivator.com)

Email: [sales@hillsidecultivator.com](mailto:sales@hillsidecultivator.com)

Prices can be found in the catalog  
section of our website



# **Brookdale Farm Supplies**

## **Toro Tempus Ag Controller, a revolution in automation**

The toro tempus ag controller allows for full farm automation. Tempus Ag uses a LoRa radio signal to create a bubble which allows for system automation. 1 base station produces a LoRa bubble of 5,200 feet in diameter. Multiple base stations can be added to cover large areas over one network for the entire application. The base stations can be operated on Wi-fi or with a 4G wireless signal. It can run irrigation cycles as well as collect environmental data, allowing growers to adjust their irrigation schedules as needed. **Tempus Ag can report on a variety of sensors; temperature, pressure, soil moisture, humidity and more. Tempus works in both an outdoor field setting and an indoor high tunnel or greenhouse environment, Tempus can send alerts via text or email at thresholds determined by the user. Perfect for frost alerts throughout the spring.**



Toro's **BlueLine PC** is a heavy wall drip tubing with pressure compensating integrated drippers that lasts 25 plus years. Designed for perennial crops such as blueberries, blackberries, and raspberries; BlueLine PC has an emitter built inside the tube which is placed every 12", 18", 24" or 36". The flow path technology in the PC dripper uses a shark tooth design providing a turbulent flow path that is independent from the wall of the tubing. That flow path, along with the self-flushing diaphragm allows for a dripper system that is very resistant to clogging. This produces a uniformly watered field for a long duration of time.

## **Soil Moisture Sensors**



**When should you turn your irrigation on? Most importantly, when should you turn it off?** By using soil moisture sensors, you can dial in your irrigation and know exactly what the plant has available for water. By keeping the soil moisture in the optimal range, you reduce plant stress, increasing the quality and yield of your fruit. Watermark Sensors are designed to be in the field for the season, and read as often as needed. They are not affected by freezing and are easy to use. They have a 0-200 centibar range and are internally compensated. One hand held reader can read any number of sensors. Sensors can also be read via a channel data logger or through the Toro Tempus-Ag system.

# **Brookdale Farm Supplies**

**38 Broad Street  
Hollis, NH 03049  
603-465-2240**

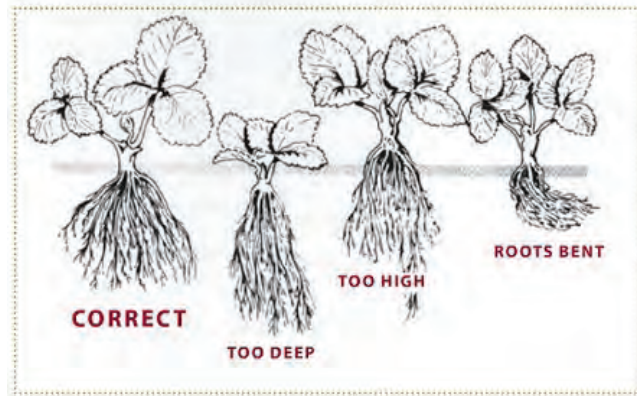
**[www.brookdalefruitfarm.com](http://www.brookdalefruitfarm.com)**

# Planting Tips for the Best Success!

Proper planting depth and technique is critical to success. One of the most common causes of planting failures we run into is improper planting technique. Below are our planting recommendations for best success.

