

Rhode Island

Risk Management and Crop Insurance Newsletter

Vol. 5, No. 4, May 2016

Hay Making Techniques

May 10, 2016 a twilight meeting was held at Signal Rock Farm in Charlton, MA. Owners Kevin and Marianne McCarthy put on a series of presentations surrounding successful hay making techniques. Casella Organics discussed the value of adding soil amendments to fields with wood ash, paper pulp, bio solids and additional ways to enhance pH. Big Boy Toys, a local farm equipment dealer, discussed large equipment for hay harvest. Kevin discussed disability insurance, life insurance, and crop insurance focusing on the new Whole Farm Revenue Protection (WFRP) insurance policy.

Kevin McCarthy is also the new crop insurance sales agent for Rain and Hail insurance. The good news for RI growers is Kevin and Marianne were RI residents and operated their Signal Rock Farm in North Kingstown, RI, several years ago so they are familiar with many



Kevin and Marianne McCarthy, Signal Rock Farm



Ewes and young lambs, Signal Rock Farm, Charlton, MA

producers in RI and our unique crop profiles.

[A complete list of crop insurance agents is available at all USDA Service Centers or on the RMA website at: www.rma.usda.gov/tools/agents/]

To complete a perfect evening, the McCarthys provided a fabulous picnic dinner serving a fresh leg-of-lamb roast and roasted beef, all locally raised on their farm, together with homemade salads for the 50 Rhode Island and Massachusetts producers in attendance.

Marianne sells her lamb and wool products at several RI farmers markets. 🌿

www.signalrockfarmlamb.com

For additional information about upcoming events, please contact:

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2016

Rhode Island Farm Energy Program Farm Energy Workshops & Tour



Learn about the new *RI Agricultural Energy Program Grant!*

Are you a Rhode Island Farmer who has been curious about the potential of renewable energy or energy efficiency practices for your farm? The Rhode Island Farm Energy Program will be hosting three **FARM ENERGY WORKSHOPS** in June.

Topics to be covered in these workshops:

- **NEW GRANT Opportunity for 2016**
 - **RI Ag-Energy Program Grant**
- USDA Rural Development – Rural Energy for America Program (REAP)
- Commerce RI – Renewable Energy Fund (REF)
- USDA-NRCS – Agricultural Energy Management Plan (AgEMP) and Environmental Quality Incentive Program (EQIP)
- RI Office of Energy Resources – Farm Energy Efficiency Program

SAVE the DATE!

FARM ENERGY TOUR
Knight Farm & Restaurant
(Ground Mount Solar
Renewable Energy Systems)
Friday, June 10th
2:00 to 3:00 PM
(1 Snake Hill Road, North
Scituate, RI 02857)

CALL (or Email) TO REGISTER – these workshops will assist you in understanding the new RI Ag Energy Program Grant and the various other grant assistance programs available. **Call or email to register for the Farm Energy Tour too!**

Be sure to **NOTE WHICH** workshop you be attending - 401-500-0399 or info@rifarmenergy.org

West Greenwich Community Center

(behind the Louttit Library)

Wednesday, June 8th from 4:00-6:00 PM

(274 Victory Highway, West Greenwich, RI 02842)

Tiverton Library

Thursday, June 16th from 2:00 to 4:00 PM

(35 Roosevelt Avenue, Tiverton,, RI 02878)

North Scituate Library

Thursday, June 23rd from 5:00 to 7:00 PM

(606 West Greenville Road, North Scituate, RI 02857)

Funding and incentives may be available for energy practices on your farm! For more information, contact the Rhode Island Farm Energy Program at 401-500-0399 or info@rifarmenergy.org

A project of Rhode Island Resource Conservation & Development Area Council, Inc.

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c/o RI RC&D - 2283 Hartford Avenue – Johnston, RI 02919 – 401.500.0399

email: info@rifarmenergy.org website: www.RIFarmEnergy.org

Farmers Markets in Rhode Island

<http://www.farmfresh.org/food/farmersmarkets.php>

Who's Your Farmer?

Farmers markets are one of the easiest places to find the tasty harvests of Rhode Island farms. You'll find a diversity of foods fresh from the fields and meet the people who grow your meal. Plus, every dollar paid directly to a local grower is a dollar reinvested into Rhode Island communities.



How Do I Find A Farmers Market?

Follow the link to the Local Food Guide To Rhode Island.

You can select for markets by:

- Location (Zip Code)
- Food Type
- Day Of The Week
- Payment Type
 - EBT / SNAP
 - SNAP Double Value
 - WIC Farmers Market Coupons
 - WIC Fruit & Veg Coupons
 - Seniors Coupons
 - Credit Cards
 - Fresh Bucks

Other Resources

You also can find:

- CSA (Community Supported Agriculture)
- Pick-Your-Own
- Fun on the Farm
- Community Activities
- Recipes
- Educational Resources
- And much more



<http://www.farmfresh.org/food/farmersmarkets.php>

Weekly Alerts from Andy Radin

Continuing the practice of the last couple of years, URI in collaboration with UMass and UVM, will again for this 2016 growing season distribute via email weekly pest and disease alerts for vegetable and small fruit crops. If you are already on the RIAG-NOTES listserv, this will automatically come your way.

If you are not on our listserv, please request to be included by sending an email to Andy Radin: Andy_radin@mail.uri.edu

Printed below is the first weekly update for 2016!

Pest and Growing Update 5/25/16

Hello at last from URI! This is the first of your weekly pest updates for the summer of 2016.

Notes on New England vegetable crops are compiled by Katie Campbell-Nelson at UMass, after a weekly phone conference among several of us from RI, NH, MA, ME, VT, and NY.

The ridiculously warm winter fooled us into thinking the growing season would unfold quickly- We are easily fooled..

Growing Degree Days (GDD)- this is a measure of accumulated warmth, based (usually) on 50° F. That is, if the average temperature over a 24 hour period is 58, then the number of GDD accumulated on that day is 8. As you can see below, we are now behind accumulated GDD from last year, 2015:

329 gdd to date 2016

386 gdd to this date 2015

This measure is closely linked to seasonal developments, like when various vegetation comes into bloom (yellow rocket field mustard, red maple, lilac) and when important pest insects begin to emerge, like European Corn Borer, Onion maggot fly, Cabbage maggot fly, and others.

