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Customer
Service




Greetings from Whately—

Welcome to our 2019 Spring Newsletter. We hope you find it useful. If you have any suggestions on how the newsletter could be more helpful to you, please let us know.

We all experienced a very difficult growing season in 2018 with the excessive rain. As a result, many of this spring's discussions focus on the results those conditions could have on your plantings this coming season.

But very importantly, the wet conditions also affected our operations at Nourse Farms.

I believe we grew one of our most outstanding crops but could not dig all the plants we needed in our fall digging period. We experienced very wet and unusually cold temperatures from early November through mid-December.

As a result, we have a lot of packing to do this spring. We will be increasing our packing crew to accomplish this. Depending on how spring breaks, it is very likely we might not be able to ship the day you request.

IMPORTANT – I suggest you give us as much notice as possible for when you want your plants shipped for us to schedule your shipment. This prior notice will be critical or very important for us to respond to your requirements. We understand it will take a lot of communicating on our part. **Working closely together we will make this a successful spring shipping season.**

We experienced a successful winter trade show and meetings period that were well attended and with a lot of grower interest. There is considerable focus and interest on all the berry crops.

The North American Strawberry Growers meeting with the North American Research group was the highlight of all the meetings. There was two days of presentations about excellent research going on that will be very helpful for strawberry growers moving forward.



IMPORTANT!

SHIP DATES

With increasingly variable and inconsistent spring weather, we highly recommend growers delay shipping or place spring orders with an "OPEN" ship date. Calling by Wednesday the week before you need the plants will allow us time to prepare your shipment and get it on its way to you.

ORDER ONLINE:
noursefarms.com

FOR PHONE ORDERS OR CUSTOMER SERVICE:
(413) 665-2658
Monday–Friday
8am to 5pm (EST)

ORDER BY FAX:
Fill out the enclosed order form and fax to: (413) 665-7888

ORDER BY MAIL:
Fill out the enclosed order form and mail to: Nourse Farms, 41 River Road, S. Deerfield, MA 01373

QUESTIONS? FEEL FREE TO E-MAIL US:
Tim Nourse:
tnourse@noursefarms.com
Anne Kowaleck:
akowaleck@noursefarms.com

Key Small Fruit Pests

Prevention • Detection • Control

Strawberries and brambles can be attacked by a range of pests including insects, pathogens and weeds. An important factor in controlling pests is the ability to maintain healthy plants and where starting out with a good site is critical. Keeping on top of pest levels, particularly insects, through scouting and subsequent control allows you to manage a problem before it becomes serious.

SITE SELECTION

Preparations for small fruit plantings should begin at least one year in advance. A nutritionally healthy planting in a well-drained soil with exposure to air movement is less susceptible to damage from pests and frosts. Small fruit crops need good internal soil drainage to grow and do best on a well-drained sandy loam. Wet soils restrict root growth and respiration, resulting in weak growth and reduced yields. Planting on raised beds is useful to improve soil drainage in the rooting zone, particularly on heavier soils. Air drainage is an important consideration in choosing a field site. Cold air, like water, runs downhill, and collects in low areas or areas where trees or hedges obstruct airflow. These 'frost pockets' increase the risk of both mid-winter cold injury and spring frost damage, putting the plants under stress which can make them more susceptible to pests. Selecting a site with a gentle slope (3-4%) and good air drainage will also reduce this risk. Good air drainage will also promote faster drying of foliage, flowers and fruit which will reduce the duration and frequency of disease infection periods.

SCOUTING

A key component of a successful pest management program is developing a well-orchestrated scouting strategy. A scouting strategy to determine their presence during bloom period could help growers prevent crop loss from their mass migration. We recommend growers begin to plan a scouting routine that will begin the day mulch is removed from the plants. Plan to visit or have your field visited at least 1 time per week during the entire season. During blossom and fruit set seriously consider scouting twice per week. Have a check list in hand that identifies possible pests so that no pest goes unchecked. For identification, there are a variety of excellent tools including free phone apps such as MYIPM -SED and MYIPM-SEP. If you are not planning to do scouting, then consider putting a spray program into place to control insects. Flower thrips and tarnished plant bug are the two critical pests along with strawberry clipper.

