102ND PLANT SCIENCE DAY

LOCKWOOD FARM, HAMDEN

WEDNESDAY, AUGUST 1, 2012

TABLE OF CONTENTS

HISTORY OF LOCKWOOD FARM, HAMDEN

Lockwood Farm is a research facility of The Connecticut Agricultural Experiment Station. Historically, the farm was purchased in 1910 with monies provided by the Lockwood Trust Fund, a private endowment. The original farm was 19.6 acres with a barn and a house. Since then, several adjacent tracts of land were purchased, enlarging the property to 75.0 acres.

The farm is located in the extreme southern portion of the Central Lowland Physiographic Province. This lowland region is underlain by red stratified sandstone and shale of Triassic age from which resistant lava flows project as sharp ridges. One prominent ridge, observed from the farm, is Mount Carmel, which lies to the north. The mountain is composed of basalt, a dense igneous rock commonly used as a building material and ballast for railroad tracks.

The topography of the farm is gently rolling to hilly and was sculpted by the Wisconsin glacier that overrode the area some 10,000 years ago and came to rest in the vicinity of Long Island. A prominent feature of the farm is a large basaltic boulder that was plucked from Sleeping Giant by the advancing glacier and came to rest on the crest of a hillock to the south of the upper barns. From this hillock, Sleeping Giant State Park comes into full view and is a favorite spot for photographers and other artists.

The soils of the farm developed on glacial drift are composed primarily of the underlying reddish-brown sedimentary rocks. The soils, characterized by reddish-brown profiles, are the well-drained Cheshire fine sandy loam (67%), the moderately well-drained Watchaug loam (10%) and the shallow-to-bedrock Sunderland fine sandy loam (16%). Along the western edge of the farm, adjacent to the Farmington Canal Greenway, lies a level terrace of stratified glacial drift. There, the well-drained Branford loam and the moderately well-drained Ellington loam (7%) dominate. Elevations on the farm range from 140 to 220 feet above mean sea level.

The farm lies in the Coastal Plain Climatological District. The local climate is influenced by its proximity to Long Island Sound, which lies 9 miles to the south. The average frost-free season is 190 days, compared to 180 days at the inland Valley Laboratory in Windsor.

In 1936, a fully instrumented weather station was established on the farm. The weather data are reported to and published by the U.S. Weather Service in their cooperative observer program. The mean annual temperature for the farm is 49.0 F. A record high temperature, 104.0 F, was observed on July 4, 1949. A record low temperature, -24.0 F was recorded on February 16, 1943. The mean annual precipitation for the farm is 52.6 inches. The greatest total precipitation, 74.36 inches, was recorded in 2011. The least precipitation, 30.4 inches, was recorded in 1965. The mean annual snowfall for the farm is 32.3 inches. The greatest total snowfall, 78.5 inches, was recorded during the winter of 1995-1996. The least total snowfall, 10.0 inches, was recorded in 2011-2012.

The farm provides a field laboratory for many Experiment Station scientists who learn how to control the pathogens and insects that attack trees, fruit, and vegetables. In some experiments, scientists learn how crops grow and develop strategies for efficient crop production. All field research can be observed at Plant Science Day, held on the first Wednesday in August.

CENTURY FARM AWARD

The Century Farm Award is given to a farm that has been in family operation for more than 100 years. The recipient is selected by the Connecticut Agricultural Information Council.

Futtner's Family Farm, LLC
East Hartford, Connecticut

Futtner's Family Farm, LLC, located in East Hartford, Connecticut, began in 1890. Now in its fourth generation, the farm is currently managed by James and Honora Futtner. Jim's great-grandparents came to the United States from Italy in 1880 on their honeymoon. Ten years later, they purchased their first parcel of land (13.88 acres). There were numerous land transactions thereafter, including property that is now part of I-84. Crops are grown on about 25 acres, including land in South Windsor, Connecticut.

There is a long history of greenhouse and vegetable production. A variety of crops, including sweet corn, melons, squash, lettuce, cabbage, potatoes, and carrots, have been sold in retail and wholesale markets. Today, the farm includes a popular Pick-Your-Own operation for tomatoes, peppers, and eggplant. A roadside stand operates 7 months of the year. High quality annuals, perennials, herbs, hanging baskets, rose bushes, and patio pots are also sold.

The Futtner family is dedicated to its customers, agricultural industry, and community interests. Jim serves on the South Windsor Agricultural Land Preservation Advisory Commission. Honora was a director for the first 3 years of the Connecticut Farmland Trust. A community supported agricultural program is active. Extra produce is donated to Foodshare in Hartford.

As Governor, I am pleased to join The Connecticut Agricultural Experiment Station and the Connecticut Agricultural Information Council in presenting this Century Farm Award to the Futtner family, who is most deserving of this honor.

THE SAMUEL W. JOHNSON MEMORIAL LECTURE (Main Tent)

The Experiment Station Board of Control established the lectureship to further discuss issues of concern to Connecticut residents and the Station. Professor Johnson was director of the Experiment Station from 1877 to 1900 and a leader in the establishment of American agricultural experiment stations.

ANSWERS TO YOUR QUESTIONS (Plot 27)

Staff members in the "question and answer" tent are prepared to give information on identification of insects, plant disorders, soils and their management, and other problems of growers and gardeners.

PASSPORT FOR CHILDREN (Plot 35)

This is a special event for children to enjoy and explore Plant Science Day. There are six different stations located throughout Lockwood Farm that they can visit and receive a special stamp for their passport. Once the passport is filled, they can go to the Kid's Korner table (Plot 35) and receive a prize. Brownies can use this to earn the "Plants Try-It!" Once the passport is complete, they can go to the Girl Scouts of America table (Plot 36) to collect their "Try-It!"

ACTIVITY FOR OLDER CHILDREN (Plot 36)

A self-guided worksheet is available for all children. The activity will guide you to interact with some of the many people here today helping to put science to work for society. In addition, Girl Scouts may use the activity to earn a junior badge, a program patch for all levels, or complete steps towards their Journey Awards. Please visit the Girl Scouts of America table for details (Plot 36). All children will receive a prize when they visit the Kid's Korner table (Plot 35).

CONNECTICUT PESTICIDE CREDITS (Registration, R)

Connecticut pesticide credits will be offered for attending Plant Science Day. If you are interested in obtaining pesticide credits, you must sign in at the registration desk (R) at the start of the day, between 9:30 a.m.-10:00 a.m., collect signatures for the talks, demonstration, and tours you attended, and sign out to pick up your pesticide credit form at 3:30 p.m. at the registration desk (R).

Connecticut Pesticide Credits Offered: **ALL CATEGORIES and Private Applicators (PA) / 4 Credit Hours**

Keep current with The Connecticut Agricultural Experiment Station by using our E-ALERT and SOCIAL MEDIA resources.

Come and join us.

E-ALERT—The Connecticut Agricultural Experiment Station (CAES) E-ALERT service—We are inviting you to subscribe to our free E-ALERT e-mail service to receive CAES news updates by e-mail. Go to our website at www.ct.gov/caes and scroll to the bottom left hand corner of our page to get started. 

. Once you have created your CT.gov profile you can now subscribe to our e-alerts.

SOCIAL MEDIA—We are also on

Facebook (www.facebook.com/CT.CAES),

Twitter (www.twitter.com/CT_CAES),

YouTube (www.youtube.com/user/CTAGEXPSTATION), and

(http://en.wikipedia.org/wiki/Connecticut_Agricultural_Experiment_Station)

VISIT OUR WEBPAGE AT: WWW.CT.GOV/CAES

NO PETS, PLEASE. SERVICE ANIMALS ONLY.

JUST A REMINDER THAT LOCKWOOD FARM IS A WORKING FARM WITH ACTIVE RESEARCH BEING CONDUCTED, SO PLEASE RESPECT THE SCIENTISTS' WORK.

After the lecture, visitors may remain in the main tent for lunch. Coffee and cold drinks are free.

102nd PLANT SCIENCE DAY

Doors open at 9:30 a.m.
Program begins at 10:00 a.m.
Event 10:00 a.m. – 4:00 p.m.

AGENDA

10:00 a.m.–10:15 a.m **MORNING GREETING**
Dr. Sharon M. Douglas, Chief Scientist
Head Department of Plant Pathology & Ecology

10:00 a.m.-10:20 a.m. **TECHNICAL DEMONSTRATION TENT**
Ms. Mary K. Inman, Technician, Department of Plant Pathology and Ecology
Pruning Ornamental Shrubs
(20-minute demonstration, repeated twice during the day, 10:00 a.m. & 2:45 p.m.)
Pruning is probably one of the least understood and most daunting landscape maintenance practices for most homeowners. However, armed with an understanding of the basic principles of pruning and the proper tools, the home gardener can readily prune ornamental woody shrubs and small trees. This discussion will cover reasons for pruning, timing, techniques, and equipment.

10:15 a.m.-10:45 a.m. **MAIN TENT**
Dr. Brian D. Eitzer, Analytical Chemist, Department of Analytical Chemistry
Honey Bees and Pesticides: Recent Research on Toxicity and Routes of Exposure
Honey bees are an essential part of our agricultural system, pollinating crops worth billions of dollars. One of the threats to honey bees is the use, or, misuse of pesticides. Questions persist about how honey bees get exposed to pesticides, and, how toxic are the pesticides at the levels of exposure typically encountered by a honey bee. This talk will discuss some of the recent research in these areas both at CAES and as reported in the scientific literature.

10:45 a.m-11:15 p.m. **MAIN TENT**
Dr. Sandra L. Anagnostakis, Mycologist, Department of Plant Pathology and Ecology
New Disease Threats for our Trees
Three new diseases are moving in our direction. Oak Wilt, Bacterial Leaf Scorch, and Thousand Cankers Disease are now in nearby states and we are watching for symptoms to keep them from becoming a problem here. The Oak Wilt fungus is a serious threat in the southern and central U.S., but has not yet been documented in CT. Infections spread easily from tree to tree through the roots and kill thousands of oaks each year. Bacterial Leaf Scorch is carried by leaf-feeding insects, and causes a slow decline and eventual death of several species of shade trees, particularly. The Thousand Cankers Disease fungus was first discovered on black walnut trees in Colorado, and has now been found in several eastern states. Carried into the stems by multiple beetle attacks, the fungus makes thousands of small cankers that girdle the tree resulting in rapid death. Several of the walnut species are susceptible. Experiment Station scientists keep all of these problems in mind when working in the woods, to safeguard our trees.

10:30 a.m.-10:50 a.m. **TECHNICAL DEMONSTRATION TENT**
Mr. Richard M. Cecarelli, Research Farm Manager, Lockwood Farm
Mulching Basics
(20-minute demonstration, repeated twice during the day, 10:30 a.m. & 3:10 p.m.)
There are many benefits from applying mulch to flower beds and around trees. There are many different types and colors of mulch to choose from. If applied properly, mulches are a great addition to the landscape. If applied improperly, mulch can have detrimental effects on the plant material in the landscape. This demonstration will show proper techniques of applying mulch and discuss the different types that are

available. Improper techniques will be discussed along with why they can be harmful to the plants and trees in the landscape.

11:15 a.m.–11:30 a.m. **GREETING AND DIRECTOR'S REPORT**
Dr. Louis A. Magnarelli, Director

11:30 a.m.–11:50 a.m. **CENTURY FARM AWARD**
Futtner's Family Farm, LLC, East Hartford, CT

11:50 a.m.–11:55 a.m. **EXPERIMENT STATION ASSOCIATES**
Mr. Richard Bergmann, *President*
Experiment Station Associates

11:55 a.m. – 12:30 a.m. **THE SAMUEL W. JOHNSON MEMORIAL LECTURE**
Ms. Joan Nichols, *Connecticut Certified Forester & President of the Connecticut Professional Timber Producers Association, Inc.*
"The Connecticut Forest Products Industry: Reflections on the Past, Outlook for the Future"

1:30 p.m.-2:00 p.m **MAIN TENT**
Dr. Carole A. Cheah, Entomologist, Department of Entomology
Biological Control of Mile-A-Minute Weed
Mile-a-minute weed (MAM), *Persicaria perfoliatum*, an invasive, annual vining species from Asia, poses a serious threat to native vegetation diversity and forest regeneration. The plant is difficult and costly to control due to its prolific seed production and rampant growth. It was first discovered in Greenwich in 2000 and has now spread to 25 Connecticut towns. While localized populations of MAM can be controlled with mechanical and chemical means, biological control remains the long-term potential solution to managing MAM spread and limiting its damaging impact. A tiny host specific weevil, *Rhinoncomimus latipes*, was collected from MAM in central China and first introduced into Connecticut in 2009 as part of the national program for MAM biological control. The implementation and progress of this program in Connecticut will be presented.