By the way, ECB moths fly at approximately 374 GDDs- and note that while ECB is a very important sweet corn pest, it can lay eggs on the stems of peppers, potatoes, and snap beans, and the larvae bore these plants out.

Crop Reports

Asparagus: As warm as the winter was, the deep freeze in February may have damaged some buds on crowns, resulting in damaged early spears, or at least that's what happened at URI's agronomy farm planting.

The [Common Asparagus Beetle](#) is active now and laying eggs. Reports have come in from Bristol Co. and Franklin Co. MA and Washington Co. RI. Use these thresholds for treatment after scouting 25 plants randomly through the field:

Lifestage	Threshold
Adults	5-10% of plants infested
Eggs	2% of spears with eggs
Larvae	50-75% of plants infested
Defoliation	10% of plants defoliated

Treat spears after harvest is complete using materials listed in the New England Vegetable Management guide: <https://nevegetable.org/crops/insect-control>. Disk old ferns lightly in the fall and clean areas around planting of debris to reduce overwintering populations.

Allium: [Onion Maggot](#) adults were active in Bristol Co. MA, but no eggs and only one maggot was found in a field of onions planted one week prior. Adult flight may be monitored by following the [NEWA onion maggot forecasting model](#) or with yellow sticky cards. A grower trying silver plastic to deter [Onion thrips](#) has noticed that onions growing in the silver plastic have fewer leaves and are slower to grow than those in black plastic. Thrips were found in this field on silver plastic, but well below threshold of one thrip per leaf out of 25 plants scouted.

Allium Leaf Miner: has not been reported in New England but has been seen in is a new invasive pest that was confirmed in New Jersey this month and was reported in Pennsylvania in December of 2015. These are the only reports of this pest, which is native to Poland, in the western hemisphere—it has not been reported in New England. This is a new pest, and suspected infestations should be reported to the URI Plant Clinic (401-874-2967). Females lay eggs in a linear pattern towards the tip of leaves (Figure 1). After larvae hatch, they mine their way down towards blubs causing leaves to become wavy, curled and distorted. Where the pest is present, adult (fly) activity should decline after 2-3 more weeks, according to available information on this pest. After this point, larvae will pupate (Figure 3) and remain dormant for much of the summer. Flies will emerge in late- summer and early- fall to and may infest the fall crop.

Brassica: [Cabbage root maggots](#) damage continues to be reported but not in great amounts. They were found in a mixed brassica planting in Hampshire Co., MA, last week, where eggs had been laid in the transplants seedling trays and hatched once transplanted in the field. They were also found in a mixed brassica field in Providence Co. RI. this week. Scouting transplant trays for eggs can be difficult because of the high density of plants in a tray, and especially if your mix has perlite! You can scout for eggs by looking around the base of the plant for a cluster of bright white, slender, long eggs adhering to soil or stem at the soil line. Pre-plant and transplant treatments are available in the [New England Vegetable Management Guide](#). Adult emergence and

flight may be monitored by following the NEWA cabbage maggot [forecasting model](http://newa.cornell.edu/index.php?page=cabbage-magot): <http://newa.cornell.edu/index.php?page=cabbage-magot> or by using yellow sticky cards. You can scout for eggs by looking around the base of the plant for a cluster of bright white, slender, long eggs adhering to soil or stem at the soil line.

In the upcoming heat plants are likely to be stressed and more susceptible to insect feeding. The first Warm weather also increases Striped flea beetle activity. Be sure to scout brassicas this week as row covers are removed and treat if 10% of plants have damage or if there is an average of 1 flea beetle per plant.

Beet, Swiss Chard, and Spinach: Leaf miner eggs were found outdoors in a spinach crop in Washington Co., RI and Franklin Co., MA this week. Treat when eggs are first observed, as they will hatch in 3-6 days and once they are inside the leaf, they can no longer be effectively reached with insecticide. See the New England Vegetable Management Guide for treatment options.

Cucurbits:

No striped cucumber beetles have been reported, but their presence is imminent. Keep row covers on, check newly emerged seedlings early in the day- they drop to the soil, rather than fly away. See New England Management Guide for treatment options.

Blooming summer squash inside a high tunnel had feeding damage to flowers by Pillbugs (a.k.a. sow bugs, roly polly's). This is probably harmless, but damage may resemble cucumber beetle feeding. Look inside flowers to be sure.

We will be setting out traps to monitor for Squash Vine Borer in the next week.

Solonaceous:

Tomato spotted wilt virus was reported from a greenhouse in seedlings. The disease is not seedborne, but is transmitted by thrips. This disease has a wide host range and is easily spread in greenhouses where flowers are also grown. Try to keep ornamentals separate from vegetable starts.

Three lined potato beetles were observed in potato in Washington Co., RI. Get ready for Colorado potato beetles!

Good luck getting all of your tomatoes, peppers and eggplants set out- water them in well, it's DRY! Turn on the drip right away, if so equipped.

Sweet Corn: first European Corn borer was caught in Hillsboro Co. NH. Likely laying eggs on alternate hosts in weedy field edges. Some growers who started on plastic are on to their 3rd planting of sweet corn in NH. A Washington Co., RI, grower has just put in his 5th planting; first planting under row cover is almost knee-high.

Various moth traps have all been set out this week to be ready for monitoring throughout the summer. We encourage sweet corn growers to consider basing their spray programs on moth trap catches, rather than the calendar. We will provide you with trends from all around New England.

Multiple:

Anyone have cucurbit seedlings dying from root damage?

[Seed corn maggot](#) pupae have been found in large numbers in fields where cover crops were incorporated and after causing severe damage in cucurbit seedlings, adults are emerging in large numbers under row cover. Fields fertilized with **seed meals** (i.e. soybean, peanut) have also experienced problems with this pest which is attracted to these fertilizers for food. Both of these observations were made this week in Hampshire Co. MA. Reports of damage from this pest have been widespread this season coming from VT, NH, CT and MA. After adults emerged in the warm snap in April when peak flight occurred at 360GDD (base 40F), they laid eggs which hatched and fed on transplants and seedlings for 2-3 weeks before pupating. The first generation of this pest is now complete. There may be 2-3 generations in New England, but the first is the most damaging. [Seed corn maggot](#) caused 100% death to a crop loss of a cucurbits in a high tunnel cucurbit crop in Hampshire Co., MA. A second round of cucumbers planted into the same tunnel were also all killed last week. Eric Sideman of Maine Organic Farming Association noted: "If you need to replant, wait at least 5 days if maggots that you find are a quarter inch long; if they are smaller than that, wait at least 10 days to make sure they have pupated and will not damage the new seeds." This pest was also confirmed by the UMass plant diagnostic lab in cucumbers transplanted into black plastic from Hartford Co., CT, and a grower from Burlington, VT reported: "The faux warmup in early April led to our worst seed corn maggot problem in years: our entire planting of snap peas was wiped out."