KEY PESTS

• Flower Thrips

For several strawberry seasons in a row, many growers have seen crop damage due to Flower Thrip infestations. Flower Thrip damage is very similar to Tarnished Plant Bug, where fruit are misshapen, damaged or 'Cat Face'. In some instances, the Flower Thrips took the entire crop due to extensive damage. A scouting strategy to determine their presence during bloom period, can help growers prevent crop loss from their mass migration. Several insecticides labeled for use on strawberries are effective on thrips. Again, as thrips can cause extensive damage, if you are not going to scout, consider making preventative insecticide applications for control. Consult your local Cooperative Extension office for state recommendations.

• Cane Blight and Cane Botrytis

Due to last year's wet conditions cane blight and cane botrytis could be more prevalent this spring. Cane blight and cane botrytis are serious diseases in brambles that display as dark brown to purple cankers on the main canes or branches, and can extend several inches along the cane. The risk of cane blight is greatly increased when primocanes are injured or improperly pruned. Although pruning cuts provide a major infection site, insect damage, herbicide damage, and winter injury can also be infection sites. In many cases, cane blight is located at the base of the canes where they were wounded by old canes. Once fruit canes are inoculated, it is necessary to spray fungicides to prevent infections to the primocanes. However, established infections on fruiting canes can't be removed or cured by fungicide sprays as most are protective, not curative. Proper removal of fruiting canes and application of effective chemicals together with cultural practices that minimize injury on canes play an important role in managing the disease.

• Black Root Rot Complex

Black root rot is the general name for several root disorders that produce similar symptoms. The disorders are not clearly understood and are generally referred to as root-rot complex. Our wet conditions this past season could precipitate more black root rot symptoms than usual. The exact cause of the black root rot is thought to be a combination of several soil fungi (such as Rhizoctonia, Pythium, Phytophthora and Fusarium) as well as nematodes, winter injury, fertilizer burn, soil compaction and saturated soils. Incidences of black root rot have increased, particularly in the last 2-3 years and more on heavier, clay-type soils due to the high moisture levels. Roots affected by black

root rot are smaller than normal overall, main roots are spotted with dark patches or in sever cases, all or part is dead. Feeder roots are lacking or spotted with dark patches or zones. All lead to the appearance of black “rat-tail” like roots. Crop rotation and fungicide/Oxidate dip are your first line of defense for this complex as there is little controls available once it is established.

- **Phytophthora Root Rot**

Considered the # 1 enemy of raspberries, the wet conditions of this last season saw an above average incidence of Phytophthora Root Rot, especially on heavier soils and in low-lying areas of fields that are slow to dry. Given that there is very little resistance available in varieties, your best line of defense is good, sound cultural practices -- most importantly, the use of raised beds. These practices start out with a soil rotation plan where you avoid planting back into a prior raspberry site for at least 2- 3 years. Secondly, planting on well drained soils using raised beds is a good management step to increase drainage in the root zone, particularly for organic growers. For conventional growers, the use of soil fungicide drenches in the spring and fall of Ridomil Gold and Phosphate type materials are helpful in the control of Phytophthora Root Rot.

- **Spotted Wing Drosophila (SWD)**

Growers continue to battle with this pest that becomes more problematic as the summer season progresses. **SWD Basics:**

1. Most state extension departments are well-schooled in Spotted Wing Drosophila identification and potential control. We strongly encourage you to seek out resources in your area. For specific pest control recommendations, consult your local cooperative extension office for specific state recommendations.
2. Monitor with traps to know when present.
3. Timing of insecticide sprays begin with first color. Maintain 5-7-day crop protectant application along with a frequent picking schedule.
4. Cultural controls include removal of cull fruit from field and harvesting all ripe fruit every picking.
5. Deliver harvested fruit to the cold storage hourly, maintaining temperatures as close to 32' F as possible.

For more detailed information, below are 2 excellent resources for information:

<http://extension.umass.edu/fruitadvisor/spotted-wing-drosophila>

UMass Extension offers an excellent monthly newsletter that includes several informative articles on small fruit production.

https://www.canr.msu.edu/ipm/invasive_species/spotting-wing-drosophila/

Variety Spotlight



AAC EDEN RED RASPBERRY

Tested as K06-2, this variety was released by Andrews Jamieson at Kentville, Nova Scotia. A cross between ‘Glen Ample x ‘K93-11’, the strong canes are spineless and shown to be moderately winter hardy.

