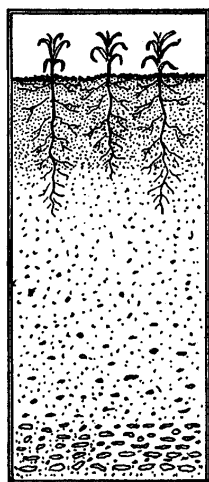


PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

MARCH 13, 2008



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Organic Management of Turf: Do We Know What It Means?

James A Murphy, Ph.D., Specialist in Turfgrass Management

Organic Philosophy

The term organic is often misunderstood by those unfamiliar with the agro-ecological philosophy of organic production and management systems. Use of carbon-based fertilizers for management of plants is often considered organic management; however, this is an incomplete perspective much like the viewpoint that elimination of pesticides from agricultural production constitutes organic management. While both of these examples are components of the organic philosophy, proponents of the organic philosophy take a much broader approach to land and plant management and view the entire system as an “organic whole”. They consider the complex interrelationships of the various components within a landscape as analogous to the parts of living things (organisms). Thus, concepts in organic agriculture typically center on integrating a diversity of crops and livestock to cycle nutrients and re-use natural waste products within the landscape.

Organic agriculture restricts the types of materials that can be used to amend soil, enhance plant nutrition, and suppress pests. Materials allowed for use in organic production are either essentially derived from living things or naturally occurring minerals; synthetic (manmade) materials typically are not allowed. But the organic philosophy isn’t just a set of guidelines on the selection of input materials. Building a “living soil” is a central concept of organic agriculture and is sometimes referred to as the soil food web. Organic agriculture builds and manages soil structure and fertility over many years using compost, approved mineral amendments, livestock, and crop rotations. Management techniques are used to encourage soil organisms including fungi, bacteria and other soil dwellers to form “living bridges” between plant roots and soil humus. These interactions are relied on to transform and release nutrients from the soil organic matter. Additionally, increased biological activity in the soil is thought to enhance beneficial organisms that suppress disease and insect pests. A reduction in the severity of drought, disease and insects are reputed benefits of improved soil quality or health. Organic agriculture production greatly benefits from the fact that the soils on organic farms have not been degraded to the extent that occurs with land development in urban and suburban

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environments. Thus, organic production is more than simply switching to natural organic fertilizer products and eliminating use of synthetic pesticides.

Organic production has become big business in North America with an increasing number of niche markets for organic agricultural products. In the United States of America (USA), National Organic Program Standards (NOPS) were implemented on 21 October 2002 and established clear labeling regulations for organic products certification (see:

<http://www.ams.usda.gov/nop/NOP/NOPhone.html>).

The NOPS were created to protect producers against marketing fraud and assure consumers that organic products meet uniform and consistent standards. Standards were developed by the National Organics Standards Board (NOSB) as mandated by the Organic Food Production Act of 1990. The NOSB is appointed by the U.S. Secretary of Agriculture and consists of 15 members representing farmers, food processors, retailers, consumers, environmentalists, scientists, and certifying agents.

Interpretations of Organics in Turf Systems

Organic production in agriculture is not new, however, the labeling laws, consumer confidence, industry growth and marketability are new. (Note that organic agriculture was essentially the exclusive agricultural practice for thousands of years before the industrial age.) This popularity of organic agriculture is spilling over into other markets including lawns, sportfields and golf. To date, this increasing interest in organic turf management appears to be largely consumer driven; to lesser extent lawn and landscape businesses are developing programs to capture a share of this growing niche market. This has prompted debate over the feasibility of organic production in turf systems - will lawns, sportsfields and golf courses survive if only an organic production philosophy could be used? The answer is probably "yes" based on the fact that these land uses have existed for many centuries. On the other hand, the business of managing turf/land for these uses would change dramatically if organic standards were mandated, particularly if non-uniform regulations for managing turf systems continue to be developed across communities.