Since peak flight (50% emergence) of this pest occurs at 360 GDD, we have mostly passed the infestation period in MA (Table 1). Larvae feed on seeds and young seedlings of many crops (e.g. corn, beans, beets, peas, spinach, onions, cole crops).

[Asiatic beetle grubs](#) were plentiful in a field recently which had previously been in weedy pasture in Providence Co., RI. These grubs are attracted to broadleaf plants and vegetable seedlings. They can be a pest on the roots of nearly any vegetable seedling. The current spring feeding is done by overwintering 3rd instar grubs. They will pupate shortly and adults will emerge in early July. Adults are foliage feeders and can do some damage on basil, peppers and other crops, in the same way as Japanese beetles. *Heterorhabditis bacteriophora* and *Stienernema glaseri* nematodes efficacy is variable and most effectively applied in late- August to early -September when the grubs are in their early instars, before moving down into the soil for the winter. Applications of beneficial nematodes made now in the field can be very expensive and likely not very effective. Thresholds have only been established for turf grass where 10 to 15 grubs/ft² are needed can be present before control is warranted.

It seems we are past cold nights in most of New England!

Bring on the heat!

Grim Outlook for Peach Harvest in New England This Season

By Margaret Siligato

As a local Rhode Islander, I like many, look forward every year when I can once again bite into a fresh, juicy, locally grown peach. Always a family favorite, I make peach cobbler, peach pie, peach jam, and even freeze them for winter dessert dishes. Ah, my family and I count the days for the RI grown fresh, juicy local peaches. However, this year's sudden temperature plunge destroyed the crop in most of the Northeast.

Many farmers are attributing climate change to the destruction of their peaches this year. Peaches are very sensitive to weather variability especially early spring frosts. According to Heather Faubert, URI fruit expert, "it was the cold snap in February that killed developing flower buds. Last fall/winter, temperatures did not decrease gradually as they normally do, followed by temperatures remaining above average until February, and then temperatures suddenly dropped well below zero". We even missed the beautiful peach tree bloom, that many growers look forward to enjoying, insuring a healthily crop of peaches.

The lack of a normal peach crop extends from New Jersey to Maine, So this year you may have to travel south as far as Georgia to get fresh peach-



What we should have seen: blooming trees!



What we actually saw: dead branches!



What we actually saw: no blooms!

es, or find the few growers in RI that report some surviving peaches. You will be lucky if you find them.

For more information on climate change visit the Northeast Climate Hub website. <http://blogs.usda.gov/tag/northeast-climate-hub/>

Page 9 of this newsletter is a copy of the **Northeast Climate Hub** homepage, showing the menu options and listing popular topics. This is a very easy to use and informative site for information on the local impact of climate change. 🌱

Northeast Climate Hub

<http://www.climatehubs.oce.usda.gov/northeast>



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Welcome to the Northeast Climate Hub

The Northeast Hub, building on capacity within USDA, delivers science-based knowledge and practical information to farmers, ranchers and forest landowners in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, West Virginia and D.C.



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Northeast Climate Hub



Popular Topics:

- > [Northeast Vulnerability Assessment](#)
- > [Emerging Manure to Energy Technologies | June 1st Webinar](#)
- > [Quarterly Northeast Newsletter Signup](#)

News in the Northeast Hub:

- [Webinar Now Available: Cornell's Climate Smart Farming Program](#)
- [Agriculture and Forestry: Part of the Climate Solution](#)
- [Adaptation Resources for Agriculture in the Midwest and Northeast](#)

[more...](#)

Focus on Climate in the Northeast Hub:

- [Croplands](#)
- [Forestlands](#)
- [Pastures and Haylands](#)
- [Livestock](#)

Events Calendar:

May						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



Are You Tired of Financing Crop Losses?

The last two winters have been hard on a variety of fruit crops. Excessive snow, cold and fluctuating temperatures have resulted in crop losses. Many Rhode Island growers have diversified to mitigate the occasional loss of a crop. This strategy of diversification has been a good risk management plan for years. The past two years, grower's self-insuring against crop losses has put a strain on the farm budget.

There is another way for growers to protect against catastrophic losses. Growers can purchase a policy to insure their crops. There are crop insurance policies for apples, grapes, peaches and cranberries that are sold by private crop insurance agents. These agents offer a wide variety prices and coverage levels. All crops, not covered by crop insurance, can be protected with a Non-Insured Crop Disaster Assistance Program (NAP) policy sold by the USDA Farm Service Agency.

Here is an example for **Peaches** of the level of available protection and cost of a policy.

Federal Crop Insurance Example:

Peaches (Providence Cty.) 1 acre, Yield 149bu/acre, Price \$51.50/bu.

% coverage	Bu. Guarantee	\$ Guarantee	Premium/acre	Admin. Fee
75%	112bu	\$5768.00	\$760.00	\$30.00
70%	104bu	\$5356.00	\$563.00	\$30.00
65%	97bu	\$4996.00	\$461.00	\$30.00
60%	89bu	\$4584.00	\$355.00	\$30.00
55%	82bu	\$4223.00	\$316.00	\$30.00
50%	75bu	\$3863.00	\$258.00	\$30.00

Crop insurance is sold and delivered through private crop insurance agents. A list of crop insurance agents is available at all USDA Service Centers or on the RMA website at: www.rma.usda.gov/tools/agents/.