2:00 p.m-2:30 p.m. **MAINT TENT**
Dr. Jeffrey S. Ward, Station Forester, Department of Forestry and Horticulture
Running Bamboo (*Phyllostachys *spp.) in Connecticut
Running bamboos (*Phyllostachys* spp.) are 15-30 foot tall perennials with canes ranging in color from golden yellow to green to almost black. Properly planted with deep root barriers, they can form a gracefully elegant garden focal point or living hedge that is resistant to deer browse. However, without proper root barriers, they can become a nuisance to neighboring properties and form impenetrable thickets in natural areas. We began an experiment this year on our three experimental farms to examine the rate of spread and effectiveness of control options for selected *Phyllostachys* cultivars in Connecticut.

2:30 p.m. **MAIN TENT**
Adjourn Main Talks

2:45 p.m.-3:05 p.m. **TECHNICAL DEMONSTRATION TENT**
Ms. Mary K. Inman, Technician, Department of Plant Pathology and Ecology
Pruning Ornamental Shrubs
(20-minute demonstration, repeated twice during the day, 10:00 a.m. & 2:45 p.m.)
Pruning is probably one of the least understood and most daunting landscape maintenance practices for most homeowners. However, armed with an understanding of the basic principles of pruning and the proper tools, the home gardener can readily prune ornamental woody shrubs and small trees. This discussion will cover reasons for pruning, timing, techniques, and equipment.

3:10 p.m.-3:30 p.m. **TECHNICAL DEMONSTRATION TENT**
Mr. Richard M. Cecarelli, Research Farm Manager, Lockwood Farm
Mulching Basics
(20-minute demonstration, repeated twice during the day, 10:30 a.m. & 3:10 p.m.)
There are many benefits from applying mulch to flower beds and around trees. There are many different types and colors of mulch to choose from. If applied properly, mulches are a great addition to the

landscape. If applied improperly, mulch can have detrimental effects on the plant material in the landscape. This demonstration will show proper techniques of applying mulch and discuss the different types that are available. Improper techniques will be discussed along with why they can be harmful to the plants and trees in the landscape.

3:30 p.m. **TECHNICAL DEMONSTRATION TENT**
Adjourn Technical Demonstrations

PESTICIDE CREDIT TOUR
(Meet at the Registration Desk, R)
12:15 p.m.-1:15 p.m.

12:15 p.m. **MEET AT REGISTRATION DESK (R) Dr. Robert E. Marra, Plant Pathologist, Department of Plant Pathology and Ecology**
A one-hour guided tour of selected field plots will be conducted by Dr. Robert E. Marra, Plant Pathologist, Department of Plant Pathology and Ecology. Participants can discuss experiments and topics with scientists at each station on the tour.

Stops on tour:

- ***Dr. Richard Cowles, Entomologist, Valley Laboratory***
  - *Spotted Wing Drosophila Management*
  - (Plot 45)
- ***Dr. Chris Maier, Entomologist, Department of Entomology***
  - *Invasive Insects in Connecticut*
  - (Plot 29)
- ***Dr. James LaMondia, Plant Pathologist, Valley Laboratory***
  - *Management of boxwood blight, a new disease of the Buxaceae in Connecticut and the U.S.*
  - (Plot 40)

3:30 p.m. SIGN-OUT (for those requesting pesticide credits) (R)
Attendees pick up Pesticide Credit forms at the registration table (R).

LOCKWOOD FARM WALKING TOUR
(Meet at the Registration Desk, R)
2:15 p.m.–3:15 p.m.

2:15 p.m. **MEET AT REGISTRATION DESK (R) Dr. Robert E. Marra, Forest Pathologist, Department of Plant Pathology and Ecology**
A one-hour guided tour of selected field plots will be conducted by Dr. Robert E. Marra, Forest Pathologist, Department of Plant Pathology and Ecology. Participants can discuss experiments and topics with scientists at each station on the tour.

2:15 p.m. – 3:15 p.m. **WALKING TOUR**, Approximately ½ mile, moderately hilly

Stops on Tour:

- **Dr. Sandra Anagnostakis, Mycologist, Department of Plant Pathology and Ecology**
  Chestnut species and Hybrids (Plot 52)
- **Dr. Abigail A. Maynard, Horticulturist, Department of Forestry and Horticulture**
  Beach Plum, Paw-Paw, and Japanese Plum Trials (Plots 58-60)
- **Dr. Sandra Anagnostakis**
  Hybrid Elm Trees (Plot 61)
- **Dr. William Nail**
  Pinot Gris Cultural Trials (Plot 57)

TOUR OF NATIVE WOODY SHRUBS (PLOT 49)

12:30 p.m.–1:00 p.m.

12:30 p.m.-1:00 p.m. **MEET AT THE WOOD ARBOR OF THE NATIVE WOODY SHRUBS (Plot 49)**
Dr. Jeffrey S. Ward, Station Forester, Department of Forestry and Horticulture
A ½-hour guided tour of our native shrub planting to be conducted by Dr. Jeffrey S. Ward, Station Forester and Head, Department of Forestry and Horticulture. Learn about using native shrubs for naturalistic landscapes without the use of pesticides and fertilizers.

BIRD AND BUTTERFLY GARDEN EVENTS (PLOT 50)

ON THE HOUR starting at 10:00 a.m.-3:00 p.m. "Butterfly Identification Walk"

ON THE HOUR
10:00 a.m.-3:00 p.m. **MEET AT THE BIRD AND BUTTERFLY INFORMATION TABLE (Plot 50)**
Mr. Jeffrey Fengler, Department of Entomology
Mr. Jeffrey Fengler will lead a "Butterfly Identification Walk"

PLEASE NOTE: we ask that children be supervised by an adult or employee while in the bird and butterfly garden.

BARN EXHIBITS (BARN B)

Surveillance and Research to Ensure Food and Consumer Product Safety
Department: Analytical Chemistry
Investigators: Dr. Brian D. Eitzer, Dr. Walter J. Krol, Dr. Christina S. Robb, Dr. Roberto De La Torre Roche, and Dr. Jason C. White
Assisted by: Ms. Terri Arsenault, Mr. Craig L. Musante, Mr. William A. Berger, Mr. John F. Ranciato, Ms. Kittipath Prapayotin-Riveros, and Mr. Joseph Hawthorne
Abstract: The Analytical Chemistry Department works with both state and federal partners to ensure that fresh/manufactured foods and consumer products are free from adulteration and safe for Connecticut citizens. Federal partners include the Food and Drug Administration (FDA), Environmental Protection Agency (EPA), Department of Agriculture (USDA), and the Federal Bureau of Investigation (FBI). State partners include the Department of Consumer Protection (DCP), Department of Public Health (DPH), Department of Energy and Environmental Protection (DEEP), and the Department of Agriculture (DoAg). This exhibit provides an overview of four recent programs, including the detection of pesticides in fresh/dried herbs, detection of oil residues in seafood from the Gulf of Mexico, fate of nanoparticles in agricultural crops, and determination of Bisphenol A in plastic containers.

Genes and C4 Photosynthesis
Department: Biochemistry and Genetics
Investigators: Dr. Richard B. Peterson, Dr. Neil P. Schultes, and Dr. Neil A. McHale
Assisted by: Ms. Carol R. Clark and Ms. Regan B. Huntley
Abstract: High-yielding crop plants such as maize, sorghum, and sugarcane use a unique biochemistry to convert carbon dioxide to carbohydrate. Unraveling the genetic basis of C4 photosynthesis could soon be within reach and would pave the way for dramatic increases in agricultural productivity in such staple crops as rice.

Bed Bugs: What We Have Learned and What You Should Know
Department: Entomology
Investigator: Dr. Gale E. Ridge
Abstract: Bed bugs are an increasingly common problem. We are studying the reproduction and behavior of this pest along with the use of a fungus for its control. We will report on these studies as well as on how you can protect yourself from this insect.

DNA Fingerprinting for Incriminating Mosquitoes in Disease Transmission
Department: Environmental Sciences
Investigators: Dr. Goudarz Molaei, Dr. Theodore G. Andreadis, Dr. Philip M. Armstrong, Mr. Michael C. Thomas, and Mr. John J. Shepard
Abstract: Mosquitoes transmit disease agents such as West Nile virus and Eastern Equine Encephalitis virus in Connecticut. We are using DNA fingerprinting techniques to identify blood meal hosts of mosquitoes and assess their roles in disease transmission.

Human Health Threats Caused By Exotic Invasive Japanese Barberry
Department: Forestry and Horticulture
Investigators: Dr. Scott C. Williams and Dr. Jeffrey S. Ward
Assisted by: Mr. Michael R. Short and Ms. Megan Floyd
Abstract: Japanese barberry is an exotic invasive plant that is taking over the forests of Connecticut. Not only does Japanese barberry limit native forest regeneration, but it also fosters increased abundances of black-legged ticks and associated pathogens that cause Lyme disease, babesiosis, and anaplasmosis in humans, pets, and other domesticated animals. This exotic invasive plant needs to be managed to preserve the health of Connecticut's forests and public alike.

Boxwood Blight—A Disease New to Connecticut and the U.S.
Department: Plant Pathology and Ecology
Investigators: Dr. Sharon M. Douglas and Dr. Robert E. Marra
Assisted by: Ms. Mary K. Inman
Abstract: In October 2011, a disease of boxwood called "boxwood blight," caused by the fungus *Calonectria pseudonaviculata* (syn. *Cylindrocladium pseudonaviculatum)*, was identified in Connecticut. This disease has now been detected in 5 counties in CT on boxwood in residential and commercial landscape plantings, production nurseries, and garden centers, as well as in nine other states and two provinces in Canada. The fungus infects all aboveground portions of boxwood causing leaf spots, blights, and stem cankers. This devastating disease can spread very rapidly under warm and humid conditions and result in plant death.

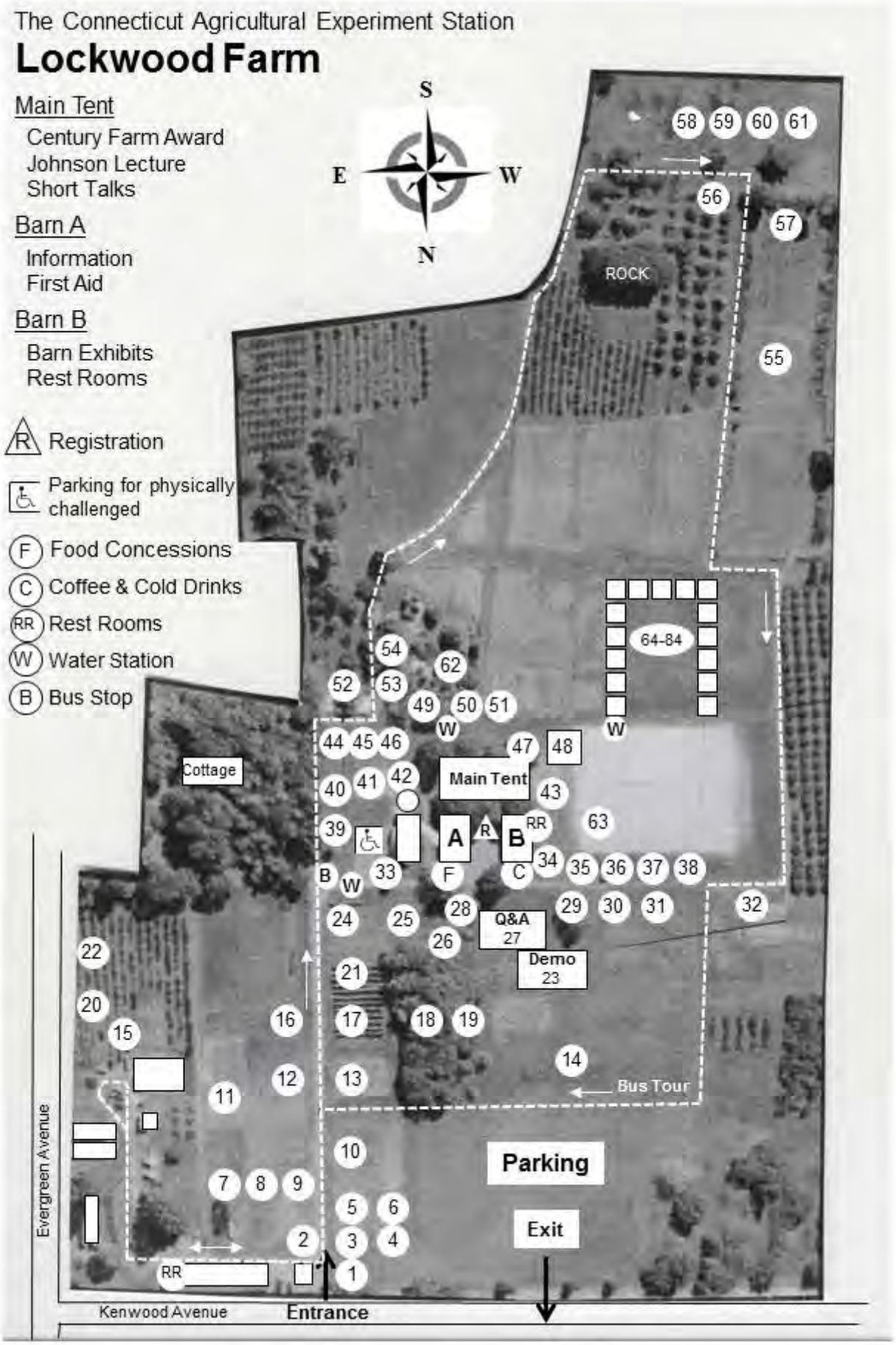
THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION

The experiments exhibited here depict only a portion of the work performed by Experiment Station scientists. In addition to Lockwood Farm, Griswold Research Center, and laboratories in New Haven and Windsor, Station scientists use state forests, private orchards, lakes, and farms for their experiments. Experiments and surveys are conducted in many widely separated towns of the state.

THE EXPERIMENT STATION WEB PAGE: WWW.CT.GOV/CAES

TO RECEIVE A COMPLETE LIST OF STATION SPEAKERS: inquire at the publications table in BARN A, write to: Publications; The Connecticut Agricultural Experiment Station; P.O. Box 1106; New Haven, CT 06504-1106, phone 203-974-8447, fax 203-974-8502, e-mail Vickie.Bomba-Lewandoski@ct.gov, or on the web at http://www.ct.gov/caes/cwp/view.asp?a=2812&q=345128.

TO RECEIVE A COMPLETE LIST OF AVAILABLE EXPERIMENT STATION PUBLICATIONS: Inquire at the publications table in barn A, write to: Publications; The Connecticut Agricultural Experiment Station; P.O. Box 1106; New Haven, CT 06504-1106, phone 203-974-8447, fax 203-974-8502, e-mail Vickie.Bomba-Lewandoski@ct.gov, or on the web at http://www.ct.gov/caes/cwp/view.asp?a=2826&q=378184.


The Connecticut Agricultural Experiment Station
Lockwood Farm
Main Tent
Century Farm Award
Johnson Lecture
Short Talks
Barn A
Information
First Aid
Barn B
Barn Exhibits
Rest Rooms
R Registration
Parking for physically challenged
F Food Concessions
C Coffee & Cold Drinks
RR Rest Rooms
W Water Station
B Bus Stop
S
E
W
N
ROCK
64-84
Cottage
Main Tent
A
B
Q&A
27
Demo
23
Bus Tour
Parking
Exit
Entrance
Evergreen Avenue
Kenwood Avenue

FIELD PLOT LISTING

Outside Organizations (33, 34, 36, 63-84) are invited to participate

1. CHINESE CHESTNUT TREES
2. EDAMAME TRIALS
3. SHEET COMPOSTING WITH OAK AND MAPLE LEAVES
4. SWEET POTATO TRIALS
5. SPECIALTY MELON TRIALS
6. ANNUAL CULTURE OF GLOBE ARTICHOKES
7. BUTTERNUTS AND HEARTNUTS
8. SPECIALTY PEPPER TRIALS
9. SPECIALTY EGGPLANT TRIALS
10. CALABAZA SQUASH SELECTIONS
11. USE OF EARTHWORMS AND BIOCHAR TO SUPPRESS FUSARIUM CROWN ROT OF ASPARAGUS
12. DATING HERBACEOUS ROOTS
13. COMMERCIAL CHESTNUT CULTIVARS
14. NOAA WEATHER STATION
15. REMOTE SENSING WEATHER STATION
16. PHYTOREMEDIATION OF PERSISTENT ORGANIC POLLUTANTS
17. TABLE GRAPE DEMONSTRATION PLOT
18. CONTROL OF BLIGHT ON AMERICAN CHESTNUTS
19. NEW HYBRID CHESTNUT ORCHARD
20. ENVIRONMENTALLY-FRIENDLY CONTROL OF POWDERY MILDEW ON LANDSCAPE PLANTS
21. HYBRID WINEGRAPE CULTIVAR TRIAL
22. CONTROL OF POWDERY MILDEW ON CHARDONNAY GRAPES
23. TECHNICAL DEMONSTRATION TENT
24. COMPARISON OF GRAFT UNION HEIGHT ON CHARDONNAY GRAPEVINES
25. SEEDLINGS OF OLD SURVIVING AMERICAN CHESTNUTS
26. WILD CHESTNUTS FROM TURKEY
27. QUESTION AND ANSWER TENT
28. MOSQUITO TRAPPING AND TESTING PROGRAM FOR WEST NILE AND EASTERN EQUINE ENCEPHALITIS VIRUSES
29. INVASIVE INSECTS IN CONNECTICUT
30. SUDDEN VEGETATION DIEBACK OF CONNECTICUT SALT MARSHES
31. GROWTH AND CONTROL OF NON-NATIVE BAMBOOS (*Phyllostachys* spp)
32. COMPOSTING LEAVES USING THE STATIC PILE METHOD
33. VERIZON TELEPHONE TRANSMISSION SILO

34. THE FARMER'S COW
35. KID'S KORNER TENT
36. GIRL SCOUTS OF AMERICA
37. HANDS-ON CHEMISTRY
38. INVASIVE AQUATIC PLANT PROGRAM
39. BIOLOGICAL CONTROL OF HEMLOCK WOOLLY ADELGID AND MILE-A-MINUTE WEED IN CONNECTICUT
40. MANAGEMENT OF BOXWOOD BLIGHT, A NEW DISEASE OF THE BUXACEAE IN CONNECTICUT AND THE U.S
41. USING LEAF COMPOST IN HOME GARDENS
42. ENVIRONMENTALLY-FRIENDLY CONTROL OF POWDERY MILDEW ON VEGETABLE PLANTS
43. FIDDLEHEAD TRIALS
44. NANOPARTICLE TOXICITY TO AGRICULTURAL PLANTS
45. SPOTTED WING DROSOPHILA MANAGEMENT
46. WASP WATCHERS: CITIZEN SCIENTISTS AT WORK
47. EXPERIMENT STATION ASSOCIATES
48. TICK TENT
    a. LYME DISEASE IN TICKS FROM CONNECTICUT CITIZENS
    b. CHANGES IN ANTIBODY STATUS IN WHITE-FOOTED MICE
    c. THE "DEER" TICK IXODES SCAPULARIS
    d. PROTECT OUR TREES: STOP THE ASIAN LONGHORNED BEETLE AND EMERALD ASH BORER
49. NATIVE WOODY SHRUBS
50. BIRD AND BUTTERFLY GARDEN
51. HERBS AND CUT FLOWERS AS POTENTIAL NECTAR AND POLLEN SOURCES FOR BEES
52. CHESTNUT SPECIES AND HYBRIDS
53. BEES, TREES, AND COMMODITIES: THE SURVEY AND INSPECTION TEAM
54. EASTERN BLUEBIRD *SIALIA SIALIS* NEST BOX TRAIL
55. HYBRID AND VINIFERA WINEGRAPE CULTIVAR TRIAL
56. ROCKY HILL AMERICAN CHESTNUT TREES
57. PINOT GRIS CULTURAL TRIALS
58. BEACH PLUM TRIALS
59. PAWPAW TRIALS
60. JAPANESE PLUM VARIETY TRIALS
61. HYBRID ELM TREES
62. CT NURSERYMEN'S GARDEN
63. SOUND SCHOOL AGRICULTURAL SCIENCE PROGRAM
64. CONNECTICUT PROFESSIONAL TIMBER PRODUCERS ASSOCIATION
65. CONNECTICUT INVASIVE PLANT WORKING GROUP

66. CONNECTICUT DEPARTMENT OF LABOR / CONN-OSHA
67. CONNECTICUT HORTICULTURAL SOCIETY
68. CONNECTICUT FARMLAND TRUST
69. CONNECTICUT FARM BUREAU ASSOCIATION
70. CONNECTICUT ENVIRONMENTAL COUNCIL
71. CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION: DIVISION OF FORESTRY
72. CONNECTICUT DEPARTMENT OF AGRICULTURE
73. 14TH CIVIL SUPPORT TEAM (WMD)
74. CONNECTICUT NORTHEAST ORGANIC FARMING ASSOCIATION
75. USDA, ANIMAL, AND PLANT HEALTH INSPECTION SERVICE, PLANT PROTECTION AND QUARANTINE
76. buyCTgrown
77. USDA NATURAL RESOURCES CONSERVATION SERVICE
78. CONNECTICUT TREE PROTECTIVE ASSOCIATION
79. UNITED STATES DEPARTMENT OF LABOR/OSHA
80. UCONN MASTER GARDENER PROGRAM
81. CONNECTICUT GREEN INDUSTRIES
82. FRIENDS OF BROOKSVALE PARK, INC.
83. ELM CITY MARKET
84. CONNECTICUT AGRICULTURAL EDUCATION FOUNDATION

FIELD PLOT ABSTRACTS

The plots at Lockwood Farm are planted and maintained by scientists at The Connecticut Agricultural Experiment Station (CAES) with the extensive help of Farm Manager Richard Cecarelli and his assistants, Rollie Hannan, Michael McHill, Anthony DelCervo, Cheryl Remetz, Peter Stevenson, and James Strange.

1. CHINESE CHESTNUT TREES

S. Anagnostakis *assisted by* P. Sletten

These Chinese chestnut trees, planted by Donald Jones in 1941, were selected by chestnut grower W.C. Deming of Litchfield and grafted by the Hartford Park Department. The second tree from the gate is a graft of the cultivar Bartlett that was developed by the Bartlett Tree Co. in Stamford. All have been used by the CAES and the American Chestnut Foundation in crosses with American chestnut trees to produce blight-resistant forest and orchard trees.

2. EDAMAME TRIALS

A. Maynard and D. Hill

Specialty varieties of soybeans known as Edamame are harvested in the green stage. The word "edamame" means "beans on branches" and it grows in clusters on bushy branches. Edamame is consumed as a snack, a vegetable dish, used in soups or processed into sweets. As a snack, the pods are lightly boiled in salted water, and then the seeds are squeezed directly from the pods into the mouth with the fingers. Outside East Asia, edamame is most often found in Japanese restaurants and some Chinese restaurants, but it has also found popularity elsewhere as a healthy food item. We are conducting cultivar trials here and at our Valley Laboratory in Windsor. Cultivars will be evaluated on yield and quality. Last year, 'Sunrise' (1.3 lbs/plant) and 'Mojo Green' (1.2 lbs/plant) were the highest yielding cultivars.

3. SHEET COMPOSTING WITH OAK AND MAPLE LEAVES

A. Maynard and D. Hill

Many homeowners have a predominance of oak trees in their backyards. Oak leaves are known to be more resistant to decomposition than maple leaves. This experiment is investigating whether this difference in the rate of decomposition leads to decreased yields in soils amended with oak leaves compared to maple leaves and unamended controls. Oak and maple leaves that were not yet decomposed were layered about 6 inches thick in the falls of 1995-2011 and incorporated into the soil by rototilling. Last year, lettuce, eggplant, and onions were grown with all plots receiving the same amount (1300 lb/A) of 10-10-10 fertilizer. Yields from plots amended with oak leaves were compared to plots amended with maple leaves and the unamended controls. In 2011, lettuce yields from plots amended with maple leaves had the greatest yields (1.6 lbs/head) compared to yields from the plots amended with oak leaves (1.1 lbs/head) and the unamended control plots (1.0 lbs/head). The greatest eggplant yields were from plots amended with oak leaves (15.5 lbs/plant) followed by plots amended with maple leaves (15.1 lbs/plant) and the unamended control plots (14.3 lbs/plant). The greatest onion yields were from the plots amended with oak leaves (8.6 lbs/10 ft row) followed by the control plots (7.9 lbs/10 ft row) and plots amended with maple leaves (6.6 lbs/10 ft row).