Much of this interest in "organic management" stems from the desire to eliminate or reduce use of synthetic fertilizers and pesticides in turf management as evidenced by the regulations developed in communities across North America including Seattle, San Francisco, Long Island, Ottawa and others. Currently, national standards for organic turf maintenance do not exist in the USA, yet individual communities are developing regulations that reduce or eliminate pesticides and often refer to these regulations as "organic". Typically these regulations do not fully address the principles of organic management and largely ignore the challenges of im-

proving degraded soils for growing plants in urban and suburban environments. A greatly enhanced effort on the part of individual property owners and communities to improve the degraded urban and suburban soils used to grow plants (turf, shrubs, trees, etc) would probably be the single most effective practice that would enable a reduction or elimination of synthetic pesticides and other inputs used in landscapes. The loss of soil structure and organic matter as well as severe compaction of soil during the development of land creates extremely difficult growing conditions for plants. Typical turf and ornamental plant management practices (and related regulations) in urban and suburban landscapes do not focus on correcting these severe deficiencies in soil. Thus, plants grown on degraded soil routinely suffer from low fertility and inadequate supply of plant available water unless provided relatively intensive management inputs to compensate. A more complete and effective regulatory approach to change turf and landscape management practices would be to address the substantial problem of soil degradation during land development. The focus on regulation of management practices/philosophies only addresses the "band-aid" techniques used to compensate for the long term plant management problems inherent with degraded soil.

The casual and imprecise use of the term organic can create confusion in the turf marketplace, and it is evident that all parties are not talking about the same thing regarding pesticide elimination/reduction and organic maintenance. Numerous pests, environmental extremes (particularly soil), and traffic stress seriously compromise a turf manager's ability to produce a competitive product (turf) regardless of the management philosophy. The ability to use certain management "tools" in one community but not another (due to non-uniform regulations) creates an unfair situation for turf managers and maintenance businesses. Turf management programs and companies in communities with more stringent restrictions are essentially at a competitive disadvantage in the market compared to communities with more liberal definitions of "organic". Moreover, research and practical experience indicates that the elimination of synthetic pesticides from turf management systems will produce a product (turf) quality that is very different from what is commonly expected by many of today's clientele (property owners). Consumers also need to be aware that the elimination of "synthetic" practices and the adoption of only a couple "organic" practices is unlikely to correct the underlying long term problems caused by degraded soil in landscapes. Thus, considerable education of the consumer is needed so that individuals and communities can make well-informed decisions on landscape management philosophies related to purchase of services and products as well as regulations. □

Get Ready! The Weeds Are Coming

Stephen E. Hart, Ph.D., Specialist in Weed Science and
Patrick McCullough, Program Associate in Weed Science

Over the past several years we have noticed that winter annual weeds have become increasingly widespread and problematic in turfgrass and landscape beds. Winter annuals and some perennial weeds germinate in the late summer/fall, produce vegetative growth, and then will go dormant in winter. As temperatures warm in March and April these weeds will undergo explosive vegetative growth followed by a reproductive phase in late April/May. The increasing pervasiveness of these weeds has been due to the very moderate fall seasons followed by high amounts of soil moisture as these weeds break dormancy in March/April. We expect this year to be especially problematic. Although these weeds will generally mow out by late May/early June, in many turfgrass sites weed infestations may be so heavy that an application of broadleaf weed herbicide may be warranted to reduce competition with desired turfgrass.

If a decision is made to apply a broadleaf weed herbicide, keep in mind that many winter annuals such as chickweed and henbit are tolerant to 2,4-D so be sure the herbicide mixture you choose contains herbicides other than 2,4-D such as dicamba, triclopyr, 2,4-DP (dichloroprop), MCPA/MCPP, or fluroxypyr. For optimum weed control with broadleaf weed herbicides daytime highs should at least be in the 60's. In addition, there is a greater risk of injury to desired turfgrass if these herbicides are applied under current cool weather conditions. We recommend that broadleaf weed herbicide applications be delayed until sustained warmer temperatures occur.

Wild garlic has already broken dormancy and will be especially problematic this spring because this weed continued vegetative growth well into December due to the above average seasonal temperatures. For wild garlic control 2,4-D is a good choice but the ester formulation should be used in place of the amine formulation. Due to the orientation of the leaves of wild garlic, the addition of a surfactant, preferably a high quality non-ionic surfactant with 80 or 90% active ingredients, may increase the retention of the spray solution on the leaves and improve control.