Non-Insured Crop Disaster Assistance Program (NAP) Example:

Peaches (Newport, Washington, Kent, Bristol)

1 acre, Yield 149bu/acre, Price \$64.70

% coverage	Bu. Guarantee	\$ Guarantee	Premium/acre	Admin. Fee
65%	96.9bu	\$6527.69	\$342.70	\$250.00
60%	89.4bu	\$6025.56	\$316.34	\$250.00
55%	82.0bu	\$5523.43	\$289.98	\$250.00
50%	74.5bu	\$5021.30	\$263.62	\$250.00
Basic	74.5	\$2761.72	N/A	\$250.00

NAP insurance is delivered through the USDA Farm Service Agency (FSA) In RI, contact your local county FSA Office.

URI Extension works in partnership with the USDA Risk Management Agency (RMA) to educate Rhode Island producers about Federal Crop Insurance and Risk Management Programs. For more information, please visit www.rma.usda.gov or contact URI Risk Management Specialists Paul Russell at pmrussell@umext.umass.edu or Tom Smiarowski at tsmiarowski@umext.umass.edu

“This Institution is an Equal Opportunity Provider”

Considerations for Protection of Pollinators

On May 18th, over 100 green industry business professionals from the Rhode Island Landscape and Nursery Association (RINLA) met for a Twilight Meeting at Clark Farms and Morning Star Nursery in South Kingstown, RI to hear Dr. Richard Cowles, entomologist with the Connecticut Agricultural Experiment Station, discuss “Considerations for Protection of Pollinators When Using Neonicotinoids in the Landscape.” Paul Russell, Agricultural Risk Management Specialist, UMass Extension was also gave a presentation on nursery crop insurance.

To put the issues surrounding the controversy of the effects of neonicotinoids on pollinating insects in context, Dr Cowles addressed the following four important considerations:



Dr. Richard Cowles, Connecticut Agricultural Experiment Station and Heather Faubert, URI. (Photo Credit: Margaret Siligato)

1. What are neonicotinoid insecticides, and why are they important?
2. What is the evidence for and against a role for neonicotinoids causing problems with bees?

3. What are appropriate responses to minimize risks for pollinators from the use of neonicotinoids?
4. What else could be done to improve the plight of our bees?

In summary he cautioned that unless carefully crafted, increased state regulation for the use of neonicotinoids is unlikely to improve the health of honey bees but could have many negative consequences.

Detailed answers to the four questions above are provided on pages 13-19 of this newsletter. This synopsis can also be accessed at:

http://americanhort.theknowledgecenter.com/library/Americanhort/Images/AmericanHortNews/Washington%20Impact/8673/Neonicotinoid%20synopsis%20revision_Cowles.pdf 🌿



Dr. Richard Cowles, Connecticut Agricultural Experiment Station discussing neonicotinoid pesticides and risks for pollinators. (Photo Credit: Margaret Siligato)

Considerations for Protection of Pollinators (cont.)



*Paul Russell, UMass Extension giving a presentation on nursery crop insurance.
(Photo Credit: Margaret Siligato)*



*Participants at RINLA Twilight Meeting at Clark Farms and Morning Star Nursery.
(Photo Credit: Margaret Siligato)*

A Synopsis of the Neonicotinoid Insecticide vs. Bee Controversy

Richard S. Cowles, Ph. D., Connecticut Agricultural Experiment Station, Valley Laboratory, Windsor, CT 06095

Several states have expressed the desire to increase the regulation of neonicotinoid insecticides in order to protect pollinators. The Connecticut state legislature worked to enact legislation in 2016 related to this concern. The following review was adapted from a mini-review of the subject matter written for legislators.

What are neonicotinoid insecticides, and why are they important?

Some synthetic systemic insecticides having the same mode of action at nerve synapses as nicotine are classified as neonicotinoids. These (acetamiprid, clothianidin, dinotefuran, imidacloprid, and thiamethoxam) have become an extraordinarily important class of insecticides because:

1. They are exceptionally selectively toxic to insects vs. vertebrates, making them relatively safe to humans (applicators, consumers, and most non-target vertebrates) when compared with the insecticides that would otherwise be used.
2. Their systemic nature means that, once absorbed by a plant's roots, they can reach hidden areas throughout the plant to affect insects feeding on the plant. By being presented on the inside of the plant, systemic insecticides are inherently safer for most beneficial predators and parasitoids of pests than many contact-acting insecticides, allowing integration of chemical and biological control.
3. Most neonicotinoids break down quickly when exposed to sunlight. Low-rate foliar sprays can be of such short residual nature that they may minimally impact beneficial insects. When absorbed into plants, these insecticides are protected from the effects of light by the plants' photosynthetic pigments, meaning that they have relatively long residual properties in leaves. This, in turn, means that they are applied less frequently to manage pests than many alternative insecticides.

What is the evidence for and against a role for neonicotinoids causing problems with bees?

The systemic nature of neonicotinoids implies that they may be presented through nectar and pollen to bees and other pollinators, which are extremely sensitive to exposure to certain neonicotinoid products. Not all neonicotinoids are categorized as "highly toxic" to bees by the U. S. EPA: acetamiprid is approximately 1,000 – 2,000 times less toxic to bees than the nitroguanidine subclass of neonicotinoids (which include clothianidin, dinotefuran, imidacloprid, and thiamethoxam). One of the most controversial scientific problems of our day is whether problems in bee health (honey bees, bumble bees, and native solitary bees) can be

blamed on their unintentional chronic poisoning by exposure to this class of insecticide. Two general hypotheses (not mutually exclusive) could explain, for instance, the phenomenon of Colony Collapse Disorder (CCD), in which honey bee workers disappear from their hives, leaving the queen and developing young (brood) (Oldroyd 2007). Insufficient numbers of workers leaves the colony unable to function, and it subsequently dies. CCD may be a more acute version of a more commonly observed, broader problem of overwintering colony mortality.

Hypothesis 1: Neonicotinoids are to blame. This hypothesis proposes that exposure to low concentrations of neonicotinoids will cause worker bees to lose their ability to return back to the colony – hence the loss of worker bees from the colony (reviewed in Goulson 2013). Furthermore, it also proposes that neonicotinoids may increase susceptibility of bees to diseases, disrupt the social organization of honey bees, and interfere with reproduction of bumble bees and solitary bees (Rundlöf et al. 2015). Although honey bees metabolize imidacloprid quickly (Suchail et al. 2004), those molecules that have bound to nerve receptors would be unavailable to be metabolized, and so toxic effects may accumulate under conditions of continued chronic exposure and be greater than predicted by overly simplistic pharmacological models (Tennekes and Sánchez-Bayo 2013). In addition, the combination of exposure to neonicotinoids and other pesticides could present synergistic effects that imply greater toxicity than predicted from laboratory tests, in which neonicotinoids are presented in isolation from these other pesticides (Sánchez-Bayo and Goka 2014).