4. SWEET POTATO TRIALS

A. Maynard and D. Hill

A 1998 Connecticut Department of Agriculture survey showed that sweet potato is one of the most popular specialty vegetables. In the South, the sweet potato is also called yam, but both are identical species. In the United States, North Carolina and Louisiana are the leading producers, but we have found that they can easily be grown in Connecticut. In this trial, we are looking at several cultivars that have short maturities (90 days). The cultivars will be evaluated on yield and quality. Last year, 'O'Henry' and 'Beauregard' averaged the greatest yields (3.8 lbs/plant) with both 'Evangeline' and 'Carolina Ruby' averaging 3.0 lbs/plant.

5. SPECIALTY MELON TRIALS

A. Maynard and D. Hill

Specialty melons may be defined as members of the cucurbit family whose fruit may be large, have unique flavors, and command a high price in the marketplace. In commercial trade, specialty melons are often referred to as "mixed melons" and include canary, Crenshaw, casaba, Christmas, and Persian melons. This trial, which is also repeated at the Valley Laboratory in Windsor, is evaluating the yield and quality of eleven cultivars of specialty melons. Included in the trials are three galia cultivars, two canary cultivars, two Crenshaw cultivars, and one charentais cultivar. Three honeydew cultivars are also included because they also demand higher prices in the marketplace compared to cantaloupe.

6. ANNUAL CULTURE OF GLOBE ARTICHOKES

A. Maynard and D. Hill

Connecticut lies at the center of one of the largest artichoke-eating populations in the United States. Fully 40% of California's crop is sold through regional markets from New York to Boston. Annual production of artichokes is triggered by use of vernalization (cool, moist treatment). The cultivar 'Green Globe' requires 500-600 cumulative hours of below 50F temperatures to induce budding compared to the cultivar 'Imperial Star' which needs only 250 hours of cool temperatures. Plants are mulched to keep the soil cool and to prevent reversal of the vernalization.

7. BUTTERNUTS AND HEARTNUTS

S. Anagnostakis *assisted by* P. Sletten

Seedling butternut (*Juglans cinerea*) and heartnut (*J. ailantifolia*, Japanese walnut) were planted here in 2008 to test their resistance to the serious diseases that are eliminating American butternuts from their habitat. Most of the "butternut" trees in Connecticut that we have examined are, in fact, hybrids of butternut with heartnut, including the former National Champion Butternut in Chester, CT. These small trees grew from seed collected in North Carolina, and have been checked for species as well as tested for disease resistance.

8. SPECIALTY PEPPER TRIALS

A. Maynard and D. Hill

Specialty peppers include both hot and sweet varieties of unusual shape, size, or color. Colored peppers have extra flavor, nutrition, and aesthetic appeal, and therefore command a higher market price. Most colored peppers are obtained by leaving the fruits on the bush until they reach mature color (e.g., red, yellow, orange). Others, such as banana pepper, are pale yellow even when immature. Green bell peppers are high in vitamin C (one medium green bell pepper contains 177 percent of the RDA for vitamin C). As they mature and sweeten (turn color), the vitamin A content rises 9-fold while the vitamin C content doubles. This trial, which is also repeated at the Valley Laboratory in Windsor, is evaluating the yield and quality of 10 colored sweet bell pepper cultivars. Last year, 'Early Sunsation' (yellow) had the greatest yields (8.8 lbs/plant) followed by 'Chablis Hybrid' (red) (8.4 lbs/plant) and 'Lilac Hybrid' (Lavender) (7.7 lbs/plant).

9. SPECIALTY EGGPLANT TRIALS

A. Maynard and D. Hill

Eggplants are a botanically diverse group that can be divided into two groups based on fruit shape and color. The first group and more traditional type is the teardrop-shaped, large-fruited eggplant. The second group is collectively referred to as the "specialty" eggplants. Fruit shapes of specialty eggplants vary but are often long and smooth, ball- or bell-shaped. Fruit colors widely range from white, to green, to purplish black, to purple. Japanese and Chinese eggplants tend to be long and thin, looking like purple fingers. White, green, and striated versions of these cultivars are also available. Thai eggplants, on the other hand, are more spherical, and also display a range of colors. Thai eggplant can also be very small, with one version looking remarkably like a chicken egg. Asian eggplants are used extensively in Oriental cuisine, but can also be used in Western dishes. They are sweet and tender, in contrast to traditional eggplant which has a slightly bitter flavor. This trial, which is also repeated at the Valley Laboratory in Windsor, is evaluating the yield and quality of 10 specialty eggplant cultivars. Last year, 'Hansel' (19 lbs/plant) had the greatest yields followed by 'Calliope' (16 lbs/plant), 'Fairy Tale' (15 lbs/plant), and 'Gretel' (12 lbs/plant).

10. CALABAZA SQUASH SELECTIONS

A. Maynard and D. Hill

Calabaza squash, also known as tropical pumpkin, is mostly grown in tropical and semi-tropical climates. Calabaza is highly prized by consumers of Hispanic origin. It was identified by the Connecticut Department of Agriculture as one of the most sought-after vegetables at Connecticut's 124 farmers' markets. We are developing a cultivar that produces fruit on shorter vines by saving seeds from plants that have produced fruit within 2 feet of the plant. These seeds are planted and selections are again made. Fruit that mature on short vines is appealing to northern growers because the majority of the fruit can mature before frost. Fruit that form on longer vines do not always reach maturity before frost. In 2011, 83% of the plants produced fruit within 2 feet of the plant. This year, we are comparing fruit from our short-vined selected plants to fruit from the typical long-vined 'La Estrella' cultivar.

11. USE OF EARTHWORMS AND BIOCHAR TO SUPPRESS FUSARIUM CROWN ROT OF ASPARAGUS

W. Elmer a*ssisted by* P. Thiel

Greenhouse trials have shown that when earthworms were added to pots filled with soil infested with Fusarium pathogens, asparagus plants had less disease and were larger than the pots not amended with earthworms. Biochar, a fine ground charcoal product that has a high absorptive capacity, also has been shown to suppress the asparagus disease in the greenhouse. These plots were designed to study the role of earthworms and biochar alone and in combination to determine their effect on asparagus under field conditions.

12. DATING HERBACEOUS ROOTS

J. S. Ward *assisted by* M. Ferreira

While it is commonly known that growth rings can be used to determine tree ages, recent European research has found that roots of many herbaceous garden plants and wildflowers also have annual growth rings. Determining the age of herbaceous plants could be useful for aging crime scenes such as clandestine graves, determining the rate of spread of invasive species, and studying natural succession. In 2012, we began an experiment to determine which species commonly found in North American gardens and forests have root systems with annual growth rings.

13. COMMERCIAL CHESTNUT CULTIVARS

S. Anagnostakis *assisted by* P. Sletten

These grafted trees are commercial cultivars of orchard chestnut trees. Included is 'Colossal' (Japanese X European) which is the most frequently planted commercial cultivar in the U.S., with large acerages on the west coast. Cultivar 'Bouche de Betizac' (also Japanese X European) is a more consistent nut producer. Cultivar 'Eaton' is a Chinese X (Japanese X American) released by CAES. We are evaluating the potential of these commercial cultivars of chestnut trees for Connecticut. The paper bags on the trees cover hand-pollinated flowers from this year's crosses.

14. NOAA WEATHER STATION

We are a participant in the National Oceanic and Atmospheric Administration's (NOAA) Cooperative Weather Observer Network. It is the nation's largest and oldest weather network. We have been making observations since 1936. The network was established under the Organic Act of 1890 to formalize the collection of meteorological observations and establish/record climate conditions in the United States – primarily for agricultural purposes. Many people recorded weather observations long before that time. John Campanius Holm's 1644-45 weather records, for example, are the earliest known climate records in the United States. Subsequently, many others –including George Washington, Thomas Jefferson, and Benjamin Franklin, also maintained weather records. Today, more than 11,000 Cooperative Weather Observations across the United States donate more than one million hours each year to collect daily hydro-meteorological data. The network of 11,000 volunteer weather observers are located at non-airport locations where people live, work, play and grow their food (i.e. locations include urban, suburban and rural areas, farms, mountaintops, national state and local park settings).

15. REMOTE ACCESS WEATHER STATION

F.J. Ferrandino

Remote-access weather stations are deployed at the three experimental farms operated by CAES. These farms are Lockwood Farm (here), The Valley Laboratory in Windsor, and the Griswold Research Center in Griswold. The cumulative precipitation, growing degree days (GDD), frost events, and disease-risk assessments are recorded and/or calculated from the data collected. These results are made available to growers on a weekly basis by direct e-mails and by posting on the CAES website (https://www.hobolink.com/s/d0696313715dd96f86b25f3552cc1f47).

16. PHYTOREMEDIATION OF PERSISTENT ORGANIC POLLUTANTS

J.C. White *assisted by* W. Berger, J. Hawthorne, and T. Arsenault

Phytoremediation is a novel technique in which plants are used to remove inorganic and organic pollutants from contaminated soils. The plant species used depends very much on the pollutant. Some effective plants have been found for heavy metals such as arsenic and cadmium, as well as for organic solvents such as trichloroethylene. Persistent organic pollutants (POPs) such as DDT/DDE, chlordane and PCBs are much more problematic. Phytoremediation research at the CAES has focused on developing a plant-based remedial approach for these and other recalcitrant organic contaminants. We have previously shown that cucurbits such as zucchini and pumpkin can accumulate large quantities of DDE and chlordane in their roots and stems. Current experiments are investigating the role of transport proteins such as aquaporins in controlling this process.

17. TABLE GRAPE DEMONSTRATION PLOT

W. Nail *assisted by* J. Bravo and N. Petrochko

The row to the south and the two rows to the north of the hybrid winegrape trials consist of the seedless table grapes Canadice and Vanessa (red), Himrod (green), and Jupiter (black). The vines were planted in 2006 and bore their first (small) crop in 2008, with full crops since. Each row is trained to a different training system: Vertical Shoot Positioning, Hudson River Umbrella, and Smart-Dyson.

18. CONTROL OF BLIGHT ON AMERICAN CHESTNUTS

S. Anagnostakis *assisted by* P. Sletten

These American chestnut trees were planted in 1976 when they were 3 years old. Chestnut blight cankers were treated for 4 years, from 1978 to 1981, with our biological control using hypovirulent strains of the blight fungus. The control is working well to keep the

trees alive and fruiting. Some of the trees are growing better than others. We do not know which trees were from seed collected in Wisconsin and which were from Michigan. It is possible that the difference in their ability to thrive in the presence of blight and hypovirulence indicates genetic differences in resistance. The grafted tree in the center of the east row is from an "American" chestnut in Scientist's Cliffs, MD, and the original tree resisted blight for many years (it may be a European hybrid). It definitely has some resistance, and is the best looking tree in the plot. Two grafted trees at the southeast corner are (*Chinese* X *American*) X *American* (cultivar 'Clapper') and have intermediate resistance to blight.

19. NEW HYBRID CHESTNUT ORCHARD

S. Anagnostakis *assisted by* P. Sletten

These trees are from some of our hand-pollinated crosses done in previous years, and were planted as seedlings. All are hybrids of American chestnut trees and blight-resistant Chinese, Japanese, or hybrid trees. They will be grown to evaluate their blight resistance in the presence of the biological control that we assume will move over from the adjoining plot. The trees that look most like American chestnut trees and have good blight resistance will be used in future crosses for timber trees. Others will be developed as orchard trees for Connecticut growers.