The conical fruit are large, firm, light to medium in color with exceptional flavor. Early results show this to be a great mid-season choice to trial when looking for a variety with high productivity and flavor.

DOUBLE GOLD RASPBERRY

This is a recent release by Dr. Courtney Weber from Cornell University. The deep blush, golden champagne color berries are medium in size and have a conic shape. They are considered to have an excellent, sweet flavor.

The plant grows vigorously, suckers freely, and shows tolerance to diseases. Double Gold can be grown as both a florican (summer) and primocane (fall) producer. This plant is more suited for Pick-your-own, and local commercial sales. Double Gold adds an alternative yellow variety to our program!



OUACHITA BLACKBERRY

This thornless blackberry variety has excellent quality fruit, with firm, sweet, attractive berries. Fruit ripens before Navaho. Plant has very erect canes, and intermediate vigor. Winter Hardiness appears to be less than Navaho, similar to Apache. Plants appear resistant to anthracnose, and double blossom/rosette. Orange rust has not been reported on any plants. We highly recommend it for the Mid-Atlantic, West Coast and Southern states based on excellent grower results.

We have an excellent supply of these varieties available - call us for a price quote!

413.665.2658

**Visit us on the web at www.noursefarms.com
The Best Berry Plants Since 1932**



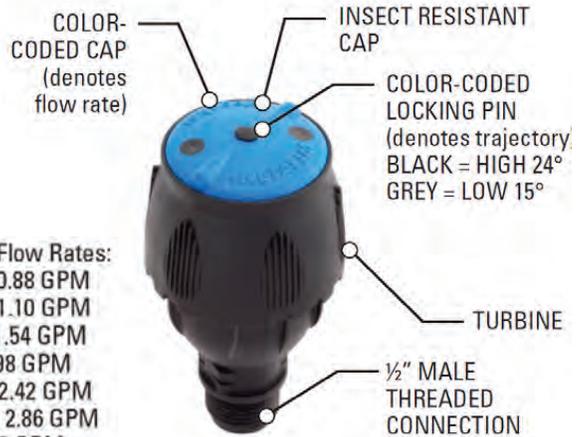
With Netafim Meganet Sprinklers and Flexnet distribution manifold Strawberry growers are able to get uniform frost protection without the headache and limited field access of aluminum pipe.

MEGANET™ **ROTATING SPRINKLER WITH EXCELLENT UNIFORMITY UP TO 40' DIAMETER WETTED AREA**

The Meganet sprinkler is a balanced sprinkler with two equal water jets, this does no wobble. Meganet fight the wind with large droplet size and excellent distribution uniformity. The sprinkler is held up with a fiberglass stake, allowing for easy install and removal. Each sprinkler head has its own basket filter to prevent clogging nozzles. Color coded for flow rate identification



Meganet sprinklers operate between 29 to 45 PSI and are available in 15 or 24 degree trajectories. Lower operating pressures and greater distribution uniformity adds up to pump energy savings for strawberry growers. Built in basket strainers eliminate the need of walking the field to clean nozzles during a frost event, a true temperature saver for both the grower and the plant!



- Seven Nominal Flow Rates:
- Yellow Nozzle - 0.88 GPM
 - Purple Nozzle - 1.10 GPM
 - Green Nozzle - 1.54 GPM
 - Blue Nozzle - 1.98 GPM
 - Brown Nozzle - 2.42 GPM
 - Orange Nozzle - 2.86 GPM
 - Red Nozzle - 3.30 GPM



Brookdale Farm Supplies

38 Broad Street Hollis, NH 03049

Phone: 603-465-2240

www.brookdalefruitfarm.com

NETAFIM™
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FLOWCONTROL™



DEAR GROWER

Have you ever wondered, “Why can’t I get a consistent yield throughout my field?” Growing a healthy crop on wavy terrain is a challenge and we hear this from our customers ALL OF THE TIME! The picture to the right is one of our fields with a 15 foot dip in elevation right in the middle of the field. In these situations, it’s almost impossible to keep from under watering the high spots and over watering the low spots in wavy fields.

