



Agent's Overview

Happy Springtime ! Grass is greening, buds are swelling and temperatures rising. Our growing season is upon us. One of my old professors would tell us students, growers and industry scientists "This is the only month that tells you what to do – **March fourth & start working.**"

An ever-more strenuous meeting season from December through February is ending while the spring season is bearing down. I'm looking to transplant some new **RSL lettuces and RU Scarlet tomatoes** at our RU research farm in **Cream Ridge**. We're also checking our RU strawberries planted at the farm last fall to see how they did over our relatively mild winter that had some big snows and hard cold snaps. Any growers that want to test a few of these new crops please let me know and we'll deliver some.

This Springtime edition will give you some info on seasonal patterns and names. Some of you may still time your planting based on these cycles. Round our way the peas were supposed to go in on **St.Patrick's Day** – but soil temperatures were pretty low, mid forties; then we got a few inches snow before spring sprung to air temps of 70°. Soil temperatures trump moon cycles. ☺

Besides some feel good articles about **Happy Day Farm** and **Master Gardener Graduation**, there is a very technical piece on **weed control in wheat** (which has some applicable to other small grains – but please read the labels carefully). Then there is the feel bad article about **neo-nicotinoid insecticides**. In January, I assembled and moderated an industry session on emerging issues in Ag at the **Northeast Plant , Pest and Soils Conference** in Philadelphia. Out of the 2 ½ hours of this exciting session on a diversity of important topics, the recent de-registration

and **withdrawal of a new neo-nicotinoid** took over an hour of audience discussion. Wow – I knew it was important but clearly industry, university scientists, extension-workers and growers were really upset about this **EPA decision**. A minority did voice an opposing view, especially those concerned about pollinators. As an economic entomologist by training, I always considered **imidacloprid (Provado / Admire)** a great breakthrough that replaced or augmented the 3 primary materials for insect management – **organophosphates, carbonates and pyrethroids**; think examples as Guthion, Sevin and Warrior, respectively. In hindsight maybe this was too much of a good thing.



While neo-nics have excellent crop safety, low mammalian toxicity, systemic activity and long residual, we may not have had sufficient data on bees. We know there have been widespread bee kills due to a variety of probable causes, but some seem to be directly associated with this class of material.

Europe has already banned neo-nic use

for over two years, and their bee populations may be rebounding. To error on the side of caution, don't use neonics around the bloom time, avoid off-target application and remove weeds that bloom after your crop has bloomed. Weedy flowers will continue to lure pollinators into a non-blooming crop when more insecticide sprays are permitted according to label.

So while we can admire the spring daisies and dandelions in the parks and playground, put some effort into their elimination in your farm fields. For more details, see p. 5.

March Forth,

Bill Sciarappa

Master Gardener Graduation—Class of 2015



This past November, the 17th class of Rutgers Master Gardeners graduated with a festive ceremony at Jumping Brook Country Club. The evening started out with a beautiful rendition of the National Anthem sung by **4H Agent Ellen Williams**, and was followed by encouraging words for the graduates and guests by **Freeholder Lillian Burry**, who congratulated the **26 graduates** for growing, harvesting, and donating over **3000 pounds of vegetables** from their **'Plant a Row for the Hungry'** garden, located behind the Agriculture Building. She also thanked the Master Gardeners for the 22,000+ hours that they volunteered in 2015. **Monmouth County Park System superintendent Tom Fobes** then spoke about the impact that the Master Gardeners have had on the Park System, and **Agricultural Agent William Sciarappa** thanked them for their assistance in his research on the new tomato, lettuce, and strawberry varieties this year. Special guests of the evening included **retired Ag Agent Rich Obal**, **retired Brookdale biology professor Ron Kudile**, and **Pat Butch**

and **Robin Bruins** from the Monmouth County Board of Agriculture.

After introducing the speakers and guests, **Diane Larson, MG coordinator and horticulturist**, spoke about the graduates and the Master Gardener program. She noted that the contents of the beautiful centerpieces which were created by the Master Gardeners and consisted of apples and various types of edible winter squash, were **donated by Delicious Orchards and From the Garden**. These centerpieces were then donated to **17 different food pantry** locations in Monmouth County. After recognizing the graduates, she gave out awards to **Master Gardeners who have volunteered 100, 250, 500, 1000,**



1500, 2000, 3000, and 4000 hours since they started the program. Additionally, she also gave milestone awards to those that have volunteered for 10 years, and two Award of Excellence awards.