20. ENVIRONMENTALLY-FRIENDLY CONTROL OF POWDERY MILDEW ON LANDSCAPE PLANTS

F. J. Ferrandino

Many ornamental plants commonly used around Connecticut homes are subject to powdery mildew. This disease is caused by a fungus that grows on the surface of plant tissue giving the foliage a white powdery appearance. The result is relatively unsightly and the fungus weakens infected plants by feeding on the sugar the plant produces and by blocking sunlight, which limits the ability of the plant to produce more sugar. This plot is planted with a number of common perennial landscape plants (lilac, deciduous azalea, bee balm, peony and phlox, rudbeckia, commonly called "black-eyed Susans") which are susceptible to powdery mildew. Environmentally-friendly foliar sprays, including milk (20% in water), Potassium bicarbonate (1% in water) and light horticultural oil (1% in water), will be compared to chemical fungicides in their ability to control the disease.

21. TRIAL OF HYBRID WINEGRAPE CULTIVARS

W. Nail *assisted by* J. Bravo and N. Petrochko

Connecticut's mild, humid growing seasons and cold winters prevent the successful cultivation of many well-known winegrape cultivars. Many varieties fail to ripen properly in most years. Less cold-hardy cultivars suffer extensive damage or death during and after severe winter freeze events. The hybrid cultivars Chambourcin, Seyval, Villard Blanc, and Villard Noir are being evaluated for yield and fruit quality.

22. CONTROL OF POWDERY MILDEW ON CHARDONNAY GRAPES

F. J. Ferrandino

Wine grapes and wineries are a relatively new industry in Connecticut. In the past 15 years, acreage planted to wine grapes has gone from 160 A to 550 A and the number of wineries has gone from 15 to 42, producing about 450,000 gallons of wine valued at between 10-12 million dollars per year. In our climate, powdery mildew has the greatest impact on wine-grape yield of all pathogens and pests. This plot is planted with Chardonnay vines which are prized for the quality of the wine they produce but are very susceptible to powdery mildew. Over the next few years the relation between the onset of powdery mildew and climate will be closely followed in order to attune disease-risk models to our local weather conditions.

23. TECHNICAL DEMONSTRATION TENT

See the program pages 9-10 for a schedule of Technical Demonstrations.

24. COMPARISON OF GRAFT UNION HEIGHT ON CHARDONNAY GRAPEVINES

W. Nail *assisted by* J. Bravo and N. Petrochko

The coldest layer of air during a radiation freeze is immediately above the soil or snow level. By elevating the graft union, the labor and expense of burying the graft union might be avoided. Chardonnay vines, Dijon clone 95 on C3309 rootstock, were transplanted to the vineyard in spring, 2007. Half are of standard grafting height and half have the graft union 26 inches above ground. Dataloggers are placed at each graft union height. Comparisons for yield, fruit quality, and winter damage began in 2009 and will continue through 2012. High grafted vines had significantly higher yields than low grafted vines in 2009.

25. SEEDLINGS OF OLD SURVIVING AMERICAN CHESTNUTS

S. Anagnostakis *assisted by* P. Sletten

In the southern U.S., large surviving American chestnut trees have been found scattered through the range. When we checked the blight fungi in the cankers on these old trees, we found several new kinds of hypovirulence viruses. We believe that these trees have a little more resistance than surrounding trees, which all died of blight, and that allowed viruses from other fungi in the area to infect the blight fungus. The American Chestnut Cooperators Foundation (www.ppws.vt.edu/griffin/accf.html) has been collecting cuttings

from these survivors and grafting them together in orchards where they can cross with each other. This will allow any resistance genes present in individuals to be joined together in the resulting seedlings. The ACCF sent us this collection of seedlings that we have inter-planted with seedlings from crosses of American trees here at Lockwood Farm. We will compare their winter hardiness and blight resistance with that of the European chestnut trees from Turkey and the old American chestnut trees north of them.

26. WILD CHESTNUTS FROM TURKEY

S. Anagnostakis *assisted by* P. Sletten

These seedling trees are from six wild populations along the Black Sea in Turkey. Those from the eastern border are near the population in the Caucasus Mountains, where European chestnuts (*Castanea sativa*) survived the ice ages, and are genetically quite diverse. Those from the western border are much less diverse. We are growing these here to compare their winter hardiness and resistance to chestnut blight disease with that of American chestnut trees and with the seedlings from "old survivors" planted next to them.

27. QUESTION AND ANSWER TENT

Y. Li, R. Hiskes, M. Inman, T. Mervosh, and G. Ridge

This is a great opportunity to ask the experts about growing plants, testing soil, and identifying plants, plant diseases, and insects. Bring samples of soil, symptomatic plants, and insects for testing and identification. Visit the displays and pick up fact sheets about current insect and disease problems.

28. MOSQUITO TRAPPING AND TESTING PROGRAM FOR WEST NILE AND EASTERN EQUINE ENCEPHALITIS VIRUSES

T. Andreadis and P. Armstrong a*ssisted by* J. Shepard, M. Thomas, S. Finan, E. Calandrella, L. Chong, J. Dickman, S. Fayer, T. Hannon, M. Hiss, M. Olsen, G. Piscitelli, S. Thibodeau, D. Velez, and R. Wright

West Nile and Eastern Equine Encephalitis viruses are firmly established in Connecticut and continue to be significant public health and veterinary threats with annual re-emergence throughout the state. The surveillance and research activities undertaken by scientists at the Center for Vector Biology & Zoonotic Diseases of the CAES are integral to the public health response to these mosquito-borne viruses in Connecticut and have provided critical information on the epidemiology of the viruses and the ecology of the mosquito vectors in the northeastern US. This information is used by the State Department of Public Health in the issuance of health alerts and to direct preemptive and emergency mosquito control activities by the State Department of Environmental Protection. Trapping is conducted daily from June through October at 91 locations statewide. The objectives of the program are to provide: 1) early evidence of local virus activity; 2) information on the abundance, distribution, identity and infection rates of potential mosquito vectors; 3) data that are used to assess the threat of WNV and EEE to the public and; 4.) guide the implementation of mosquito control measures. Since 1997, the CAES has trapped and tested over 2.3 million mosquitoes. A total of 1,182 isolations of WNV have been made from 21 different species of mosquitoes, and a total of 369 isolations of EEE have been made from 18 species of mosquitoes. There have been 89 human cases of WNV in the state with 3 fatalities. The principal foci of WNV activity in Connecticut have been identified as densely populated residential communities in coastal Fairfield and New Haven Counties. The principal foci for EEE activity are in more rural locales located in the southeastern corner of the state. We have observed a correlation both temporally and spatially between the isolation of WNV and EEE from field-collected mosquitoes and the elevated risk of human infection that typically extends from late July through September in Connecticut.

29. INVASIVE INSECTS IN CONNECTICUT

C. Maier a*ssisted by* T. Zarrillo and M. Lowry

Invasive insects pose a significant threat to the economy and the biodiversity of our region. Annually, state and federal agencies conduct surveys to detect new non-native insects and to determine the distributional range of established ones. Early detection, in particular, greatly decreases the cost of coping with invasive insects. The cost of foreign insects can be reduced even further by conducting research on their behavior and ecology to develop effective strategies to slow their spread or to eradicate them. During the last two years, we have examined the distribution of the brown marmorated stink bug, the Eurasian spruce needleminer, the lily leaf beetle, the viburnum leaf beetle, and other non-native insects. This year we have begun to evaluate the impact of the lily leaf beetle upon native lilies.

30. SUDDEN VEGETATION DIEBACK OF CONNECTICUT SALT MARSHES

W. Elmer *assisted by* P. Thiel

Salt marshes are the most productive ecosystems in Connecticut and elsewhere. Around 2000, large, irregular, barren areas appeared along the intertidal creeks from New Haven to New London. This phenomenon was Sudden Vegetation Dieback (SVD) and affects mostly smooth cord grass (*Spartina alterniflora*) A key negative feature of SVD is that the plants do not grow back the next year. We are studying the role of newly discovered pathogenic fungal species and the role of herbivorous nocturnal marsh crabs on recovery from SVD.

31. GROWTH AND CONTROL OF NON-NATIVE BAMBOOS (*Phyllostachys* spp)

Jeffrey S. Ward *assisted by* A. Simpson and E. Cerne

Running bamboos (*Phyllostachys* spp.) are 15-30 foot tall perennials with canes ranging in color from golden yellow to green to almost black. Properly planted with deep root barriers they can form a gracefully elegant garden focal point or living hedge that is resistant to deer browse. However, without proper root barriers, they can become a nuisance to neighboring properties and form impenetrable thickets in natural areas. We began an experiment this year on our three experimental farms to examine the rate of spread and effectiveness of control options for selected Phyllostachys cultivars in Connecticut.

32. COMPOSTING LEAVES USING THE STATIC PILE METHOD

A. Maynard and D. Hill

Since the 1991 ban on disposing leaves in landfills, large-scale leaf composting has spread throughout Connecticut. Some 84 municipalities are currently composting their leaves. In static pile composting, leaves are piled and the internal temperature of the pile is monitored. As the leaves decompose, the temperature in the center of the pile reaches a temperature of about 140^{o}F. When the temperature decreases, the pile is turned and fresh material is introduced to the center of the pile. Turning also aerates the pile. Leaf compost is seen here in various stages of decomposition. The finished compost is used in experiments here at Lockwood Farm and at the Valley Laboratory in Windsor.

33. VERIZON TELEPHONE TRANSMISSION SILO

Learn about the cellular transmission tower.

34. THE FARMER'S COW

K. Smith

The Farmer's Cow is an innovative, premium milk brand produced and marketed by Connecticut family-owned dairy farms. The Farmer's Cow was formed in response to consumers' interest in purchasing fresh, naturally produced, local products. Collectively, The Farmer's Cow member farms milk 2,300 cows and manage over 6,000 acres of Connecticut farmland. The Farmer's Cow milk is currently available in over 100 grocery stores throughout the state. A complete listing of retailers is shown at www.thefarmerscow.com. The Farmer's Cow is sold in half gallon cartons in whole, 2 percent, 1 percent, and skim varieties. Chocolate milk and single-serve packaging are under development. The owners of The Farmer's Cow are active members in The Connecticut Farmland Trust and The Working Lands Alliance who are working to protect and preserve Connecticut farmland. They were also the founding members of "Very Alive," a non-profit organization dedicated to the promotion of Connecticut Agriculture. Connecticut farms contribute $2 billion annually to the local economy. 51 percent of Connecticut farmland is in dairy or dairy support. In 2003, there were 191 dairy farms remaining in Connecticut. The Farmer's Cow owners are: Paul and Diane Miller, Fairvue Farms, Woodstock; Bill, Tom and Greg Peracchio, Hytone Farm, Coventry; Ned and Renee Ellis, Mapleleaf Farm, Hebron; Jim and Don Smith, and Nate Cushman, Cushman Farms, Franklin; Peter Orr and Family, Fort Hill Farms, Thompson; Robin and Lincoln Chesmer, Graywall Farms, Lebanon. Further information can be found at www.thefarmerscow.com, www.ctfarmland.org, and www.workinglandsalliance.org.

35. KID'S KORNER TENT

R. Milano-Ottenbreit

36. GIRL SCOUTS OF AMERICA

T. Arsenault

Girl Scouts of the USA is the world's preeminent organization dedicated solely to girls—all girls—where, in an accepting and nurturing environment, girls build character and skills for success in the real world. Established on March 12, 1912 by Juliette Gordon Low, Girl Scouts has been helping girls in Connecticut build courage, confidence, and character while developing uncommon leadership skills that serve the common good. Scouting provides a myriad of enriching experiences, such as extraordinary field trips, sports skill-building clinics, community service projects, cultural exchanges, and environmental stewardships. Currently, there are 2.3 million members of Girl Scouts nationwide, including about 44,000 girls here in Connecticut. For more information contact our local Girl Scout council at http://www.gsofct.org.

37. HANDS-ON CHEMISTRY

C. Robb, K. Prapayotin-Riveros, W. Krol, T. Arsenault, B. Eitzer, and J.C. White

This display includes a number of "hands-on" experiments and displays that will allow you to get up close and personal with chemistry in action. You'll get to work with our portable glove box, make slime, perform paper chromatography and see if you can make a pickle glow. You will not only get to participate in these activities but CAES staff members will explain the mechanisms behind the chemistry.