One winter annual weed that has become increasing problematic over the past through years in turfgrass and landscape beds is hairy bittercress. This weed grows in a rosette and is generally not noticed in turfgrass sites until it produces a flower stalk in April/May. Fall or Spring applications of 2,4-D will control emerged bittercress but will not prevent subsequent germination from the soil seed bank. Although an expensive proposition, September applications of Gallery will provide residual control of this weed as well as other winter annuals but not wild Garlic. In landscape beds an early spring application (prior to bittercress flowering) of organic mulch applied at 3 to 4 inches will smother and provide suppression of this weed. More effective control can be obtained with September applications of herbicides such as Snapshot, OH2, or Rout. Always consult the herbicide label to see if all desired plants within the bed are tolerant to these herbicides. All winter annuals can be effectively controlled with non-selective herbicides such as Roundup, but make sure the spray does not contact desired plants. □

Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Turfgrass
Pathology

Pink Snow Mold/Fusarium Patch

Pink snow mold, caused by the fungus *Microdochium nivale* (= *Fusarium nivale*), is present on some greens, tees, and home lawns at this time. This disease was not very common in New Jersey this year due to the limited snow cover and the warmer than usual winter temperatures. Current infections can be controlled with Banner, Chipco 26GT, chlorothalonil, Compass, ConSyst, Curalan, Eagle, Heritage, Insignia, Medallion, Spectro, thiophanate-methyl, Trinity or vinclozolin. For best results next fall, apply any of these fungicides (or PCNB) on a preventive basis in early to mid-November and then repeat in late-January if the snow cover recedes. Do not reapply PCNB after January 15 due to the possibility of phytotoxicity during warm weather.

Yellow Patch

This disease, often referred to as **cool season brown patch**, is apparent on greens and tees at this time. Unlike brown patch which occurs in the summer, **yellow patch** (*Rhizoctonia cerealis*) thrives during cool, wet weather between October and May. Patches are chlorotic and typically range from several inches to three feet in diameter. Patch centers are frequently green, resulting in a "frog-eye" or yellowish ring effect. Although Banner, chlorothalonil, Heritage, Insignia, Medallion, ProStar or thiophanate-methyl are currently the only turf fungicides labeled for the control of this disease, Chipco 26GT has also provided good control of yellow patch when applied for snow mold in tests at Rutgers University. Even without the use of fungicides, however, symptoms generally disappear with a return to regular mowing and warm weather.

Turf Field Day

Mark your calendars now for this year's Rutgers Turfgrass Research Field Days which will be held on July 29, 2008 (Golf and Fine Turf Research Field Day at Horticultural Farm II, New Brunswick, NJ) and July 30, 2008 (Landscape Turf Research Field Day at Adelpia Research Farm, Freehold, NJ). Additional information and directions to each location will appear in future issues of this newsletter. □

Wet Soil Advisory

James A Murphy, Ph.D., Specialist in Turfgrass Management

Editor's Note: This was written 2/28/08, so precipitation amounts have changed since then.

Late winter and early spring maintenance activity on landscapes is about to begin, if it hasn't already. If you have been out and about on landscapes recently, you may have noted that many soils are rather wet - too wet in some cases, especially the further north you are in the state. This is due to the above normal amounts of precipitation that many areas of the state have experienced since November 2007. You can review county rainfall statistics at:

<http://www.state.nj.us/dep/drought/rainfall.html>

Most counties in the northern part of the state have experienced a 26 to 50% above normal departure since late November 2007, except for Sussex which ranks at 51 to 75% above normal. Many counties in central and southern NJ rank in the normal to 25% above normal category. Within the last 30 days, Sussex, Warren and Morris are examples of areas with more than 220% above normal precipitation! Contrast that with Cumberland at 102% of normal and Cape May at 115% above normal.

Therefore, it is important to recognize that there may be challenges for late winter and early spring landscape management due to wet (soft) ground. Municipalities and schools will probably struggle to open sports fields and passive recreational grounds. Any landscapes with excessively wet soil could be seriously damaged if heavy equipment is used or intense play (sporting activity) is allowed.

Landscape contractors, lawn maintenance crews, sports field managers, recreation directors, etc. should inspect areas under their control and close (or keep closed) areas that are saturated (or nearly saturated) until these areas have drained. Persons responsible for grounds need to be aware that these problems could intensify if the current wet weather pattern continues or becomes wetter.