Too much water can make your strawberry crops more susceptible to diseases like anthracnose or grey mold. Not enough water can be an even bigger problem, leaving you with a reduced crop yield or small berries. If you use your drip system for fertigation as well, these issues can get a lot worse.

Up until now, we accepted the worries and woes of farming uneven terrain. We worked with poor uniformity, planting high value crops on the wavy terrain and abandoning the worst sections. But not anymore!

Brookdale is excited to announce we now carry Toro FlowControl™ premium drip tape, the latest innovation in the tape market that makes these issues a memory of the past. For the past 4 years Brookdale has been using FlowControl drip tape on all our hilly wavy fields in New Hampshire and we have seen great improvements in uniformity. FlowControl is taking the drip irrigation industry by storm, creating an entirely new class of tape. It is the only tape on the market that is a true flow- moderating drip tape.

The genius behind FlowControl is that growers get the best features of a pressure compensating tape, and non-pressure compensating tape: More uniform irrigation for any terrain, and the flexibility to control the overall system flow rate. We’ve seen firsthand how this innovative new product helps growers increase yield and quality, while conserving water, fertilizers and other inputs to the field. Best of all the cost barrier for adoption of a new technology per roll is approximately \$20 more than traditional Aqua-Traxx drip tape. This allows growers to use new innovative products on crops such as strawberries where the benefit of the advanced product is observed over multiple years.



As always, our mission at Brookdale is to partner with key industry suppliers that offer valuable solutions for the growers in our market. As one of those key partners, Toro continues to lead innovation of new products that address growers’ needs. Toro’s original premium drip tape, Aqua-Traxx, has a reputation of providing unmatched clog resistance and durability. Now with FlowControl, you get all the benefits of the original plus more uniform delivery of water and fertilizer to plant. Make the dark days of lopsided terrain and uneven crop yields a thing of the past with FlowControl drip tape, proudly sold and used by:

Brookdale Farm Supplies

38 Broad Street Hollis, NH 03049

Phone 603-465-2240

www.brookdalefruitfarm.com

STANDARD TAPE

Standard tapes stress plants and reduce yield and efficiency by over- or under-watering as pressure changes throughout the run.

RESULT: Wasted water and fertilizer, stressed plants and reduced yields.

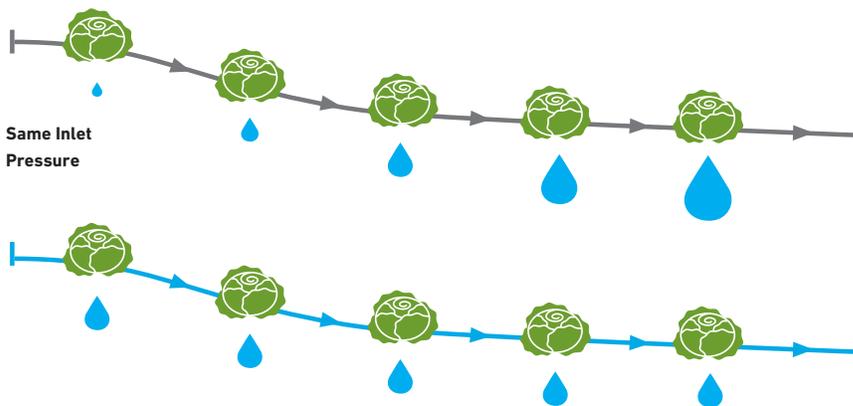
FLOWCONTROL™

Toro FlowControl gives you uniform output regardless of elevation changes. So now you can adjust the amount of water you give your plants on hilly terrain, and they’ll all receive the same amount through our uniform delivery system.

RESULT: More uniform plants and higher yields even in hilly terrain that might otherwise be impractical to farm.



SUPERIOR DRIP TAPE



FIVE POINTS TO PREPARE

GET READY FOR THE SEASON!

WILDLIFE MANAGEMENT

1

They might be “cute as a button” or beautiful and fun to watch but wildlife, specifically deer, birds and rodents can do significant harm to small fruit crops.