Hypothesis 2: Diseases are to blame. This hypothesis is based on the established knowledge that when honey bees are very sick, they leave the colony to die, a phenomenon called altruistic suicide (Rueppel et al. 2010). When enough worker bees become sick, altruistic suicide could lead to CCD or hives too weak to survive the winter. Varroa mites are an important parasite of honey bees first discovered in the U.S. in 1987, a few years before neonicotinoids were first introduced into agricultural use. Varroa mites (a) directly parasitize bees, weakening them, (b) are efficient vectors of certain viral diseases in bees, and (c) may suppress the immune system of bees, making them more susceptible to infections (Yang and Cox-Foster 2005). There is **no controversy** that the introduction and spread of varroa mites has made keeping bees very difficult in the U.S. and the rest of the world. Along with the spread of varroa mites, concomitant introduction or spread of new viral diseases (deformed wing virus, Israeli acute paralysis virus, Kashmir virus, and tobacco ringspot virus, among others) and one fungal disease, *Nosema ceranae*, are linked to poor colony performance and increased overwintering mortality of hives (Neumann and Carreck 2010; Lian et al. 2014). A strong predictor of poor bee health worldwide has consistently been identified as varroa mites acting in concert with deformed wing virus (Wilfert et al. 2016). In addition, to combat both varroa mites and the small hive beetle (first detected in the U.S. in 1998), certain registered pesticides are now used directly in hives, leading to potentially high levels of exposure to these products.

When comparing the explanatory value of these hypotheses, the disease hypothesis is very strongly supported by evidence, whereas data supporting the neonicotinoid hypothesis is very

weak (with respect to honey bee health and involvement with CCD), but more strongly supported with respect to their potential to cause harm to bumble bees and solitary bees (Rundlöf et al. 2015). The chief problems with blaming neonicotinoids for problems with honey bees are:

(1) Although Colony Collapse Disorder was named in 2006, literature review revealed that this phenomenon has a long history, with incidents reported centuries ago and more recently in 1906, 1961 – 62, and 1979, renamed as a new problem on each occasion (Oldroyd 2007, Neumann and Carreck 2010, Borst 2015). Clearly, this phenomenon cannot be uniquely attributed to the recent introduction of neonicotinoids about 1991. Modern biological methods to detect and identify new viral diseases were not available until the occurrence of CCD.

(2) The general problem of poor bee health occurs wherever varroa mites are found, and is not correlated with the use of neonicotinoids. For example, acute colony losses have not been reported from Australia, which allows neonicotinoid use but does not have varroa mite infestations of honey bees. Also, European countries that banned neonicotinoids but had varroa mites continued to have problems with heavy losses of bees (Ratneiks and Carreck 2010).

(3) The involvement of a disease was directly implicated in 2007 through experiments introducing healthy honey bees into contaminated hive equipment that was either sterilized or not. Bees introduced into non-sterile hives (from which a previous colony had collapsed) themselves collapsed, whereas those introduced into irradiated hives (which would kill pathogens but not remove pesticides) thrived (Pettis et al. 2007).

(4) In order for neonicotinoids to be responsible for deleterious effects on bees, there has to be a combination of presence in pollen or nectar at toxic concentrations and over a sufficient length of time to affect bee biology. The latest information as assessed by U.S. EPA toxicologists indicates a clear threshold concentration of 25 parts per billion (ppb) in nectar to influence honey bee health [concentrations affecting other species of bees may be lower] (U.S. EPA 2016). Surveys for contamination of pollen collected by honey bees indicate that the average concentration and exposure of honey bees through pollen is approximately 2 ppb, with combined neonicotinoid residues being equivalent to approximately 6 ppb of imidacloprid (Blacquiere et al. 2012, Lu et al. 2015, Lawrence et al. 2016). Samples rarely may approach or exceed the 25 ppb threshold required for chronic exposure to affect honey bee health. There are specific instances when use of neonicotinoids can be expected to lead to adverse effects, including use of these products in citrus and cotton crops, and, as evident from poisoning instances, on linden trees (U.S. EPA 2016). Pesticide registrants recognized that treatment of linden trees with neonicotinoids posed an unacceptably high risk to bees, as reflected by the disproportionate incidences of bee poisonings following systemic treatment of linden trees, and so they have or are in the process of removing these uses from their product labels.

What are appropriate responses to minimize risks for pollinators from the use of neonicotinoids?

Legislative actions related to the perceived risks to bees from use of these insecticides have ranged from bans of their use (e.g., the two-year ban in Europe, action in some areas in Canada and the U.S.) to acceptance of this class of insecticides as being less damaging to bees than the insecticide alternatives that they largely replace (Australia) (APVMA 2013). The range of options and their consequences from adoption of these options are highlighted here.

1. Total ban on their use.

This would constitute an immediate hardship for ornamental nursery and other agricultural industries, which would immediately have to find insecticide alternatives to manage certain pests of significance. Many of the alternative insecticides may be as or more toxic to bees than neonicotinoids. Nurseries have to pass phytosanitary inspection in order to ship plants that are free of pests to other states. For example, rhododendron leaf miner is native to southern New England and not in other parts of the country. Shipments of rhododendrons from Connecticut (a multimillion dollar crop) could be made very difficult, as alternative effective treatment methods are not known.

Management of exotic pests of trees would become much more difficult. A single imidacloprid treatment provides seven years of protection for a hemlock tree from damage by hemlock woolly adelgid (Benton et al. 2016). Treatment with either imidacloprid or dinotefuran protects ash trees from infestation by emerald ash borer. Quarantine treatments for Asian longhorned borer (ALB) are dependent on use of imidacloprid; if this product is no longer available, trees in infested areas would automatically have to be removed. This could cause faster dispersal of adult ALB through quarantine areas.