From a longer term perspective, this presents an ideal opportunity to scout landscapes and determine the need and exact location of future drainage works. □

Plant Diagnostic Laboratory Highlights

Richard J. Buckley, Laboratory Coordinator

General Interest

Welcome to the Plant Diagnostic Lab highlights for 2008. The season starts in quite the opposite manner of last year when New Jersey was a frozen tundra for most of the winter. Plenty of warm days and lots of rain have characterized the weather so far. In fact, all New Jersey counties report above average rainfall. Sample submissions are running above average too and on pace with 2002, which had a similar winter weather pattern.

As we move into the growing season, be prepared to deal with plant problems relating to super saturated soils. We already had arborvitae transplants in the laboratory with damage from "wet feet." Of course, plants on poorly drained sites and those in heavy or highly disturbed soils should see the most problems; however, the rain has been heavy enough that we should see our fair share of atypical situations as well.

Last fall we had a run on conifers with **spruce spider mite** and **eriophyid mite** activity. Generally, these mites survive well during warmer winters. Be on the look out for outbreaks of mites as we move into late-April and May.

Lastly in turfgrass, we are just starting to get golf turf samples. All of the samples were simply exhibiting poor growth and color. Soil temperatures are still too low to get anything good going, so be patient. A night in the lab and all of this grass looked spectacular. It is warm, but not that warm yet. □

Pesticide Control Program Compliance Assistance

Nancy Santiago of the New Jersey Department of Environmental Protection Pesticide Control Program (PCP) Worker Protection Unit has announced that the program will be providing **'compliance assistance' inspections from January through March 31, 2008**. This announcement is a follow-up to a notice that private applicators will/have received in the mail from the NJDEP. The content of the two-sided mail insert is provided below as 'Compliance Assistance for Private Pesticide Applicators' and 'Common Compliance Problems'.

This is an opportunity to be inspected without threat of enforcement action under these regulations. Contact Nancy with any questions or to make an appointment for an inspection. She may be reached directly at 609-984-6914, or at the PCP main number at 609-984-6568. □

Rhabdocline and Swiss Needlecasts of Douglas Fir - What's the Difference?

Ann B. Gould, Ph.D., Specialist in Plant Pathology

In general, there are at least 40 needle casts in the United States; most affect pine, spruce, fir, larch, cedar, hemlock, and Douglas-fir. These diseases are caused by fungi that have only one infection period per year; in most cases (but not all), the new growth is infected with the disease agent and is eventually cast from the tree (hence the name) once the infection cycle is complete. Two of these needle casts affect only Douglas-fir: **Rhabdocline needlecast** (caused by the fungus *Rhabdocline pseudotsugae*) and **Swiss needlecast** (caused by the fungus *Phaeocryptopus gäumannii*). Rhabdocline needlecast is well established in New Jersey Christmas tree plantations; incidence of Swiss needlecast, on the other hand, is very low. Still, growers want to know, "what's the difference?"

Disease development is similar, but symptoms and signs are different

Symptoms of Rhabdocline needlecast include the development of red-brown spots that become evident during the winter on one-year needles. A week or two before budbreak, orange fruiting bodies develop on the lower needle surface. When the fruiting structures are mature, they rupture and release abundant spores during wet weather. These spores infect expanding buds. Once these new needles fully elongate and the weather is warm and dry, spores are no longer released, and the older, infected needles are cast from the tree. Symptoms on the newly infected needles do not appear until the following fall or winter, and spores are not produced again until the following spring.

Unlike Rhabdocline needlecast, the fruiting structures produced by the Swiss needle cast fungus consist of rows of very tiny, black fruiting structures emerging through the stomates of the lower needle surface. Needles affected by the disease may turn off color or brown, or may even remain green. Spore release from these fruiting bodies begins at budbreak but can continue until August, and it may be several years before fruiting structures are produced in these infected needles to complete the disease cycle. Once needles are shed, affected branches are thin and trees may be unfit for sale.

Cultural management for these two diseases is similar

- Use healthy stock and provide an optimal growing environment.
- Inspect trees during late winter/early spring and look for symptoms and signs. The pattern of infection will likely follow portions of the canopy or field where moisture in the canopy is most abundant.
- Remove sources of inoculum. For best results, remove old and severely infected trees now. Prune severely affected branches during dry weather.
- Manage the moisture. Choose sites with good air drainage. In existing plantations, reduce humidity and promote rapid drying of needles through spacing and row orientation, and remove weeds.
- Use resistant seed sources when available.