WHITE-TAILED DEER

Deer cause damage throughout the year but the most severe damage occurs on strawberry plants in the fall before mulch

is applied and on any small fruit planting in winter months when availability of natural food is limited. Feeding on canes and dormant buds may lead to stunted or distorted growth and lower fruit production. When severe, it can reduce plant vigor and even cause death. During the spring and summer, deer may feed on new growth and eat ripening fruit. There are a variety of options that can be considered for damage control including hunting/shooting, repellents, and fencing. Repellents should be applied at the first sign of damage and are most effective when integrated into a damage control program that includes fencing, hunting and several types of repellents. Milorganite, a slow release organic fertilizer (6-2-0) produced from human sewage has worked as a repellent for some growers. Fencing deer out of the field is the most effective way to reduce damage when deer density is high. A conventional 8-foot woven wire fence, an electric fence or a combination of the two effectively keeps deer by forming a barrier around the field. The addition of a line of blue baling twine, at the top of the 8-foot fence, has increased success. Though not inexpensive, fencing is effective, long lasting and requires little maintenance.

RODENTS

Rodents are a big concern for growers, particularly those with drip irrigation systems. Pests like gophers, moles, squirrels and voles will feed on the plants and fruit. In addition to crop damage, rodents can also attack drip tape – expensive and time consuming to replace.

The first line of defense begins in the early stages of the growing season. Some growers can fumigate fields for overall pest control. This can assist in eliminating moles who feed on earthworms. Given that rodents are drawn to areas around the field, it's advised to create a buffer zone surrounding the field to eliminate weeds and ground cover growth. Consider applying rodenticides in the buffer zone if rodent pressure is

high. During the growing season, techniques like baiting/trapping and system defenses like flooding or destroying mounds/hills, combined with the targeted use of rodenticides can be very effective.

Ramik Green AG is a good rodenticide for control of mice, rats, and voles around strawberry production. It can easily be applied into bait stations around the perimeters of the field or nearby structures to keep pest levels to a minimum. With no baits that can be used directly in a strawberry field it is important to control the pests before they have a chance to enter. For more information on baiting needs please contact your local Helena Agri-Enterprises LLC location.



Mouse-bait trap

BIRDS

Birds eat fruit to help meet their water requirement in addition to their energy requirements. Bird damage may be more intense in dry years as birds turn to fruit to meet their nutrition and hydration needs. Fruit growers can employ one or more bird deterrent strategies including auditory and/or visual scare devices as well as physical barriers like netting. Here at Nourse Farms, we are in an active nesting area that makes netting an important economical alternative for us.

DRIP IRRIGATION START UP TIPS

Drip irrigation use is a key cultural component when raising strawberries in the plasticulture system as well as bramble and blueberry production.

The best success with drip irrigation comes with setting up a plan and working closely with your drip tape supplier. Our supplier does a farm visit reviewing the layout of field and our needs with us. Tips on items to review with your supplier:

- Crops to be planted and what specific fields.
- Will the drip be used with or without plastic mulch?
- What is the water source and volume available – this can determine how much area you can water or how much you can apply at one time.
- What is the water quality and filtration needed?
- Any treatment needed for algae, iron or other problems?
- Is the field flat or is there more than 6 – 8 feet elevation change? This impacts uniformity and may require a pressure compensating or moderating drip tape.

2

- What mil is most appropriate? Our supplier recommends a 15 mil. for strawberries.

Having a plan and working closely with your supplier can save you \$ and headaches down the line!

These recommendations are based in part on conference presentations by Bill Wolfram, District Sales Manager, Toro Ag Irrigation. For a copy of these presentations email Anne Kowaleck at akowaleck@noursefarms.com

COVER CROPS TO CONSIDER

There are many great reasons for growing cover crops.

These include:

- Improving soil structure. Cover crops add organic matter when they are incorporated into the soil.
- Adding nitrogen to soil. Through relationships with symbiotic soil bacteria, many cover crops, particularly legumes, can add nitrogen credits to the soil.
- Suppressing weeds and disease. Cover crops compete with weeds for light, water and nutrients. Hairy vetch as a cover crop has shown to suppress some anthracnose species.
- Erosion control. Cover crops reduce water and wind erosion on all types of soil.