2. Ban specific uses.

States could target particular uses or formulations of these insecticides for which the benefit for their use is outweighed by the environmental cost. A controversial use of these products is seed treatments for corn, soybean, and sunflower crops (reviewed for soybean uses by Bailey et al. 2015). At the time of planting, liberation of the insecticide into the air as dust from treated seed has been identified as particularly hazardous to bees. Manufacturers of seeding equipment and chemical companies have been working to resolve this problem (PMRA 2013). Requiring farmers to follow best management practices to prevent bee poisonings associated with planting treated seeds can easily be justified.

The specific prohibition against use of neonicotinoids on linden trees is now stated on the product labels, and is a federal extension, via voluntary changes of label language by the pesticide registrants, of a ban initiated by Oregon following bee poisonings. It is possible that there are other flowering plants, like lindens, for which treatment would be hazardous to bees.

If these were identified, or the conditions of their use leading to hazard to bees, then these uses may be curtailed at the state level.

3. Make neonicotinoids “restricted use” pesticides.

Restricted use pesticides require possession of a pesticide applicator’s license in order to purchase a pesticide for use in the state where it is restricted. For instance, Safari (dinotefuran) is a restricted use product in Massachusetts, due to concerns regarding its potential mobility in ground water. Such an action would prevent most applications by homeowners, and would limit application to holders of a pesticide applicator license. Licensed applicators, by law, have to complete courses that will mean that they are better informed than the general public on safe practices regarding pesticide use. The negative consequence from making these insecticides restricted use products involves this action’s socioeconomic impacts. Currently, ash trees can inexpensively be treated by homeowners with imidacloprid to prevent infestation. Low-income homeowners may not afford hiring the services of arborists for treating ash trees on their property, and if imidacloprid use were restricted, these trees may go untreated and subsequently die. Ash tree canopy loss directly affects environmental quality, and may indirectly affect human health, thereby justifying the preservation of these trees (Donovan et al. 2013).

4. Promote better use of this class of insecticides.

There clearly are concerns regarding the potential for these insecticides to be present at high enough concentrations in pollen or nectar to affect the biology of all pollinators. The Connecticut Agricultural Experiment Station and colleagues from several land grant universities are conducting research regarding exposure of bees, and the dynamics of contamination of pollen or nectar through the use of these systemic insecticides. The results from these efforts can be used to provide evidence-based best management guidelines for nurseries, groundskeepers, and homeowners to get the greatest benefit from these insecticides, where needed to identify alternatives to their use, and minimize their environmental impacts. Mitigation of these risks has already been taking place for several years through educational programs to arborists, and over time may reduce risks to become environmentally insignificant.

What else could be done to improve the plight of our bees?

States should embrace the efforts presented in the Presidential task force report to protect bee health (The White House 2015). These efforts could include strategic changes to improve bee forage along the state’s highways, and educational programs for the general public on the importance of bees and landscape design to benefit bees. National efforts to improve bee health through improvement of honey bee genetics to resist varroa mites, and better treatments to prevent their infection by viruses and fungal diseases are likely to resolve the problems of poor honey bee health and may improve the health of native bees, too.

Summary

Unless carefully crafted, increased state regulation for the use of neonicotinoids is unlikely to improve the health of honey bees but could have many negative consequences.

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Managing Farm Marketing Risks

By Sanne Kure-Jensen

Farms, ranches and nurseries can be profitable when all their “ducks line up,” the weather cooperates and customers line up to buy everything available at their list price. Marketers refer to this scenario as getting the four Ps right: Products, Price, Promotions and Place. Farmers, ranchers, growers and producers can grow great Products with perfect weather conditions. Consumers buy lots of product when the Price meets their needs and expectations, when marketing efforts reach consumers and the products are available in a convenient form and at convenient Place.

Marketing Risk is anything that creates business uncertainty including variable input costs, competitors’ products and prices, seasonal price fluctuations and fickle consumer demand. Production risks include unexpected pest infestation, drought, flooding, hail or hurricanes as well as small, low quality yields or even crop failures.

Marketing Risk includes seasonal and annual variability in what consumers will buy. This risk varies with market availability and access.

It is vital for growers to understand and mitigate market risks by understanding markets and buyers. Create a contingency plan in case buyers change their interests, don’t show up on rainy farmers’ market days or choose products from your competitors. An uninformed grower or producer with poor market understanding, a small (not broad) buyer network and poor records won’t have a backup wholesale buyer when retail sales falls through.

One of the best tools to mitigate and plan for marketing risk is good records to

inform pricing strategies and help ensure profitability. Product prices should correctly reflect the true cost of production and suit the target market. These same records inform farmers, ranchers, growers and producers on how far they can drop prices and still make money. As farmers, ranchers, growers and producers gain market experience, they will find it easier to calculate production costs by estimating seasonal and annual yields, determine break-even thresholds and drop unprofitable products or enterprises.

Farmers, ranchers, growers and producers should explore alternative marketing strategies with various marketing organizations and evaluate whether value-added ventures should be a part of their product offerings.

A month of stormy Sundays keeping local consumers home will reduce market access. An unrelated food recall across the country may discourage consumers from buying a particular product like strawberries or spinach for the rest of the season.

Farmers, ranchers, growers and producers can mitigate and plan for these and other types of marketing risks with a written **Marketing Plan** incorporating and relating to their Business Plan, Crop Plan and other farm documents. Plans should be updated each year as crop mixes and products change. The plan should cover the full calendar year and all crops, livestock, value added products and farm enterprises (like agritourism) planned during the year. The Marketing Plan should consider any potential interactions or overlaps among various enterprises.

Like all Marketing Plans, farmers, ranchers, growers and producers should make regular market analysis through customer research, which can be as simple as asking buyers a couple of questions during their purchase, or inviting customers to participate in a short on-line survey. Ask consumers how they heard about your farm stand or business (newspaper, post card, word of mouth, etc.) to learn which marketing efforts are cost effective and worth repeating.

Create a **Contingency Plan** before it is needed. Choose tools best suited to the business and risk tolerance level. Start by understanding farm business marketing risk and risk tolerance level around marketing options. Consider cash flow. Marketing and sales income should cover cash flow needs for housing, food, transportation, clothing, taxes as well as medical, farm, product and liability insurance and a vacation.

The **alternative marketing strategy** should address ways to enhance income, reduce risk or both. If marketing is a weakness, hire a professional marketer or firm.