Diane Larson—County Extension Horticulturist



Why Do the Seasons Change?

The four seasons are determined by shifting sunlight (not heat!)—which is determined by how our planet orbits the Sun and the tilt of its axis. On the **vernal equinox**, day and night are each approximately 12 hours long with the actual time of **equal day and night**, in the Northern Hemisphere, occurring March 20th 2016 .The Sun crosses the celestial equator going northward; it rises exactly due east and sets exactly due west.

For the **summer solstice**, on June 20,2016 we enjoy the most daylight of the calendar year. The Sun reaches its most northern point in the sky at local noon. After this date, the days start getting “shorter,” i.e., the length of daylight starts to decrease.

On the **autumnal equinox**, day and

night are equal again about 12 hours long on September 22nd (with the actual time of equal day and night, in the Northern Hemisphere, occurring a few days after the autumnal equinox). The Sun crosses the celestial equator going southward; it rises exactly due east and sets exactly due west!

The **winter solstice** on December 21st,2016 the “**shortest day**” of the year, meaning the least amount of sunlight; the Sun reaches its most southern point in the sky at local noon. After this date, the days start getting “longer” & the cycle repeats.

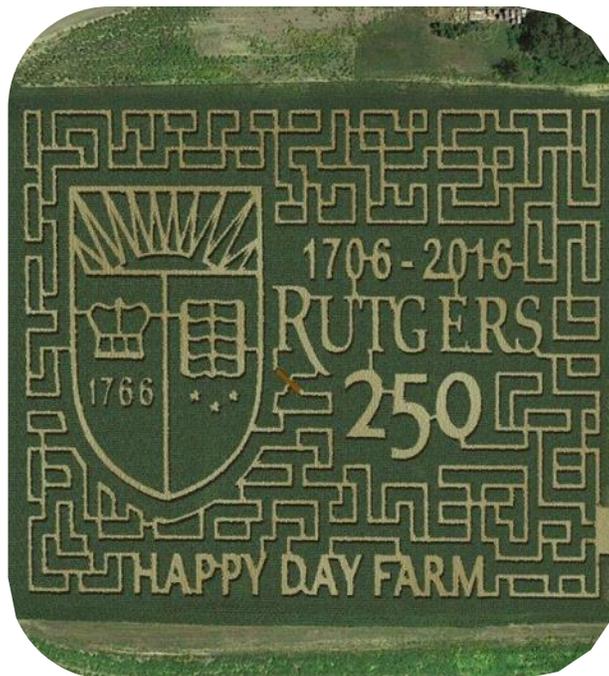


<http://sebsnjaes250.rutgers.edu/>

Happy Day Farm has been exciting visitors to their huge corn mazes over the last few years. **Farmer-Owner, Tim Stockel** has worked with professional designers to develop his creative ideas that attract and educate farm visitors.

This year Tim has another brilliant idea. Help celebrate **Rutgers 250th Anniversary**. We promptly connected him with both the communication and legal departments at Rutgers. Quick and enthusiastic approvals got this win-win concept off the ground. Tim is looking forward to planting once the ground dries out in a month or so. This complex maze promises to be another agricultural **masterpiece** whether taking the challenge on the ground or viewing it from above – passengers from Newark Air-

Happy Day Farm



port often get a surprisingly good view at 5000 feet in the air !

There's a lot of other activities taking place on the Manalapan farmsite, so maybe check out this **amazing maze** during construction or upon completion. I know I will.

This type of Agri-business promotion is great for any farm looking to attract customers, great for RU Ag and great for stimulating such local programs as **Jersey Fresh and Grown in Monmouth**. This is truly super-synergy from the grass roots of the **Garden State**—We all gotta be happy about that!



<https://www.youtube.com/watch?v=97UK-STUJkg>

Dwight Lingenfelter
dx118@psu.edu
Phone: 814-865-224



William S. Curran
wcurran@psu.edu
Phone: 814-863-1014

Weed Control in Wheat and Herbicide Carrier Selection

Populations of **winter annual weeds** will become more prevalent in **early April** and can compete with wheat and **barley** and slow the rate of crop development potentially **reducing yield**. If winter annual weeds like common **chickweed, henbit, purple deadnettle, horseweed**, and others emerge with the small grain and are left unchecked, the potential impact on yield could be great. **Harmony Extra** is still probably the most broad spectrum herbicide for broadleaf control. Harmony SG contains only one of the active ingredients (thifensulfuron) in Harmony Extra and thus does not have the same weed control spectrum. **Clarity, Banvel, 2,4-D, or MCPA** can improve the control of some winter annuals and perennials and Stinger is the most effective small grain herbicide for thistles.