Choice of a cover crop should be based on what the priorities are for the cover crop benefits. If the goal is to increase nitrogen contribution to the soil, legumes are your best option. If weed control and increasing organic matter is what you want, consider the non-legumes.

LEGUMES

Hairy Vetch – becoming increasingly popular due to its ability to fix large amounts of nitrogen as well potential disease suppression. Is seeded in mid-August – mid-September, often with winter rye or oats to ensure ground cover for erosion control.

Alfalfa – long lived perennial that requires deep, well-drained soil and neutral. No suited for short-term rotation but will fix large amounts of nitrogen if maintained for several years. Seed early spring or late summer.

Sunn Hemp - easy to grow and productive. Plant when soils reach above 50°F and at least four to five weeks before frost. Plants will be killed when temperatures dip below 28°F. Optimal soil conditions include a pH between 5 and 7.5 and good drainage. Seed can be treated with cowpea inoculant to increase nitrogen fixation. Sunn hemp possesses many soil-building traits, including high rates of biomass production — over 20 percent greater than crimson clover and hairy vetch in research trials. It is not only resistant to plant root nematodes but actively suppresses them. In as little as 60 to 90 days it can produce 120 pounds of nitrogen per acre and can suppress weeds up to 90 percent.

3

NONLEGUMES

Annual Ryegrass – direct seeded in spring or late summer, this low growing cover crop produces an extensive root system good at capturing leftover nitrogen from previous crops. Good for erosion control as it forms a dense sod. This can also be a downside as it can be difficult to kill overwintering ryegrass with only cultivation or disking.

Winter Rye – often seeded from late August through October, often following field or vegetable crops. Very hardy and adapted to a wide range of conditions, can produce significant root and top mass for increasing organic matter. A rye cover crop suppresses winter annual weeds effectively. Due to the mass it creates, allow at least 2 weeks from killing to crop planting to ensure adequate residue breakdown.

Sorghum-Sudan grass – Sorghum-Sudan grass is one of the most common cover crops. A fast-growing cover crop, it has an extensive root system that thrives in the heat of summer and excels at suppressing weeds. For growth, the soil temperature must reach 65 to 70 F for two months before frost. The crop is extremely drought-tolerant once established, but it does need rain or irrigation during early growth. Seed Sorghum-Sudan grass at a rate of 40 to 50 pounds per acre, after the threat of frost has passed in spring. However, for maximum growth potential, don't wait too long to plant, depending on your climate. In the Northeast, for example, it's best to plant before July 15th. Soil temperatures of at least 60 F are required for this cover crop to germinate. Repeated mowing can increase the root system, leading to greater penetration in compacted soil. In fact, this cover crop should be mowed several times in the season to prevent it from setting seed. Maintain your Sorghum-Sudan crop by mowing several times during the season before the crop seeds. Just prior to a killing frost, mow the grass to finely chop it, and then immediately till into the ground while it is still green. Due to the presence of weed-suppressing compounds in the freshly mowed crop, wait several weeks before planting new crops. Sorghum-Sudan grass is a great cover crop for revitalizing worn-out, "farmed-out" soils because it adds a lot of organic matter and bulk to the soil.

4

SPRING FERTILIZATION FOR STRAWBERRIES

Spring fertilization should be considered in a variety of situations. If young plantings went into the fall in a weakened condition, or with heavy leaching fall rains, a spring application of 20 pounds /acre of actual nitrogen would be appropriate.

When you suspect signs of winter injury, spring fertilization is a

Continued on page 11



Hillside Cultivators are very effective for weed control between crop rows and renovating strawberries

Cultivators for Berries *and* Vegetables



The Hillside Cultivator may also be configured for 2 Rows or as a model without hydraulic adjustment.