Chemical controls used for Rhabdocline needlecast are also sufficient for Swiss needlecast

For Rhabdocline needlecast, begin sprays of chlorothalonil when the first 10% of the trees in the planting first break bud (or the candles are about 1/2 inch long). Repeat the sprays at 7- to 14-day intervals until needles are fully elongated or conditions are no longer favorable for disease development. Add a spreader sticker to enhance coverage. Other compounds labeled for control include copper (hydroxide, salts, sulfate), mancozeb, Spectro (chlorothalonil + thiophanate-methyl), Stature (mancozeb + dimethomorph; nursery and greenhouse only), and thiophanate-methyl.

For Swiss needlecast management alone, spray chlorothalonil (one application) when candles are 1/2 to 2 inches long. Other labeled compounds include azoxystrobin, mancozeb (2-wk intervals through infection period), Manhandle, Spectro, or thiophanate-methyl. Refer to label for timing and rates. For all fungicides, thorough coverage is essential. □

Introducing New Weather Network

Dave Robinson and Mat Gerbush,
NJ CoCoRaHS Coordinators

We'd like to introduce you to a new weather network that is sure to provide valuable data for a multitude of purposes across the Garden State. Coordinated by the Office of the NJ State Climatologist at Rutgers SEBS/NJAES, CoCoRaHS (Community Collaborative Rain, Hail, and Snow network) is a community-based precipitation observing network.

CoCoRaHS observers are trained to collect high-quality daily precipitation data. Observations are entered onto a web form via the CoCoRaHS website, archived, and displayed on the site for end users that include meteorologists, hydrologists, farmers, and water resource managers. The CoCoRaHS website also allows observers to report hail and intense precipitation events, observations that are immediately relayed to the National Weather Service for use in the issuance of warnings.

CoCoRaHS observations will supplement the wealth of automated data currently collected and displayed via the NJ Weather and Climate Network: <http://climate.rutgers.edu/njwxnet>.

All that is needed to participate in NJ CoCoRaHS is an internet connection, a 4" diameter plastic precipitation gauge, and a ruler for measuring snow. Training is provided for observers, either through online training modules, or preferably, in group training sessions that will be held at several places around NJ over the coming months.

We certainly invite you to become an observer by signing up at:

<http://www.cocorahs.org>. Also, we would like assistance with any of the following:

- 1) volunteer to become a county coordinator, or recommend someone who might fit the bill (coordinators help recruit and retain observers).
- 2) publicize NJ CoCoRaHS within any websites, newsletters or listserves you maintain.

SEE WEATHER ON PAGE 6

New Publication Offers Advice for Farmers On Avoiding Conflicts with Neighbors and Towns

More than 50 farmers share their advice and experiences on how to avoid conflicts and maintain good relationships with neighbors and municipalities in a new publication developed by the State Agriculture Development Committee (SADC).

Rutgers NJAES Cooperative Extension collaborated with the SADC on the publication, along with the New Jersey Department of Agriculture, New Jersey Farm Bureau, and NOFA-NJ, as part of a grant project funded by the Northeast Center for Risk Management Education.

“Although New Jersey has one of the strongest right-to-farm laws in the nation, oftentimes the best right-to-farm protection is knowing how to prevent disputes from happening in the first place,” said Agriculture Secretary Charles M. Kuperus, who chairs the SADC. “Experienced farmers are a great source for advice on how to do that. Therefore, we were pleased to compile many of their suggestions in this new publication so that their fellow farmers may benefit from their advice and lessons learned.”

“*Farmer-to-Farmer Advice for Avoiding Conflicts with Neighbors and Towns*” features a wide range of advice collected from growers during interviews last fall. Underlying the suggestions were several common themes – that maintaining good communication, giving appropriate consideration to neighbors and municipalities, and being actively involved in the community are key to fostering good relationships.