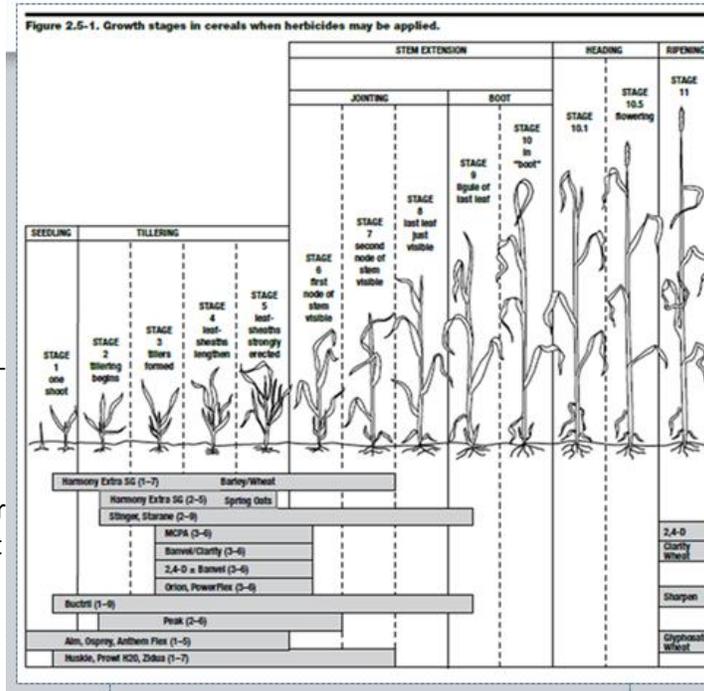
Harmony SG or Harmony Extra should be included where control of chickweed is desired, since these are the only herbicides that control this weed but if it is ALS-resistant than you will need to include Glory or Starane. Consider using **2,4-D** and Clarity or Huskie if horseweed/marestail is a problem in small grains.

Prowl H2O is also labeled for use up to growth stage 7 but it must be applied before weeds germinate or tank mixed with effective post herbicides. **Read labels!**

Herbicides applied in early spring can be slow under the typically cool conditions in March and early April. Remember that cool (less than 50 F) **cloudy days can reduce herbicide activity**. Applications this early are **not likely to effectively control dandelions or Canada thistle**. These weeds would be more effectively controlled with a **later spring application**. The wheat herbicides available for control of grasses, Axial, Maverick, Osprey, PowerFlex, and Prowl H2O are most effective when applied in the fall. Some of these products can work in the spring, but to be effective, the weeds must be small. Or in the case of Prowl, it must be applied before weeds germinate.

Herbicide selection for broadleaf weeds

Once wheat has passed **Feeke's Stage 6** (i.e., when the first node of stem is visible), the **risk of herbicide injury from 2,4-D, MCPA, Banvel/Clarity, or Curtail increases** and application of these herbicides is not recommended. In this situation, the **remaining herbicide options** for broadleaf weed control are **Harmony Extra (similar products: Edition, Treaty Extra, Nimble, others), Harmony SG (similar products: Treaty, Harass, Volta), Buctril, Stinger and Starane**. Harmony Extra and Harmony SG (and the similar products listed above) can be applied to wheat until the flag leaf is visible (before Feeke's Stage 8). Buctril, Huskie, Stinger and Starane can be applied to wheat up to boot stage (before Feeke's Stage 9). **Check NJ recs.**



Each spring there are questions about the **risks** associated with **2,4-D** or **MCPA application to wheat past Feeke's Stage 6**. Wheat tolerance of 2,4-D is highest between Feeke's stages 3 and 6 and is lowest in Feeke's Stages 9 and 10. Between stages 6 and 9, sensitivity to 2,4-D gradually increases as wheat growth stage advances. Thus, the risk of injury increases as wheat growth stage advances between stages 6 and 9.