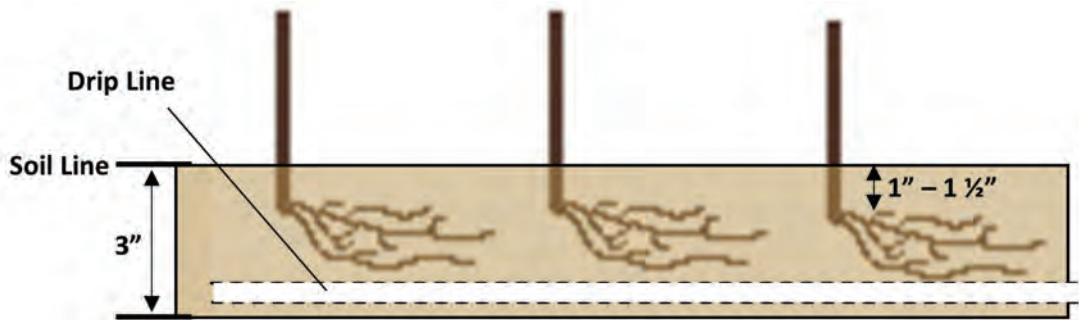
## Bareroot Strawberry

Strawberry leaves, roots, runners, and fruit all develop from the crown. Bareroot strawberry plants should be planted so that the middle of the crown is level with the soil surface. It is important that the roots are planted straight down and are not bent at the bottom. Be sure to dig a hole deep enough to accommodate all of the roots or use a tool such as the Nourse Farms Strawberry Planting Tool to push the roots into the soil. Care should be taken to maintain good soil contact and ensure soil is pressed firmly around the crown, but not hard-packed.



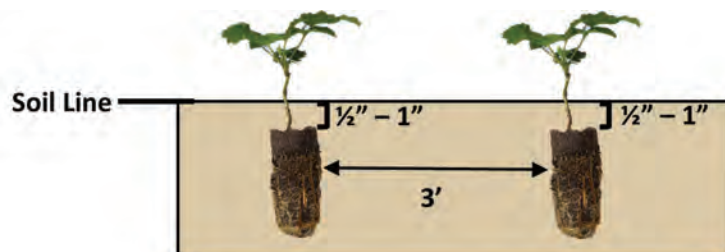
## Bareroot Raspberry

Raspberries develop new growth/canes from their shallow root systems. Dig a trench 3 - 4" and set raspberry roots horizontally along the trench, ensuring there is no more than 1 - 1½" of soil covering the roots. If using a plastic mulch in the planting year, best results can be achieved by setting the raspberry plants first and then laying plastic over them, poking the sticks through the plastic. It is critical that the roots are not set too deep, as this can prevent new growth and result in plant failure.



## Blackberry/Black Raspberry Plugs

Blackberries and black raspberries generate new cane growth from the crown. Like red raspberries, it is important that they are not planted too deep. Blackberry and black raspberry plants will arrive as a dormant plug. Plug plants should be set so that the top of the plug is approximately ½" below the soil surface.

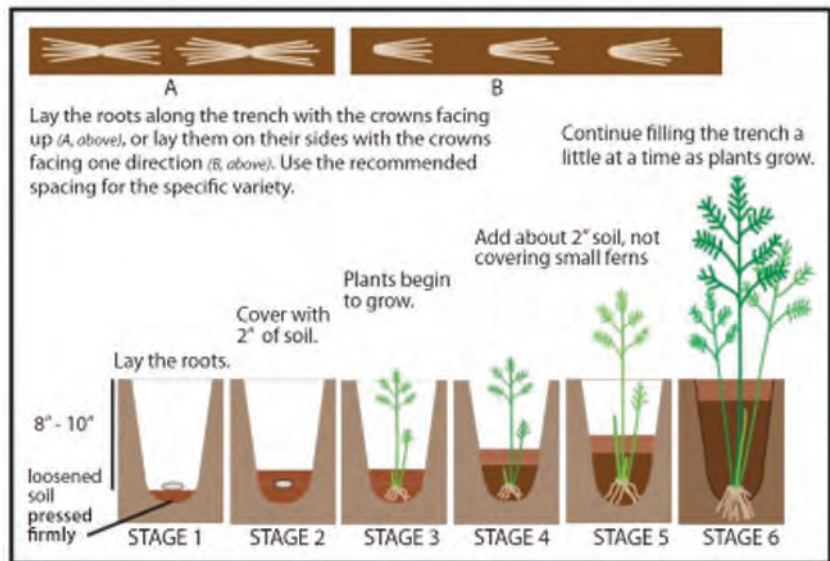


## Asparagus

Asparagus plants send new spears from the roots each spring, so they should be planted deep enough to avoid early emergence, but not too deep to prevent emergence all together. Dig a furrow 6 – 8" deep.