Farmers shared their suggestions anonymously. A sampling of the advice included:

- “It’s important to have built a relationship before a controversial issue arises.” (Fruit and vegetable farmer, Burlington County)
- “When I need to work late, I work late. But when I know I can end early or I know someone’s having a picnic or it’s a holiday, I’ll try to end early.” (Grain farmer, Central Jersey)
- “We try to keep our farm clean and presentable on all borders. (Fruit farmer, Gloucester County)
- “Know your rights but be reasonable and keep an open mind to all sides of an issue. Don’t waste your time over trivial matters that are easily handled. A stubborn farmer is looked at negatively.” (Livestock farmer, Monmouth County)

- “Creating a partnership with the town helps when it comes to complaints. The town may actually get the call first and be able to defuse a potential situation by explaining the issues to the caller.” (Diversified farmer, Somerset County)
- “You’re more than just a farm – you have to act and behave in way that makes others believe you’re an asset to the community and belong in the community.” (Nursery farmer, North Jersey)
- “Just be a good neighbor. That’s all. It’s that simple. Respect your neighbors and they’ll respect you.” (Fruit and vegetable farmer, North Jersey)

As part of the project’s outreach, farmers also discussed their advice and experiences during farmer-panels at several of the winter agricultural meetings, including the State Agricultural Convention, South Jersey Nursery Growers Conference, North Jersey Tree Fruit Meeting, and NOFA-NJ’s Annual Conference. A few farmers also spoke to the current class of the New Jersey Agricultural Leadership Development Program. Later this summer, a panel is planned for the New Jersey Horse Council’s open meeting.

As noted in the publication, the work of building relationships and addressing rural issues falls to more than just farmers. Neighbors and municipalities also must do their part. Collected in the publication, however, are suggestions for what farmers can do – the ideas and risk management strategies described by farmers as working for them.

To request a copy of the new publication, contact the SADC at (609) 984-2504. The publication also can be downloaded from the SADC’s website at: nj.gov/agriculture/sadc/farmersadvice.htm.

For more information, including how to provide feedback on the new publication, visit the SADC’s website above or contact David Kimmel at (609) 984-2504. □

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3) provide us with any thoughts on who else we might contact to spread the word.

Should you wish to receive CoCoRaHS brochures for distribution at any event you might soon attend, please let us know and we’ll gladly get them to you.

Thanks very much for your assistance in helping make NJ CoCoRaHS a success! □

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New Jersey Agricultural
Experiment Station

Plant & Pest Advisory
Rutgers School of Environmental
and Biological Sciences
ASB II, 57 US Hwy. 1
New Brunswick, N.J. 08901

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POSTAGE PAID
PERMIT #576
MILLTOWN, NJ 08850

PLANT & PEST ADVISORY

Landscape, Nursery & Turf Edition Contributors

Rutgers NJAES-CE Specialists and Staff

Bruce B. Clarke, Ph.D., Turf Pathology
Ann B. Gould, Ph.D., Ornamentals Plant Pathology
Steven Hart, Ph.D., Weed Science
Joseph R. Heckman, Ph.D., Soil Fertility
Albrecht Koppenhofer, Ph.D., Turfgrass Entomology
James A. Murphy, Ph.D., Turf Management
Gladis Zinati, Ph.D., Nursery Management
Richard J. Buckley, Coordinator, Plant Diagnostic Laboratory

RCE County Agricultural Agents and Program Associates

Bergen, Joel Flagler (201-336-6780)
Burlington, Raymond J. Samulis (609-265-5050)
Camden, James Willmott (856-566-2900)
Steven Rettke, Program Associate IPM
Cape May, Jenny Carleo (609-465-5115)
Cumberland, James R. Johnson (856-451-2800)
Essex, Jan Zienteck, Program Coordinator (973-353-5958)
Gloucester, Jerome L. Frecon (856-307-6450, ext. 1)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Middlesex, William T. Hlubik (732-398-5260)
Monmouth, Richard G. Obal (732-431-7261)
Morris, Peter Nitzsche (973-285-8307)
Passaic, Elaine F. Barbour, Agric. Assistant (973-305-5740)
Somerset, Nick Polanin (908-526-6293)
Sussex, Brian Oleksak, Program Associate (973-948-3040)
Union, Madeline Flahive-DiNardo (908-654-9854)
Warren, William H. Tietjen (908-475-6505)

Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES
Cindy Rovins, Agricultural Communications Editor

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCE in your County.

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