Hillside Cultivator Telescoping Frame for cultivating between blueberries or raspberries



Uproot weeds very close to the edges of plastic mulch, ridge soil along raised beds

- Renovate Strawberries efficiently and economically with optional front-mounted disk gangs
- Effectively uproot weeds very close to crop rows or plastic mulch or ridge soil along raised beds with rolling cultivators
- Hillside Cultivator Model CS is constructed with a strong frame, multiple adjustments, and hydraulic control of the distance between cultivator gangs
- Hillside Cultivator Model NH is the economical manually-adjusted version

Both models have coil tines mounted between front and rear gangs for fracturing hard soil



The PTO powered Eco Weeders are best for weeding between plants dramatically reducing hand work

Also check out the Tuff-bilt cultivating tractor



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Planting on Plastic – The Basics

A successful late season strawberry planting on plastic, particularly mid-June - July plantings, requires close attention to the details:

1. We suggest you schedule the ship date for your order as a “will call” so there is no chance of plants arriving when you are not ready. When planting conditions are ready – call and we will ship.
2. Lay plastic and drip lines 30 days before planting to get solarization of the beds reducing weed pressure.
3. Make your beds when the soil is good and moist. If made under dry conditions, it takes a long time to get beds into proper moisture. Turn on drip prior to planting to assure adequate moisture for plant establishment. This is especially important if you do not have over head irrigation for watering directly after planting.
4. Inspect plants upon arrival. Be sure to remove bubble wrap immediately to check for plant temperature. Opening boxes will allow plants to cool if they got warm in transit. If dormant plants are cool or cold, reseal the cartons and store them as close to 28°F as possible. Do not add water or soak your new plants until you are ready to put them in the ground.
5. Dormant plants should be hand-planted. Hand planting promotes proper hole size for good root-soil contact and fewer weeds. Plant mortality is kept to minimum leading to better plants stands. Growers have had success using a plasticulture tool from Nourse Farms that was custom designed to push dormant, bare-root strawberry plants through plastic.
6. To establish good root-soil contact, overhead irrigation should be used the first week of establishment, to set plants immediately after planting. Drip irrigation is used throughout the balance of the season to maintain optimal water and nutrient levels.
7. Please contact us with any questions or concerns you have, particularly if the plants are not performing to your standard.

We suggest you also review our Plasticulture Production Guide on our website for a quick review of the process. Following these basics steps will limit plant mortality and yield a successful late season strawberry planting!

Small Fruit Winter Injury Update

Again this year, growers in many locations throughout the country, have seen near record breaking cold temperatures.

For information on strawberry winter injury, including assessment and management review, see our Spring 2018 Newsletter article available on online or email akowaleck@noursefarms.com for a copy of the article. A recap of key items from that article:

1. To assess damage, sample production by cutting the crown from top to bottom.
2. Injury levels can range from brown flecking on crown (mild) to major extensive damage if the crown is dark brown and corky.
3. Damage can be managed to ensure you do get a good strawberry crop, including appropriate moisture and nutrient levels.

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 including cutting bud lengthwise (tip to base), as buds have begun to swell to check for blackened centers or damaged tissue.
- 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.



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ORDERING Prices valid to May 31, 2019. Use enclosed order form, call or order online. Order early to ensure your first choices and on-time shipping. We make every effort to ship on time. We do not recommend fall planting.

PATENTED/LICENSED VARIETIES identified by a *, cannot be propagated without permission. Royalty or usage fees are included in their prices. Patented varieties are protected by U.S. patent laws and licensed varieties are produced under contract with plant breeders.

PLANT PICKUP Orders can be picked up in Whately, MA, mid April through late May, Mon. through Fri., 8am to 5pm; Sat., 8am to 1pm. Call for other available times.

SHIPPING AND HANDLING charges are additional. Shipping by Ground Service unless otherwise specified. Three business days' notice required for orders with "open" ship dates. We'll make every effort to accommodate shipping on short notice.

ORDERS TO HAWAII AND ALASKA

Ships 2nd-day air only. Sorry, no exceptions.

ORDERS TO MIDWEST OR WEST COAST Shipped on a Monday or Tuesday. On warm temperature days, shipping is by 3-day service to ensure good condition. Added shipping charges are billed. California, Hawaii, Oregon and Washington must have phytosanitary certificates (\$15.00).

CANADIAN & FOREIGN ORDERS Import permits must be supplied 30 days in advance of shipment. All shipping by special arrangement. Nourse must receive payment in full with U.S. funds prior to shipment. Special fees may apply. Add \$25.00 - \$200.00 for export certification by U.S. Dept. of Agriculture. Payment by credit card or bank transfer minimizes your bank fees.