Severe injury is highly probable when 2,4-D is applied at Feeke's stages 9 and 10. **Watch drift to non-targets.**

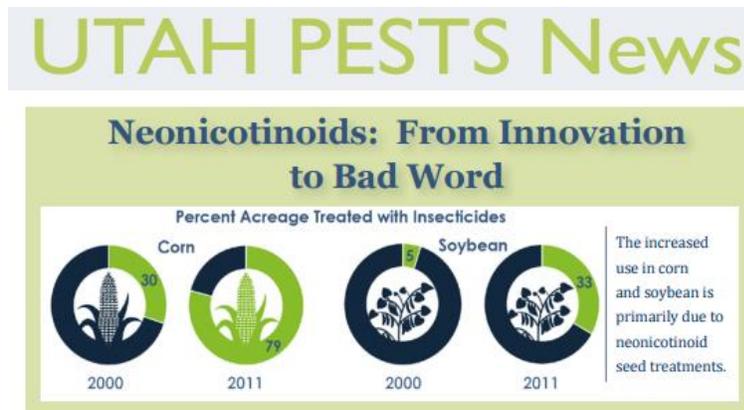
It is recommended that application of 2,4-D to wheat be made after wheat has reached Feeke's stage 3 but prior to Feeke's stage 6. If growers choose to apply 2,4-D at later stages, they need to understand the associated risk. This **risk can be minimized by applying the amine form of 2,4-D**. A better alternative past Feeke's stage 6 is to use another broadleaf herbicide with a wider application window on your weeds. **Take care in selection of a herbicide carrier.**

Recently, the **neonicotinoid class** of insecticides, or “**neonics**”, has come under scrutiny because of concerns with their effects on bees and from other environmental issues. The first neonicotinoid (**imidacloprid**) was released in 1994, at a time when a number of insect pests had developed resistance to several of the major insecticide classes including pyrethroids, organophosphates, and carbamates.

Several characteristics of the neonicotinoids were seen to be favorable, including **low mammalian toxicity, high selectivity for arthropods, persistence, and systemic activity**. The water solubility allows for movement into plant tissues. While foliar applications can be made, neonics are mainly applied as a seed coating or soil application. These two methods reduced insecticide exposure to the applicator and to beneficial insects. Unfortunately, applicators also saw an opportunity to use neonicotinoids preventively, regardless of the presence of the pest, fitting with a “**set it and forget it**” mentality. **Wrong!** This led to increased adoption of neonicotinoids in agricultural and urban settings, making them the most-used insecticides worldwide.

Several newsworthy events have put neonicotinoids in a bad light. **A massive bee kill** associated with **neonic-coated corn seed** occurred in Germany. Recently, the largest recorded **bumble bee loss occurred in Oregon**, from an application for aphids on blooming linden trees. **Applicator error/misuse** was to blame in both of these cases, and it is well known that when bees are foraging, they are generally sensitive to any insecticide application. **The connection between neonics and bee death continues to be implicated as a possible factor for bee decline.**

Interestingly, the effects of neonicotinoids on honey bees have **not matched what would be expected for colony collapse disorder symptoms**. This is not to say that neonicotinoids do not harm bees, but it must be taken in context. In several lab experiments, bees that were fed neonicotinoids were negatively affected, but the doses being used were much higher than would be encountered by a bee in a field situation. In field studies, the resulting effects



of neonics have been quite variable, with many showing little effect on our non-native honeybees. However, recent **field studies have shown some harmful effects of neonicotinoids on native bees.**

The **lack of consistency** in these **research trials** perpetuates the debate. It is generally accepted by entomologists,

however, that bee declines are a result of **multiple factors including disease, parasites, nutrition, environmental stresses, and pesticides** as a whole (insecticides and fungicides). Erring on the side of extreme caution in some places has restricted the use of neonicotinoids altogether.

Neonicotinoids have been effective insecticides, and considering that few safe alternatives exist and that new options will take time to develop, they still have a place in insect management. In 2013, the European Union banned the use of neonicotinoids on crops that attract pollinators. The impacts were modest, but some growers planting rapeseed crops not treated by neonics had higher than normal losses from pests. **A recent EPA document, however, showed that neonic-coated soybean seeds did not provide an economic benefit for the crop suggested that a re-evaluation in other crops may be needed. Preventive application of neonics is not following an integrated pest management strategy, and unsustainable. Resistance to neonicotinoids has been documented** in various species of planthoppers, cotton aphids, whitefly, and Colorado potato beetle. Incorporation of IPM strategies and chemical rotations with other systemics such as diamides, may help relieve some concerns. The neonicotinoid story is quite complex and unfortunately, there is negative spillover for other insecticide classes. Recently, **U.S. Federal court rejected sulfoxaflor**, which also targets nicotinic receptor sites and has high acute toxicity toward bees (as many insecticides do). It is important to be mindful of this complexity, not to simplify the effects, and use these innovations wisely by **getting back to basics in IPM.**