38. INVASIVE AQUATIC PLANT PROGRAM

G. Bugbee, M. June-Wells, and J. Gibbons *assisted by* M. Cavadini, J. Fanzutti, and B. Hart

Connecticut lakes and ponds face an imminent threat from non-native invasive plants. Recently introduced plants such as Eurasian milfoil, variable milfoil and fanwort are of great concern because they disrupt native ecosystems, interfere with recreational uses and reduce property values. Researchers in the Department of Environmental Sciences are documenting our State's invasive aquatic plant problem and studying management options. We are continuing a statewide inventory of freshwater aquatic vegetation. From 2004 – 2011, we surveyed and mapped the invasive and native plants in 185 Connecticut lakes and ponds. We documented over 100 plant species, 14 of which are invasive. Approximately two-thirds of the water bodies contained one or more invasive species. In 2010, we began resurveying lakes that were originally done over five years ago to begin documenting the changes. Requests for station assistance in managing unwanted aquatic vegetation are common and we often visit water bodies to help solve imminent problems. We are searching for novel control measures including; reduced risk herbicides, biological agents and winter drawdown. At this plot you will see our aquatic plant surveillance boats, state of the art global positing systems and the underwater video equipment we use to conduct our surveys. Samples of the most common invasive aquatic plants will be on display and an identification guide will be available. You can test you skills and take our aquatic plant identification quiz. A researcher will be available to discuss our program answer questions about lakes and ponds.

39. BIOLOGICAL CONTROL OF HEMLOCK WOOLLY ADELGID AND MILE-A-MINUTE WEED IN CONNECTICUT

C. Cheah

Hemlock woolly adelgid (HWA) has been a serious forest, nursery and landscape exotic pest since its first detection in Connecticut in 1985. The Station, with the support of the USDA Forest Service discovered, reared and released the tiny Japanese ladybeetle, *Sasajiscymnus tsugae*, for biological control of HWA between 1995 and 2007. Since 2005, there has been widespread recovery of forest hemlocks. But the recent warm winter of 2012 has revived resurgent pest threats for our eastern hemlocks. Similarly, mile-a-minute weed (MAM), an exotic invasive species, initially reported in Connecticut in 2000 and has now spread to at least 25 towns. In 2009, a tiny weevil, *Rhinoncomimus latipes*, imported from China, was first released in Connecticut as part of the federal biological control program for MAM. To date, approximately 23,000 weevils have been released, from 2009-2012, in the most heavily infested 11 towns to control MAM. Updates on the current pest status of these two invasive species with information on the biological control programs are presented.

40. MANAGEMENT OF BOXWOOD BLIGHT, A NEW DISEASE OF THE BUXACEAE IN CONNECTICUT AND THE U.S

J.A. LaMondia *assisted by* M. Salvas

Boxwood blight is a new, introduced disease in Connecticut. The disease is caused by the pathogenic fungus *Cylindrocladium pseudonaviculatum.* The impact of the disease has been staggering; boxwood plant losses have been estimated at $3 million in Connecticut since October 2011. We are conducting research on a wide range of fungicides *in vitro* to determine the concentrations required to achieve 50% or 85% disease suppression. Efficacious fungicides are also being applied alone or in combination to boxwood plants in pots in the greenhouse and at the CAES Valley Laboratory container nursery area to evaluate disease control. The data that we collect will be used to develop fungicide management programs with different and complementary combinations of active ingredients to inhibit spore germination and also affect growth of the pathogen in plants while following recommendations to reduce the development of fungicide resistance. Our research has also identified other host plants in the *Buxaceae* family, namely Japanese spurge (*Pachysandra terminalis*) and Allegheny spurge (*P. procumbens*).

41. USING LEAF COMPOST IN HOME GARDENS

A. Maynard and D. Hill

Annual amendment of soil with leaf compost prevents compacting and crusting of the soil surface and promotes root growth and infiltration of rain. In these plots, the addition of 1-inch of leaf compost annually since 1982 increased organic matter from 5.9 to 12.6%. Increased root growth in the amended soil allows plants to utilize nutrients in a greater volume of soil than plants in untreated soil of greater density. We are measuring the effect of reduced rates of fertilization (2/3, 1/3, 0 of normal rates) and compost amendments on the yields of several vegetables by comparing them with yields from unamended controls. We are also measuring the nutrient status of the soils in each plot throughout the growing season. Each year since 1982, yields on the leaf compost amended plots fertilized at 2/3 and 1/3 the normal rate have been consistently greater than on unamended plots with full fertilization.

42. ENVIRONMENTALLY-FRIENDLY CONTROL OF POWDERY MILDEW ON VEGETABLE PLANTS

F. J. Ferrandino

Many vegetable plants commonly grown in Connecticut gardens are subject to powdery mildew. This disease is caused by a fungus that grows on the surface of plant tissue giving the foliage a white powdery appearance. The result is relatively unsightly and the fungus weakens infected plants by feeding on the sugar the plant produces and by blocking sunlight, which limits the ability of the plant to produce more sugar. This plot is planted with a number of common vegetables (tomato, pepper, eggplant, pumpkin, and muskmelon) which are susceptible to powdery mildew. Environmentally-friendly foliar sprays, including milk (20% in water), potassium

bicarbonate (1% in water) and light horticultural oil (1% in water), will be compared to chemical fungicides in their ability to control the disease.

43. FIDDLEHEAD TRIALS

A. Maynard and D. Hill

Fiddleheads are the furled fronds of a young fern, harvested in spring for use as a vegetable. Ultimately, each fiddlehead would unroll into a mature frond. The most popular fiddlehead is that of the ostrich fern (*Metteuccia struthiopteris)*, often called the fiddlehead fern. The ferns are available commercially either canned of frozen, but since the early 1980's, farmers' markets and supermarket chains have sold fresh ferns in season. Its flavor is similar to asparagus with a pleasantly crunchy, tender-firm texture. In this experiment, data will be collected on the growth and vigor of these newly planted ferns grown under different cultural conditions. Once established, experiments will then be conducted to determine the number of fiddleheads that can be harvested from each clump to optimize both the yield of fiddleheads and growth and health of the fern plant.

44. NANOPARTICLE TOXICITY TO AGRICULTURAL PLANTS

R. De La Torre Roche, C. Musante, and J.C. White *assisted by* J. Hawthorne

Nanomaterials (NM) have at least one dimension less than 100 nanometers (one billionth of a meter) and this small size results in unique properties not observed with equivalent bulk particles. For example, at that size range, materials that are normally good insulators actually become conductive (silicon) and other elements that are generally stable actually become chemically reactive (gold). Current nanomaterial use is ubiquitous; over 1000-NM containing products are commercially available in areas such as electronics, health-care, cosmetics, pharmaceuticals, and food processing. We specifically note the recent and increasing use of nanomaterials in agriculture, including pesticides and fertilizers directly applied to food crops. Our research will characterize the impact of NMs on common agricultural crops, eventually focusing on potential risk posed to humans from exposure to these materials. Our data suggest that exposure to nanoparticle silver, copper, multiwalled carbon nanotubes, and other materials negatively impacts agricultural plants and that this effect is greater than observed with equivalent bulk materials. In addition, certain nanomaterials appear to increase the accumulation of other contaminants present in the environment.

45. SPOTTED WING DROSOPHILA MANAGEMENT

R. Cowles

The spotted wing drosophila (SWD) is a new and highly invasive pest of fruit. It completes its life cycle in about 10 - 14 days, and the population can increase about 100-fold over this period when there is an ample food supply. Females have a pair of hard, saw-like structures in her egg-laying apparatus that allows her to lay eggs in ripening fruit, in the process she inoculates the fruit with rot organisms. Nearly all fruits are susceptible to injury, but softer fruits such as day-neutral strawberries, blueberries, sweet cherries, grapes, and fall bearing raspberries are especially threatened. Experience gained from late August through the end of the growing season in 2011, and in June, 2012, suggests that growers of these susceptible fruits will need to protect fruit when there are the earliest signs of ripening with effective insecticides, until the fruit harvest ends. Several insecticides have been tested and found to be effective in the Pacific Northwest, where growers now have 2 - 3 years of experience in managing this pest. Based upon our laboratory results, some of these insecticides are more effective when applied with 1 - 2 lb of sucrose per 100 gallons. These spray droplets (wet or dry) will stimulate the flies to ingest the insecticide when encountered by taste receptors on their feet. Another option that may be especially suitable for backyard growers is to spray plants with Surround WP, an organically acceptable kaolin product that acts both as a desiccant dust and as a repellent or deterrent to SWD adults.

46. WASP WATCHERS: CITIZEN SCIENTISTS AT WORK

C. Rutledge *assisted by* M. Scott

Wasp Watchers are a group of citizen scientists who volunteer their time to help defend Connecticut against the Emerald Ash Borer (EAB). A major challenge to the effective management of EAB has been the difficulty of detecting them. Emerald Ash Borer (EAB) is an invasive beetle in the family Buprestidae that attacks and kills native, healthy ash trees and is often in an area 4-6 years before it is discovered. We don't know if it is in Connecticut yet, and that is where the Wasp Watchers come in. The native, solitary wasp, *C. fumipennis*, feeds its offspring adult buprestid beetles. If EAB is in the area, it will be among the prey taken by the wasps. The Watchers adopt colonies of wasps and monitor which beetles are brought back to the nest. By having many people monitor colonies, our chance of detecting EAB as soon as it enters the state is much better. Early detection will help us to effectively manage the beetle. The Watchers can also help to educate their friends and neighbors about EAB.

47. EXPERIMENT STATION ASSOCIATES

Information is available on this organization formed to help promote scientific advances at The Connecticut Agricultural Experiment Station.

48. TICK TENT

a. LYME DISEASE IN TICKS FROM CONNECTICUT CITIZENS

J. Anderson *assisted by* B. Hamid and E. Alves

In 2011, 2903 black-legged (deer) ticks (*Ixodes scapularis*) were received, as well as 277 American dog ticks (*Dermacentor variabilis*) and 55 lone star ticks (*Amblyomma americanum*). Of the tested black-legged ticks, 22% (340 of 1513) were infected with the Lyme disease organism, *Borrelia burgdorferi*. The average time between receipt of a tick and reporting on the tick to the senders was 13.2 days. All ticks submitted by municipal health departments are identified to species and degree of engorgement, but only engorged deer ticks are tested for the presence of the Lyme disease bacterium. Studies by other researchers have shown that ticks that have not become engorged with blood do not transmit the disease organism.

b. CHANGES IN ANTIBODY STATUS IN WHITE-FOOTED MICE

L. Magnarelli and S. Williams *assisted by* T. Blevins, M. Short, J. Barsky, F. Floyd, G. Picard, E. Picard, R. Wilcox, M. Chassey, L. Ariori, and E. White

White-footed mice (*Peromyscus leucopus*) are parasitized by ticks and carry the infectious agents for Lyme disease (*Borrelia burgdorferi*), Human Granulocytic Anaplasmosis (*Anaplasma phagocytophilum*), and Human Babesiosis (*Babesia microti*). These rodents produce antibodies to these disease organisms and are, therefore, important for monitoring infections in nature. However, little is known about seasonal changes in mouse immune responses. A mark-release-recapture study of 557 mice was conducted at 6 sites in Connecticut during the warmer months of 2007 through 2010. Of the 463 seropositive mice, 206 (45%) animals had antibody evidence of infection for all three disease organisms. Moreover, there were seasonal changes in antibody status from negative to positive for 117 mice and from positive to negative for 55 mice. The latter occurred in late summer and early fall and may indicate that mouse immune systems ceased to produce antibodies, despite active infections. The lack of antibody production might be enhancing the ability of white-footed mice to infect larval *Ixodes scapularis* ticks feeding on these rodents prior to the winter or may indicate that mice cleared the infections.

c. THE "DEER" TICK *IXODES SCAPULARIS*

K. Stafford *assisted by* H. Stuber

The blacklegged tick or "deer" tick *Ixodes scapularis* transmits the agents of Lyme disease, Human Babesiosis, and Human Granulocytic Anaplasmosis in Connecticut. Observe live and preserved ticks under the microscope. Copies of the Tick Management Handbook and the latest information on natural and biological control of the tick are available.

d. PROTECT OUR TREES: STOP THE ASIAN LONGHORNED BEETLE AND EMERALD ASH BORER

R. Hiskes *assisted by* K. Dugas

Connecticut's forests and urban trees are under threat from two exotic beetles: the Asian Longhorned Beetle (ALB) and the Emerald Ash Borer (EAB). These beetles have wood-boring larvae that kill deciduous trees by their feedings. In 2008, ALB was detected within 30 miles of Connecticut's border in Worcester, MA. In 2010, four ALB-infested red maples were found at a hospital in Boston. In 2010 EAB progressed to the west bank of the Hudson River in Saugerties, NY. March 2012 EAB was found EAST of the Hudson River. Learn how to recognize these two invasive species, the host trees they affect, the damage they cause and how to report potential finding to CAES.