PAYMENT

- Orders \$250 or less must be paid in full within 10 days of placing the order or will be subject to cancellation.
- Orders exceeding \$250 require a deposit of 1/3 within 10 days of placing the order, or are subject to cancellation. Balance must be paid in full prior to shipment. In the case of a pickup, a customer may pay the balance at time of pickup.
- Orders shipping after June 1 must be paid in full by June 1 to reserve the plants, or the order will be subject to cancellation and loss of deposit. Orders shipping after June 1 are not eligible for refund if cancelled.
- Net 30 Terms may be extended for orders greater than \$500 for returning customers only; determined on a per customer basis, based upon a Customer Credit Application, and prior payment history with Nourse Farms.
- Service charges of 1.5% per month are added to past due balances.
- We do not refund amounts less than \$3.00.
- We accept Visa, Master Card, Discover, checks, money orders and cash.

FIVE POINTS TO PONDER... continued from page 7

must. Depending on the degree of damage a range of 15 – 30 pounds of actual nitrogen would be effective by "spoon feeding" small amounts over several applications either by light ground application or foliar with your fungicide applications.

Many growers have acknowledged the benefits of the following recommendations. Add these micronutrients in moderation for the benefit of all varieties.

Special needs of the Cabot variety: Many growers like Cabot for its excellent size and good flavor, but under certain conditions the early fruit are rough and misshapen. Looking at the surface of the fruit, the seeds appear to be uneven or have varying levels of development, caused at pollination. Boron is an important element in the pollination process. A spring application using Solubar (soluble Boron) applied at 5 pounds per acre, 1 lb. actual, can avoid this initial fruit roughness. We suggest making the application just before blossoms open.

Special needs of the Darselect variety: Apply 5 pounds of Epsom salt per acre in 2-3 sprays during the bloom period and green fruit development stage. The small amounts of magnesium in Epsom salt should improve the appearance of the fruit and foliage.

ARE BLACKBERRIES FOR YOU?

5

As growers look to expand their small fruit offerings, we are often asked about the feasibility of growing blackberries in northern locations. Historically options were somewhat limited as floricanes/summer bearing thornless varieties had limited winter hardiness. Thorny varieties that had better hardiness were difficult

for growers to work with and had challenges with customer acceptance in a pick-your-own situation. Two new advances in the blackberry industry have made the possibility of growing blackberries in northern locations a real possibility.

At Nourse Farms, we use a rotating cross arm trellis in our floricanes blackberry production. This type of trellis allows us to bring canes to a position close to the ground where they can be covered with a thick row cover for winter protection. The second advance has been the introduction of the Prime Ark series of primocane bearing blackberries – Prime-Ark 45, Prime-Ark Freedom and Prime-Ark Traveler. Like primocane bearing raspberries, they can produce two crops. For fall production only, which we recommend in northern locations, prune or mow all canes to the ground in early spring. The Prime-Ark series has unique tipping requirements – please contact us for details.

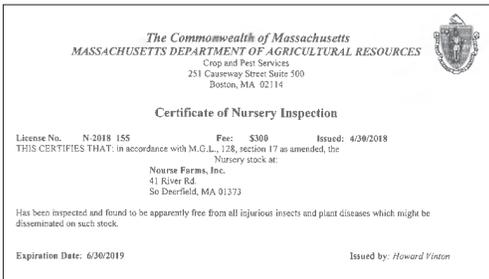
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INFORMATION ENCLOSED!**



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Keep up to date on the happenings at our farm and get informed! We offer tips and reminders throughout the year and we will let you know when we have a new article or video available. You could participate in discussions with other growers. Feel free to ask questions or make suggestions. We look forward to sharing with you!

SPRING 2019

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ATTENTION! SPRING 2019 SOLD-OUT LIST

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Albion, Annapolis, Brunswick, Dickens, Malwina, San Andreas, Yambu

WHILE SUPPLIES LAST! STRAWBERRIES

AC Valley Sunset, Allstar, Cabot, Cavendish, Mara des Bois

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Bluegold, Northland, Reka

SOLD-OUT RIBES

Invicta Gooseberry, Rovada Red Currant, Jonkheer Van Tetts Red Currant

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