***Ricardo Ramirez, PhD,
Extension Entomologist***

NJAES-Tomato Breeding

Rutgers personnel continue to create a stir in the statewide news media with added disclosures regarding its new tomato varieties. Vegetable breeding specialist **Tom Orton** and Morris County ag agent **Pete Nitzsche** have helped develop a new variety called the '**Rutgers 250**' tomato, named for the university's **250th anniversary**. A Philadelphia Inquirer story about the new tomato started with: "Nothing says New Jersey like a plump homegrown tomato." Tom Orton said: "I truly believe this is a **better tomato**...It's an old time tomato



with a modern quality." Said Nitzsche: "We are hoping it mimics the **same flavor** people remember from the **original Rutgers Tomato**, but from a new variety with a better plant and fruit quality." According to the Dean's report of Feb. '16 to the State Board of Ag: "**commercial** growers interested in bulk seed can obtain this seed, along with Ramapo tomato seed, from **Rohrer's Seed**."

<http://njfarmfresh.rutgers.edu/CommercialGrowerInformation.htm>

Bulk 'Rutgers 250' and 'Ramapo' Tomato Seed and POP Materials for Commercial Growers (in three easy steps!)

Commercial Sales of 'Rutgers 250' and 'Ramapo' Tomato Seed for 2016 To buy bulk seed for commercial sales of Rutgers 250 and/or Ramapo tomato, [Rohrer's Seed](#) in Smoketown, PA is handling bulk seed sales. The contact person is Jim Gamber at (717) 299-2571 ext. 330 or jgamber@rohreerseeds.com. Note: Due to limited first-year production, the Rutgers 250 seed is available in limited quantities. **Let people know you are selling Rutgers 250 and/or Ramapo plants!**

Rutgers 250 and Ramapo Retail Plant/Tomato Sales Listing We are frequently asked where people can buy Rutgers 250 or Ramapo transplants and/or tomatoes. In the past we have provided a [web listing of retailers selling Ramapo plants and tomatoes](#). We do not have the resources to contact growers to update this list. If you would like to be included on this year's listing, you must e-mail us the information by *mid-April, 2016*. Please send us your company retail information: name, address, phone number, e-mail, web address and county (or state if not NJ) you are located in to: njfarmfresh@njaes.rutgers.edu and put "Commercial Tomato Sales" in the e-mail subject line. Indicate whether Rutgers 250 and/or Ramapo tomato transplants and/or tomatoes will be for sale and approximate availability dates. We will advise customers to call you and check availability.

Rutgers 250, Ramapo and Moreton Tomato Point of Purchase Materials Thank you for participating in bringing back the old time favorite Jersey tomatoes. In order to support marketing these varieties to the interested public, we have developed point of purchase sales materials retailers to use for their transplant sales. Available are 1 1/4 X 5 1/2" plant tags for transplants. We also have POP materials for another classic Jersey tomato, Moreton tomato. Bulk Moreton seed is available from Harris Seeds <http://www.harriseseeds.com>. To purchase the plant labels and/or bench cards, please use the [Ramapo and Moreton POP Order Form](#).

SOIL BACTERIAL MIXTURE PROTECTS PLANTS

Many **soil micro-organisms**, including certain bacterial species, form symbiotic relationships with plant roots, improving the **plant's supply of water and nutrients**. Recently, scientists at the **Max Planck Institute** for Chemical Ecology have found that soil bacteria play a greater role. In a research field site in Utah, where *Nicotiana attenuata* had been planted into the same soil for over 15 years, 50% plants were dying from a sudden wilt disease in the latter years. In that same field, the wild individuals of this west-

ern U.S. native tobacco plant were unaffected. Researchers decided to isolate the bacteria on the roots of the healthy plants. They then inoculated test plants with the bacteria and found that those given a mix of three or more species were significantly healthier as compared to the fungicide treatment or inoculation with just one or two bacterial strains. This study emphasize the importance of **crop rotation** to prevent the buildup of soil borne diseases.