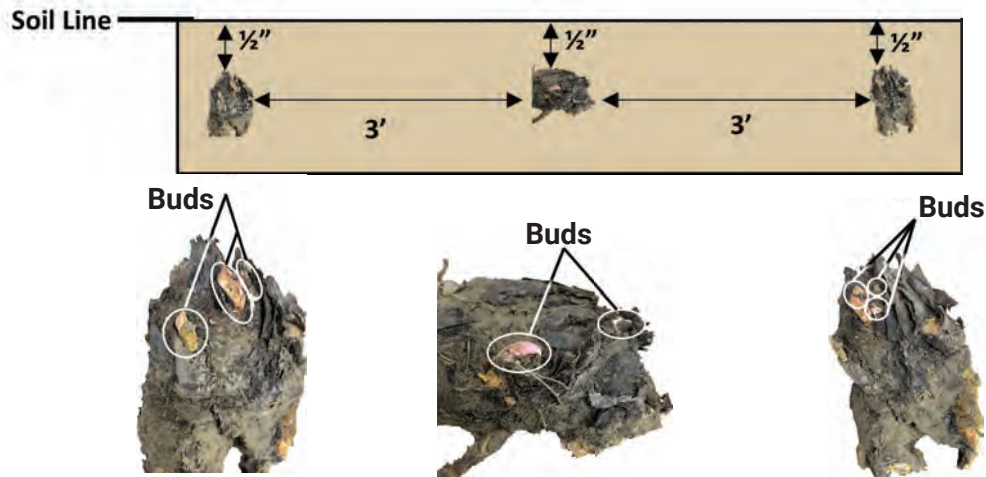
Lay roots horizontally along the bottom of the furrow and cover with approximately 2" of soil.

As spears emerge and grow up out of the trench, gradually back fill the trench with soil until it is completely filled.



## Rhubarb

We recommend planting rhubarb into heavily composted soil. Rhubarb plants will arrive from us as root divisions and you will find buds nestled in a protective layer of dark, papery husks. Set divisions in the ground with buds pointing up, approximately 1/2" below the soil surface. Be sure to maintain good soil contact and avoid breaking the buds.



## Horseradish

Horseradish roots will arrive with a flat cut end and a slanted cut end. Set horseradish in the ground at a 45 degree angle with the flat end up and the slanted end down, 1 - 2" below the soil surface.








41 River Rd. • South Deerfield, MA 01373

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<p><i>The Commonwealth of Massachusetts</i> <b>MASSACHUSETTS DEPARTMENT OF AGRICULTURAL RESOURCES</b> Crop and Pest Services 251 Causeway Street Suite 500 Boston, MA 02114</p> <p><b>Certificate of Nursery Inspection</b></p> <p>License No. N-2022 155      Fee: \$210      Issued: 5/4/2022</p> <p>THIS CERTIFIES THAT: in accordance with M.G.L., 128, section 17 as amended, the Nursery stock at: <b>Nourse Farms, Inc.</b> 41 River Rd. Whately, MA 01093</p> <p>Has been inspected and found to be apparently free from all injurious insects and plant diseases which might be disseminated on such stock.</p> <p>Expiration Date: 6/30/2023      Issued by: Howard Vinton</p>					
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SPRING 2023

Variety Highlight



## Mapema® Red Raspberry

From the **Advanced Berry Breeding (ABB)** in the Netherlands.

### Mapema characteristics:

- Early primocane variety, ripens about same as Polka with similar winter-hardiness.
- Large sized fruit.
- Growers like its good flavor and it produces high yields.
- Growers reporting its continued excellent performance.
- Will produce a florican crop in some areas of zone 5 and zone 6.

**We have a good supply of Mapema available for 2023.**

Licensing agreement required.

Bare Root \$2.32/each + \$1/plant royalty. Minimum 200.



For additional  
information see  
[noursefarms.com](http://noursefarms.com)

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