In any business, leaders should hire to their weakness whether that is photography, logo or graphic design,

social media or communication. These services don't have to cost a fortune; consider trading a CSA share for some of this work.

Always keep plans and market analysis current to reduce the risks of market surprises, delayed ability to react to changing markets. Be ready to shift to alternative marketing tools such as the latest social media vehicle. Being ready to react will reduce response time, reduce costs and potentially increase sales and profits.

Many local organizations offer farm business planning services to local farmers, ranchers, grower and producers:

- Center for Women in Enterprise
- Farm Credit East
- NOFA/RI Organic Farm Advisors
- Small Business Administration (SBA)
- URI Cooperative Extension
- USDA Farm Service Agency
- Young Farmer Network

These organizations in southern New England offer incubator farm business opportunities:

- Southside Community Land Trust
- Sustainable Aquidneck
- New Entry Sustainable Farming Project
- Snake Den Farm

Additional Resources:

- http://ucanr.edu/sites/placernevadasmallfarms/Farm_Business_Planning-new_2/FBP_Risk_Management/Risk_Management/Marketing_Risk

Direct Marketing

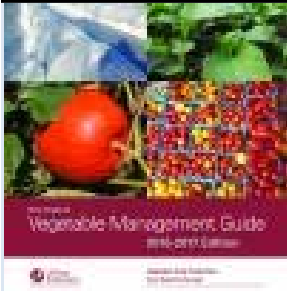
- <https://attra.ncat.org/marketing.html>
- <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=263>

Creating a Safety Risk Management Plan

- <http://sfp.ucdavis.edu/agritourism/factsheets/factsheet3>

Vegetable Management Guide

Available Now!



2016-2017

New England Vegetable Management Guide

The 2016-2017 New England Vegetable Management Guide is a comprehensive guide to current production and pest management techniques for commercial vegetable crops. There are in-depth sections on:

- cultural practices,
- vegetable transplant production,
- integrated pest management for insects,
- weeds and diseases, and on,
- individual vegetable crops.

Fertility and pesticide information has been fully updated for both organic and conventional production.

Purchase copies of the Guide at the [UMass Extension Bookstore](#). Their updated on-line portal allows you to purchase items directly from their website using a MasterCard or Visa, or by printing your confirmation and mailing it in with a check.

You can also order by phone by calling:
1-877-UMASSXT (within MA) or 1-413-545-2717.

Buy the Guide by itself, or as a package with the NE Vegetable & Strawberry Pest ID Guide. The Pest ID Guide contains over 200 full-color images of the weeds, insects, diseases, and disorders that may be affecting your crops, and beneficial insects too. The Pest ID Guide is an indispensable companion to the Veg Guide, and you save big when you buy them together!

Guide pricing:

2016-2017 New England Vegetable Management Guide alone:	\$25.00
Northeast Vegetable & Strawberry Pest Identification Guide alone:	\$15.00
Veg Guide & Pest ID combo pack:	\$30.00

Fruit Growers Meeting

On May 19, over 75 RI and Massachusetts Fruit Growers attended a twilight meeting at Phantom Farm in Cumberland, RI to learn about the “tall spindle system” Kerry Stenovitch is using in a newly planted section of her orchard.

Speakers at the meeting included: Jon Clements, UMass Extension; Kerri Stenovitch, Phantom Farm owner and manager; Paul Russell, Crop Insurance Specialist, UMass Extension; Ingrid Fratantuono, RI FSA; and, Heather Faubert, URI apple IPM scout.

An Extension educator with 25 years experience in tree fruit production, Jon Clements is Located at the UMass Cold Spring Orchard in Belchertown, Massachusetts. He is a part of the UMass Fruit Advisor, whose mission is to assist fruit growers with all aspects of horticulture and integrated pest management.

Mr. Clements discussed pruning the tall spindle apple varieties showing training tips and staking techniques. Growers transitioning to this type of apple system need to learn different training and pruning techniques, but if they plant the right varieties they should have good success and greater harvests.

Several growers in the group commented on the positive feedback they receive from customers at pick-your-own operations on the tall spindle system. Customers



Photo Credit: Margaret Siligato

enjoy the low hanging fruit that children can reach. Other growers commented on greater yields they are getting with a higher density spacing of trees and rows than they could obtain with traditional apple growing systems.

The high density systems evolved out of a period of exper-

imentation by both growers and horticultural researchers that started 50 years ago with the abandonment of seedling rootstocks and the search for trees that were more

manageable, bore fruit sooner and yielded more per acre. Tree densities increased from as few as 35 trees per acre on 30 by 40 foot spacing, to more than 2,500 in some high density planting systems.

Paul Russell explained the Apple Crop Insurance Policy and discussed general agricultural risk management. The sales closing date for crop insurance for apples (and peaches) in RI is November 20, each year. While it is too late to purchase Federal crop insurance for this year's crop, it is not too late to learn about the requirements to be protected for next year. Federal crop insurance is only available from a licensed crop insurance agent. The back page of this newsletter provides information on locating and selecting a crop insurance agent.

Ingrid Fratantuono, RI FSA Agricultural Program Specialist, and Acting County Executive Director, discussed both the Noninsured Crop Disaster Assistance Program (NAP) and the Tree Assistance Program (TAP) available to RI producers. NAP provides protection for most crops not covered by Federal crop insurance. NAP is delivered through the FSA and provides financial assistance to

Fruit Growers Meeting (cont.)

producers of non-insurable crops when low yields, loss of inventory, or prevented planting occur due to a natural disaster. TAP is also administered by FSA and provides financial assistance to eligible orchardists and nursery tree growers to replant or rehabilitate eligible trees, bushes, and vines lost by natural disasters. A factsheet on TAP is on pages 26-27 of this newsletter. Additional information on both NAP and TAP can be found on the FSA Website: www.fsa.usda.gov

Heather Faubert discussed controlling fruit pests and her presentation was approved for pesticide credits for growers. Heather also demonstrated the Ag-Radar website managed by UMAINE.

'Ag-Radar' is a catchy name for a simple concept: using desktop computers and the internet to acquire regularly updated weather observation and forecast data, feed it into farm pest management and crop models, and then distribute the output to growers as web pages.