RUTGERS DAY

<http://agfieldday.rutgers.edu/>

Saturday, April 30, 2016 10 a.m.–4 p.m.

Activities in Camden, New Brunswick, and Newark.

Ag Field Day at Rutgers Day

CALENDAR

March 2016

23—Food Safety for Retail & Wholesale Growers. Snyder Farm. For info 856-451-2811 x1.

April 2016

2 - NJ Junior Breeder & Young Farmer Symposium - Rutgers— Round House. College Farm Rd. 609-984-4389 or lynn.mathews@ag.state.nj.us

6 - Mosquito Workshop NJPMA—RCE Monmouth County. More info 800-524-9942 or info@njpma.com

30—Ag Field Day—10 am—4 pm.

<http://agfieldday.rutgers.edu/>

May 2016

12 - Empowering Women Farmers—see flyer or <http://www.cpe.rutgers.edu/EMWOFA>

July 2016

27-31 - Monmouth County Fair - Fairgrounds, Freehold

MONMOUTH COUNTY BOA

<https://co.monmouth.nj.us/page.aspx?ID=3065>
4/19, 5/17

BASIC PESTICIDE TRAINING

CORE 9 am-1pm - 4/19, 5/17, 6/14

3A - 9am-3pm - 4/12, 6/7

3B - 9am-3pm - 5/10

Held at Rutgers Cooperative Extension - Ag Bldg.
4000 Kozloski Rd. Freehold, NJ 732-431-7260

Middletown Seeking Farmers

Middletown Township is planning to open a weekly Farmers Market this year. It would be held each Saturday at the Middletown train station commuter lot across from the Middletown Arts Center, 36 Church Street. If interested, please contact Director Amy Sarrinikolaou asarrinik@middletownnj.org (732) 615-2289.

Farm Assistant—Cousins' Garden—Rumson Farm

Raise 50+ varieties of fruits & vegetables—nonprofit. Contact Good Food Jobs www.goodfoodjobs.com

Empowering Women Farmers

With Agricultural Business Management Training



Farm Business Training for Women

This one-day workshop will include:

- ✓ One-on-one financial consulting (optional)
- ✓ Presentations from ag industry leaders
- ✓ International speakers for a global perspective
- ✓ Social media marketing training
- ✓ Time to begin a written business plan

May 12, 2016

Cooperative Extension of Somerset County
Bridgewater, NJ

This workshop is a risk management educational program for women farmers. It will give you the tools you need to succeed in business, and to become a better risk taker and risk manager by focusing on five areas of farm risk: production, legal, marketing & pricing, human & personal, and financial.

Door Prizes 9:00am—4:00pm
Light breakfast and lunch included

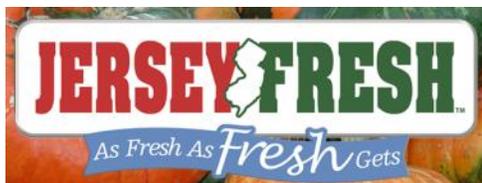
Register today at <http://www.cpe.rutgers.edu/EMWOFA>

RUTGERS
New Jersey Agricultural
Experiment Station

Questions? E-mail
Laura Kenny at
lkgad@rutgers.edu.

EMWOFA
Empowering Women Farmers With
Operational Business Management Training

Sponsoring Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.



Jersey Fresh Availability & Forecast
Report <http://www.jerseyfresh.nj.gov/>

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of Chosen Freeholders**

Changing Times is produced and edited by Bill Sciarappa and Vivian Quinn
sciarappa@njaes.rutgers.edu

Past Issues on the web <http://www.visitmonmouth.com/page.aspx?Id=3078>

RUTGERS COOPERATIVE EXTENSION MONMOUTH COUNTY
New Jersey Agricultural Experiment Station

Rutgers Cooperative Extension— Agriculture, Family and Community Health Sciences, 4-H Youth Development, Resource Management, and Marine Studies— welcomes this opportunity to send you the enclosed materials for your information and use. Educational programs and information are provided to all people without regard to sex, race, color, national origin,

Bill Sciarappa, County Agricultural Agent
Extension Department Head

New Jersey Agricultural
Experiment Station

RUTGERS

Cooperative Extension of Monmouth County
4000 Kozloski Road
PO Box 5033
Freehold, NJ 07728-5033

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