49. NATIVE WOODY SHRUBS

J.S. Ward *assisted by* J.P. Barsky

Native woody shrubs offer an alternative to exotics commonly used in landscaping. This collection of shrubs was assembled in 1962, and in 1976, it was arranged in its present form with a dry site on the gravel mound and moist site in the shallow, plastic-lined depression. Many of these shrubs flower in the spring; their flowers can be seen in the photographs. Others, such as sweet pepperbush, spirea, and buttonbush, flower in summer. Witch-hazel flower in early autumn. Birds are frequent visitors to the garden and quickly eat the mature fruit. These shrubs survive with minimal maintenance. Occasional mowing, annual removal of dead stems, and replenishment of mulch are performed. These shrubs have never been fertilized, watered, or treated for disease.

50. BIRD AND BUTTERFLY GARDEN

J. Canepa-Morrison and J. Fengler

The Bird and Butterfly Garden is a partnership of the CAES and the Federated Garden Clubs of CT/Spring Glen Garden Club. This garden creates several favorable habitats for our native birds, butterflies, and pollinating insects and helps us determine which plants may work best in southern Connecticut gardens. At this time of year, the garden is at its peak performance with plants thriving in the garden and meadow. Plant labels are placed near the plants in the garden to provide the botanical and common name. Throughout the day, we update our list of birds, butterflies and moths spotted in the garden. The Bird & Butterfly Garden at Lockwood Farm is listed in the 'Nature Conservancy Open Days Directory for New England'. Do you have a

butterfly garden or would you like to start one? Experiment Station staff members can provide you support by answering your questions and suggesting ways for you to enjoy a butterfly garden small or large on your patio or in your yard.

51. HERBS AND CUT FLOWERS AS POTENTIAL NECTAR AND POLLEN SOURCES FOR BEES

K. Stoner *assisted by* T. Zarrillo, M. F. Lowry, B. Gluck, M. Stuke, C. Bell, K. Madrid, and G. Hafez

One way that people can help bees is to grow a diversity of flowers that provide pollen and nectar, and that bloom at different times to provide a season-long food supply. This flower plot is used to compare the numbers and diversity of bees caught on herbs and cut flowers – plants that have multiple uses, in addition to benefiting pollinators. This is part of a larger study of floral resources available to bees on 10 diversified vegetable farms in Connecticut. In our first year of study, we found that anise hyssop, an herb not often grown in Connecticut, was outstanding in attracting bees. Anise hyssop bloomed from July through September, and we counted an average of 24 bees per minute of observation, the most of any plant we sampled last year.

52. CHESTNUT SPECIES AND HYBRIDS

S. Anagnostakis *assisted by* P. Sletten

These trees are part of the large collection of species and hybrids of chestnut maintained by the CAES. Great differences can be seen in chestnut blight resistance, form, and nut production. Hypovirulent strains of the blight fungus help protect them from lethal cankers (see CONTROL OF BLIGHT ON AMERICAN CHESTNUTS plot 18). Plants of all seven species of chestnut are growing here. In 1994, two seedlings from the Caucasus Mountains of Russia that are true European chestnut were planted, but only one has survived our Connecticut winters. European chestnut trees from Turkey have also done poorly. Two trees of the chinquapin native to Florida are planted across the road from an Allegheny chinquapin from Pennsylvania. The cultivar 'Lockwood' is at the southwest corner of the plot.

53. BEES, TREES, AND COMMODITIES: THE SURVEY AND INSPECTION TEAM

V. Smith, S. Sandrey, P. Trenchard, and M. Creighton

We work to assure the quality of the agricultural products leaving the state and to maintain the health of forests and Connecticut's agricultural industry. In 2011, the Office of the State Entomologist completed registration and inspections for over 721 nursery growers and dealers of plants and plant products. Over 350 certificates of export were issued for plant commodities moving out of state or out of country. Over 930 beekeepers registered 5,400 hives, and nearly 800 of these were inspected for diseases of honey bees. In addition, surveys were conducted for a variety of exotic pests and diseases, and health of our forests was assessed by aerial survey. Our goal is to safeguard agriculture and forests of Connecticut through surveys to detect infestations, through monitoring of the health and vitality of the forests, and through inspection and registration of commodities and producers to assure their fine quality.

54. EASTERN BLUEBIRD, *SIALIA SIALIS*, NEST BOX TRAIL

L. Kaczenski

A Bluebird trail consists of a minimum of six nesting boxes spaced a hundred yards or more apart. Here at Lockwood Farm, we have twenty nesting boxes located throughout the farm. I also have a second trail at Gouveia Vineyards in Wallingford with ten nesting boxes; this will be the fourth year at the Gouveia Vineyards and the seventh year at Lockwood Farm. Success of a trail greatly depends on weekly monitoring of the nesting boxes; close monitoring is needed to prevent House Sparrows from nesting in them. House Sparrows and the European Starling are a non-native invasive species introduced to North America in the 1800's; both of which are cavity nesters and both are very aggressive and have contributed greatly to the decline of Bluebirds. There is also nesting competition with Tree Swallows, House Wrens, Tufted Titmice and Chickadees. The population decrease of the Eastern Bluebird declined seriously enough to reach a critical status by the mid 1900's due to habitat destruction, over use of pesticides and nest predation by the House Sparrow and Starling. Bluebird trails across North America have greatly increased their numbers, and due to this increase, they are not protected under the U.S. Endangered Species Act. Both trails are registered with Cornell's NestWatch program; the data collected during the weekly monitoring (inhabitants, clutch size, predation, successful fledging, etc.) are submitted, at the end of each nesting season, to the Cornell Laboratory of Ornithology helping scientists' with their research of the Eastern Bluebird.

55. HYBRID AND VINIFERA WINEGRAPE CULTIVAR TRIAL

W. Nail *assisted by* J. Bravo and N. Petrochko

The Connecticut component of NE-1020: Multi-State Evaluation of Winegrape Cultivars and Clones consists of 24 hybrid and vinifera cultivars. The vineyard was planted in late spring, 2008. Some of the new cultivars are unreleased selections from breeding programs at Cornell University and the University of Minnesota, while others are newly available cultivars from cool and cold climate areas of Europe. The new cultivars are being compared to established cultivars, which are the same for all states with similar climatic conditions. This planting is the third largest NE-1020 planting in the eastern states. Another, smaller, cultivar evaluation plot has been established at the Windsor station.

56. ROCKY HILL AMERICAN CHESTNUT TREES

S. Anagnostakis *assisted by* P. Sletten

Seed collected from selected American chestnut trees in Rocky Hill in 1985 grew into the trees planted here. They are used as female parents in our crosses and are being treated with hypovirulence (see CONTROL OF BLIGHT ON AMERICAN CHESTNUTS plot 18) to keep them alive.

57. PINOT GRIS CULTURAL TRIALS

W. Nail *assisted by* J. Bravo and N. Petrochko

A planting of 288 Pinot Gris vines was established in 2004. Half of the vines are on 101-14 rootstock, and the other half are on C3309. Vines on C3309 have had greater winter mortality and increased incidence of crown gall. Horticultural oil was applied at bloom in 2006-2008. Application of oil reduced photosynthesis and fruit set, resulting in less compact clusters that may be more resistant to late-season fruit rot diseases.

58. BEACH PLUM TRIALS

A. Maynard and D. Hill

Beach plum (*Prunus maritime* Marsh.) is a fruiting shrub native to the coastal dunes of the Northeastern United States. Beach plum jam has become a premium product especially in the Cape Cod region. Currently, consumer demand for beach plums is greater than the supply. Commercial production is the only way to meet the demand for beach plums and its relatively low growth habit makes it ideal for a pick-your-own operation. In its native seaside habitat, beach plums grow very slowly and bear fruit sporadically. Growth in more fertile soil should be more vigorous and crop size will be improved. In spring 2003, 210 beach plum seedlings were planted at Lockwood Farm and 96 at the Valley Laboratory. These seedlings were raised at Cornell University from seeds collected from 35 sites from Maine to Delaware. The trees are evaluated annually and select elite individuals will be propagated as possible cultivars in the future.

59. PAWPAW TRIALS

A. Maynard and D. Hill

Pawpaws are shrubby trees that are native to the temperate woodlands of the eastern United States. The American Indian is credited with spreading pawpaws across the eastern U.S. to eastern Kansas and Texas, and from the Great Lakes almost to the Gulf. They are woodland understory plants that need shade to protect the seedlings but once established prefer full sun. They produce maroon, upside-down flowers which are self-incompatible, requiring cross pollination from another unrelated pawpaw tree. They are not pollinated by bees but by flies and beetles. The pawpaw is the largest edible fruit native to America. Individual fruits weigh 5 to 16 ounces and are 3 to 6 inches in length. The tasty fruit has a smooth, custard texture. In this trial, 4 cultivars of pawpaws were planted in 2002.

60. JAPANESE PLUM VARIETY TRIALS

A. Maynard and D. Hill

As wholesale marketing of major tree fruits becomes unprofitable, many Connecticut growers are turning to retail sales of their fruit. For a retail operation to be successful, there must be a diversity of products. Thus, many growers are interested in adding minor specialty fruits to their operations. Consequently, we have expanded our New Crops Program to include fruits. This trial, also repeated at the Valley Laboratory in Windsor, includes 12 cultivar/rootstock combinations of Japanese plum. Many trees, with the exception of the cultivar 'Obilnaja,' have been damaged by black knot disease.

61. HYBRID ELM TREES

S. Anagnostakis *assisted by* P. Sletten

The late Eugene Smalley spent his whole career at the University of Wisconsin breeding elm trees for resistance to Dutch Elm Disease and for the tall, vase-shaped form of American elm trees (*Ulmus americana*). The problem with this kind of breeding is that American elms have four sets of chromosomes, and all the other species of elm have two sets. They bloom at different times, but stored pollen can be used to make crosses. In 1992, Dr. Smalley sent us trees of Chinese elm (*Ulmus parvifolia*) and some of his successful crosses. Mortality has been high, but some of the trees still survive. A few of them look like good replacements for American elms as street trees.

62. CT NURSERYMEN'S GARDEN

The Connecticut Nurserymen's Gardens are showcases of plants discovered or hybridized and introduced to the horticultural trade by Connecticut nurserymen. Similar gardens are at the Valley Laboratory in Windsor and the Main Laboratories in New Haven. All plants were produced by members of the Connecticut Nurserymen's Association and planted in 1986-87. Introductions feature evergreen and deciduous azaleas, mountain laurel, maple, pine, hosta, iris, and other flowering and foliage plants. A brochure containing maps of all three gardens and a brief description of the plants are available.

63. SOUND SCHOOL AGRICULTURAL SCIENCE PROGRAM

C. Mavrelion and Students from the Sound School

This is a unique opportunity for students from New Haven who are interested in studying/pursuing a career in Agricultural Science. This is a public high school within the City of New Haven. Our program operates on a 12-month basis in partnership with the CAES. Today you see an example of students planting, growing, caring and eating fresh vegetables and herbs from their garden, which they have taken care of this summer. Excess produce is used in local soup kitchens. Our Partnership with the City of New Haven "Youth @ work" program assists in the development of work-based skills under the direct supervision and instruction of a certified Vocational Agriculture Teacher. Please visit our web site: www.soundschool.com.

64. CONNECTICUT PROFESSIONAL TIMBER PRODUCERS ASSOCIATION

J. Nichols

The Connecticut Professional Timber Producers Association, Inc. (TIMPRO) was formed in 2007. The mission of TIMPRO is to address the growing need for an organization to represent the vital interests of the harvesters and sawmills of Connecticut, to promote the use of Connecticut's renewable forest resources, and to enhance the image of the Connecticut forest products industry throughout the state by way of the following activities: A. Communicate information to the membership; B. Institute ethical guidelines and demand a high degree of professional ethics among its members. Establish Forest Practice Standards for the timber harvesting and forest products profession; C. Promote safety within the profession; D. Promote Best Management Practices (also known as BMP's) for the timber harvesting profession; E. Promote education in the fields of forestry, timber harvesting, and forest products both within the Association and outside; F. Promote superior utilization of forest products; G. Promote the use of Connecticut wood products; and H. Publish a Connecticut Forest Profession directory and publish periodically an industry newsletter. www.timproct.org.