The name "Radar" implies an appropriate way to view these products as tools that help you gauge the relative nearness (in time) or size (severity) of something. Ag-Radar gives you early warning about the timing and/or intensity of weather-based events similar to the way true radar indicates the nearness and size of an approaching object. These products are only like radar in this conceptual sense.

There is no direct use of radar technology in translating the weather data into plant and pest development timing.

RI growers can go to the Ag-Radar site and view rainfall, temperature and disease predictions for their area in an easy to use format. Predictions of weather variables are also shown on the site. In RI, the two recorded sites are in Greenville and Middletown.

See the **Ag-Radar website** and explore the information available:

<https://extension.umaine.edu/ipm/ag-radar-background/ag-radar-apple-sites/>



Photo Credit: Margaret Siligato



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DISASTER ASSISTANCE

FACT SHEET

October 2015

Tree Assistance Program

OVERVIEW

The 2014 Farm Bill authorized the Tree Assistance Program (TAP) to provide financial assistance to eligible orchardists and nursery tree growers to replant or rehabilitate eligible trees, bushes, and vines lost by natural disasters. TAP is administered by the Farm Service Agency (FSA) of the U.S. Department of Agriculture (USDA).

ELIGIBLE TREE TYPES

Eligible trees, bushes, and vines are those from which an annual crop is produced for commercial purposes. Nursery trees include ornamental, fruit, nut and Christmas trees produced for commercial sale. Trees used for pulp or timber are ineligible for TAP assistance.

ELIGIBLE LOSSES

To be considered an eligible loss:

- Eligible trees, bushes, or vines must have suffered more than a 15 percent mortality loss in a stand (after normal mortality) due to a natural disaster;
- Mortality loss on a stand of eligible trees, bushes, or vines is based on:
 - Each eligible disaster event, except for losses due to plant disease;
 - For plant disease, the time period as determined by the FSA for which the stand is infected.
- The loss must not have been preventable through reasonable and available measures;
- The loss must be visible and obvious to the FSA representative; if the loss is no longer visible, FSA may accept other loss evidence and determine whether that other evidence substantiates that an eligible loss due to natural disaster occurred;
- FSA may require information from a qualified expert to determine extent of loss in the case of plant disease or insect infestation.

ELIGIBLE PRODUCERS

To qualify for TAP, eligible orchardists and nursery tree growers must:

- Have suffered qualifying tree, bush or vine losses in excess of 15 percent mortality for the stand (adjusted for normal mortality) from an eligible natural disaster;
- Have owned the eligible trees, bushes and vines when the natural disaster occurred, but eligible growers are not required to own the land on which eligible trees, bushes and vines are planted;
- Replace eligible trees, bushes and vines within 12 months from the date the TAP application is approved.

ACREAGE LIMITATIONS

The cumulative total quantity of acres planted to trees, bushes, or vines for which an eligible orchardist or nursery tree grower can receive TAP payments cannot exceed 500 acres annually.

PAYMENT LIMITATION AND ADJUSTED GROSS INCOME (AGI)

For 2012 and subsequent program years, no person or legal entity, excluding a joint venture or general partnership, may receive, directly or indirectly, more than \$125,000 total in payments under TAP.

In applying the limitation on average adjusted gross income, an individual or entity is ineligible for payment under TAP if the average AGI of the individual or entity exceeds \$900,000.

Direct attribution provisions apply to TAP for 2011 and subsequent years. Under direct attribution, any payment to a legal entity will be considered (for payment limitation purposes) to be a payment to persons or legal entities with an interest in the legal entity or in a sub-entity.

FACT SHEET

Tree Assistance Program (TAP)

October 2015

PAYMENT CALCULATOR

For tree, bush, or vine replacement, replanting and/or rehabilitation, the payment calculation is the lesser of the following:

- 65 percent of the actual cost of replanting, in excess of 15 percent mortality (adjusted for normal mortality), and, where applicable, 50 percent of the actual cost of rehabilitation, in excess of 15 percent damage or mortality (adjusted for normal tree damage and mortality), or;
- The maximum eligible amount established for the practice by FSA.

APPLICATIONS

The following table provides the final dates to submit a TAP application and supporting documentation:

Date of Loss	Final Date to Submit an Application and Supporting Documentation
Calendar year 2015 and subsequent years	Later of 90 calendar days of: <ul style="list-style-type: none">• The disaster event, or• The date when the loss is apparent.

FOR MORE INFORMATION

For more information on FSA disaster programs, visit <http://disaster.fsa.usda.gov> or visit your local FSA county office. To find your local FSA county office, visit <http://offices.usda.gov>.

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If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter by mail to U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

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USDA RISK MANAGEMENT AGENCY (RMA)

Crop insurance is the primary USDA risk management program and provides valuable protection for both production and revenue for many crops. It is delivered only through private insurance agents. Farm level details and enrollment information on specific crop insurance programs are available from crop insurance agents. To find an agent in your area see the agent locator at the RMA site:

<http://www3.rma.usda.gov/apps/agents>

Additional crop insurance information is available at the following sites:

Risk Management Agency:
<http://www.rma.usda.gov>

Private crop insurance industry:
www.CropInsuranceInAmerica.org

CROP INSURANCE SALES CLOSING DATES

November 20, 2016	Apples, Cranberries, Grapes, Peaches
March 15, 2017	Corn, Fresh Market Corn, Potatoes
March 15, 2017	Whole Farm Revenue Protection (WFRP)
May 1, 2017 (other w/30 day waiting period)	Nursery
Last Business Friday of Each Month	Livestock Gross Margin Dairy (LGM-Dairy), LGM-Swine

USDA FARM SERVICE AGENCY (FSA)

USDA provides other risk management protection through the Farm Service Agency. FSA programs include protection for most crops not covered by crop insurance using the Non-Insured Disaster Assistance Program (NAP), the new Dairy Margin Protection Program (MPP-Dairy), and other disaster related programs. The 2014 Farm Bill enhanced these programs, including buy up coverage for NAP.

To learn more about these and all assistance programs offered through FSA, contact your local FSA office and/or go to:

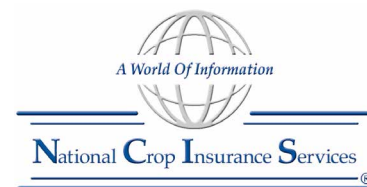
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