65. CONNECTICUT INVASIVE PLANT WORKING GROUP

D. Ellis

The Connecticut Invasive Plant Working Group (CIPWG) is a statewide organization whose members gather and convey information on the presence, distribution, ecological impacts, and management of invasive plant species. We promote the use of native or other non-invasive ornamental alternatives throughout Connecticut and work cooperatively with researchers, conservation organizations, government agencies, the green industries, and the general public to identify and manage invasive species pro-actively and effectively. The CIPWG website, www.hort.uconn.edu/cipwg provides timely information on non-native invasive plants, including a list of Connecticut invasive species, management information, invasive plant alerts, fact sheets, invasive plant legislation, photos, alternative replacements for invasives, and a calendar of events. For additional information, or to become a member of CIPWG, please contact Donna Ellis 860-486-6448; email donna.ellis@uconn.edu. CIPWG will present an invasive plant symposium on Thursday, October 25, 2012 at the University of Connecticut in Storrs, CT. Program and registration information can be found on the CIPWG website.

66. CONNECTICUT DEPARTMENT OF LABOR / CONN-OHSA

C. Zinsser

Our mission at the Connecticut Department of Labor, OSHA Division, is to assist employers, in both public and private sectors, in developing and maintaining workplaces free from recognized hazards. This is accomplished through our no-cost on-site consultation program. The state offers the expertise of highly qualified occupational safety and health professionals to employers who request help in establishing and maintaining a safe and healthful workplace.

67. CONNECTICUT HORTICULTURAL SOCIETY

L. Rouleau

The Connecticut Horticultural Society, founded in 1887, is an educational organization dedicated to encouraging and improving the practice of gardening and the dissemination of horticultural information to its members and the public. The society, through its many and varied programs seeks to encourage the enjoyment, appreciation and understanding of plants, the environment, and the art and science of gardening. Monthly meetings are held in West Hartford, while workshops are held around the state. Today, you'll learn about CHS programs for the upcoming year, speak with members of the Society and participate in their free raffle for a compost bin (value $125).

68. CONNECTICUT FARMLAND TRUST

C. Roy

The Connecticut Farmland Trust (CFT), established in 2002, is a statewide private non-profit conservation organization dedicated to protecting Connecticut's farmland. CFT's mission is to: 1.) Protect Connecticut's prime farmland for agricultural use by acquiring agricultural conservation easements and farmland; 2.) Assist landowners, local land trusts, town officials, and state agencies in identifying and protecting threatened agricultural land; and 3.) Enhance agricultural diversity, agricultural economic development, environmental quality, and rural character. The Connecticut Farmland Trust accepts donations of farmland and agricultural conservation easements as well as purchases farmland and agricultural conservation easements. To date CFT has protected 26 active farms, totaling nearly 2,100 acres. For more information about CFT visit www.ctfarmland.org or contact Elisabeth Moore, Director

of Projects, Connecticut Farmland Trust, 77 Buckingham Street, Hartford, CT 06106, phone: 860-247-0202, fax: 860-247-0236, email: emoore@ctfarm.org.

69. CONNECTICUT FARM BUREAU ASSOCIATION

A. McCullough

Connecticut Farm Bureau Association (CFBA) is a non-profit membership organization dedicated to farming and the future of Connecticut farms. CFBA serves its members by advocating for agriculture, and educating the public and elected officials on issues that keep farm families productive: economic viability, land use, labor, taxation and the protection of farmland. Connecticut Farm Bureau's work of proactively representing the interest of farmers is vital to providing safe, locally grown, farm-fresh products and a high quality of life for all Connecticut residents.
www.cfba.org.

70. CONNECTICUT ENVIRONMENTAL COUNCIL

E. Fearn

Making Connecticut's spaces and places beautiful, safe and pest-free.

Connecticut Environmental Council (CTEC) unites individuals, businesses and industry associations that engage in the responsible use of pesticides and fertilizers to beautify, protect and provide healthy spaces and places. CTEC works to improve the quality of life for Connecticut families through leadership, stewardship, sustainability and compliance. CTEC is dedicated to clarifying facts and myths on fertilizer, pesticide and water use in our state. Active in government regulation, CTEC works with policy makers and regulators to be able to provide the best service and products to Connecticut residents. CTEC offers professional development and education opportunities to member businesses.

71. THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION: DIVISION OF FORESTRY

C. Donnelly

The CT Department of Energy and Environmental Protection Division (DEEP) of Forestry performs a range of services for the citizens of Connecticut. Our state is about 60 percent forested, making it both one of the mostly forested and densely populated states in the country. Among its responsibilities, DEEP Forestry manages nearly 162,000 acres of state-owned forestlands, for the health of the forest and for the benefit of those who live in state. We also work with private forestland owners and municipalities, providing assistance with proper forest management, forest health, wildland fire control, the certification of forestry professionals and general technical support. Of the 1.86 million total acres of forest in Connecticut, private landowners own 1.54 million acres. At Plant Science Day, the DEEP Forestry program will have representatives of the Private and Municipal Lands program, which focuses its efforts on outreach to the public regarding private forestlands and municipal tree programs, and from the Forest Practices group, which focuses on the certification of forestry professionals and the standards regarding the work performed on forestlands throughout the state. Questions regarding forests, trees, and forest and tree professionals are all fair game for this group.

72. CONNECTICUT DEPARTMENT OF AGRICULTURE

R. Olsen

A photo exhibit will highlight Connecticut agriculture. Brochures and pamphlets will be available, along with information on Public Act 490 and farming, and agriculture and taxes. www.ct.gov/doag.

73. 14th CIVIL SUPPORT TEAM (WMD)

CPT E. Cordon

The 14th Civil Support Team (Weapons of Mass Destruction) is able to deploy rapidly to a domestic Weapons of Mass Destruction / Chemical, Biological, Radiological, Nuclear, Explosive (WMD/CBRNE) incident to assist local first-responders and incident commanders in determining the extent of an attack or incident. They do this by providing expert technical and medical advice on WMD response operations, presumptive analysis of samples taken to help identify the threat, and assess current and projected consequences. They consist of both Army National Guard and Air National Guard personnel, and as they are the first military responders on the ground, if additional federal resources are called into the incident they can serve as an advance party that can liaise with the Joint Task Force Civil Support.

74. CONNECTICUT NORTHEAST ORGANIC FARMING ASSOCIATION

D. Legge

CT NOFA is the Connecticut Chapter of the Northeast Organic Farming Association. CT NOFA is an independent non-profit organization dedicated to strengthening the practices of ecologically sound farming and gardening, and to the development of local sustainable agriculture. Our efforts give consumers increased access to safe and healthy food. CT NOFA is a growing community of farmers, gardeners, land care professionals, businesses and consumers that encourages a healthy relationship to the natural world. For more information, visit us at www.ctnofa.org, www.facebook.com/ctnofa, www.organiclandcare.net, or call 203-888-5146.

75. USDA, ANIMAL AND PLANT HEALTH INSPECTION SERVICE, PLANT PROTECTION AND QUARANTINE
E. Chamberlain, K. Aitkenhead
The mission of Plant Protection and Quarantine: APHIS-PPQ safeguards agriculture and natural resources from the risks associated with the entry, establishment, or spread of animal and plant pests and noxious weeds. Fulfillment of its safeguarding role ensures an abundant, high-quality, and varied food supply, strengthens the marketability of U.S. agriculture in domestic and international commerce, and contributes to the preservation of the global environment. http://www.aphis.usda.gov.

76. buyCTgrown
D. Rollins
buyCTgrown is a statewide buy local campaign that connects consumers looking for fresh healthy foods and farm related products in Connecticut with a searchable database of farms, CSA farmers markets and restaurants that use locally grown foods and much more. www.buyCTgrown.com.

77. USDA NATURAL RESOURCES CONSERVATION SERVICE
C. Donzella
The Natural Resources Conservation Service (NRCS) is an agency of the United States Department of Agriculture with offices at six locations in Connecticut. For over 75 years, we have worked cooperatively with landowners, conservation districts, federal, state, and local governments, and citizens from urban and rural communities to restore, enhance, and protect natural resources. NRCS conservation specialists promote land stewardship by providing technical and financial assistance to agricultural and forest landowners and producers to address water quality and quantity; restore and protect habitat; improve air quality and energy conservation, and protect farmland from development. NRCS also provides soils and other natural resource information and analysis to help land owners and managers make informed decisions. For more information visit us at: http://www.ct.nrcs.usda.gov.

78. CONNECTICUT TREE PROTECTIVE ASSOCIATION
R. Smith
CTPA is a non-profit, non-partisan association, made up largely of tree care professionals from Connecticut. Our mission is to promote the protection and care of trees in Connecticut and to encourage the ongoing improvement of tree care practices among tree workers. The CTPA sponsors meetings devoted to education and the exchange of ideas relating to tree care, based on science and on the best insights of tree care professionals. The Association advocates legislation and appropriations by the state, cities, towns and boroughs of Connecticut that are beneficial to trees and tree care. The CTPA also pursues such public outreach programs as its Arbor Day Essay Contest.

79. UNITED STATES DEPARTMENT OF LABOR / OSHA
P. Mangiafico
Our agency's purpose is to assure safe and healthy working conditions for working men and women. Our Federal website is: www.osha.gov. Our local office is located in Hartford, CT. Our phone number is 860-240-3152. Our exhibit will have literature available on topics including, but not limited to: chemical safety, tree trimming, chain saws, wood chippers, heat stress, teen worker safety, and construction.

80. UCONN MASTER GARDENER PROGRAM
J. Hsiang
The UConn Master Gardener Program is an Educational Outreach Program of the University of Connecticut Co-operative Extension. Following their special training course, Master Gardeners commit time as volunteers to provide horticultural-related information to the community. Master Gardeners in New Haven County collaborate with park departments, land trusts, community groups, and educational institutions at all levels to increase environmental awareness through hands-on programs.

81. CONNECTICUT GREEN INDUSTRIES
B. Heffernan, Executive Director
The Connecticut Green Industries represents the Connecticut Greenhouse Growers Association (CGGA), the Connecticut Nursery and Landscape Association (CNLA), and the Connecticut Florists Association (CFA). CGGA is the trade association for Connecticut's great Greenhouse Industry, representing nearly 200 growers of potted plants. CNLA is Connecticut's Trade Association for Growers of Trees, Shrubs, Perennial-Annual Flowers, and Nurseries, Garden Centers, Landscapers and Landscape designers. CFA is the state's association for retail and wholesale florists, and those companies that grow fresh cut flowers. All green industry groups can be accessed on the internet at www.FlowersPlantsInCT.com.

82. FRIENDS OF BROOKSVALE PARK, INC.
K. Walker
Friends of Brooksvale Park, Inc. is a not for profit organization providing environmental education, preserving and enhancing the integrity of the park's natural and cultural resources, and serving as an advocate for the park to the benefit and enjoyment of the citizens in the greater Hamden area. www.brooksvale.org.

83. ELM CITY MARKET
J. Daddio
Many New Haveners have to travel outside the city to purchase groceries; many other local residents, lacking the means to travel outside the city, must go without key staples and affordable fresh healthy food. New Haven is a food town to the core. Yet the city that invented the hamburger perfected the pizza, and boasts the densest downtown in Connecticut currently has no full-service grocery store. In late 2009, a group of property owners and concerned citizens came together to fix this problem. We worked tirelessly to develop an independent, member-owned grocery store that will serve the unique needs of New Haven. As a hybrid co-op that provides local, natural, organic, and conventional products and groceries, Elm City Market reflects the needs of the community in a way that no national chain could in order to provide the sustenance that New Haven needs now. www.elmcitymarket.coop.

84. CONNECTICUT AGRICULTURAL EDUCATION FOUNDATION
E. Provencal
The Mission of the Connecticut Agricultural Education Foundation is to seek and administer funds for the benefit of programs that promote Connecticut agriculture through education. Distressingly, agricultural illiteracy is a reality in Connecticut. Too many people just don't know where their food and plants come from or how they are produced. Too many people don't have the basic agricultural knowledge needed to make wise and thoughtful choices about the issues facing farms today. The consequences of this lack of awareness can be disastrous for all of us connected to the agricultural community.

Index of Scientists' & Staff Names and their Field Plot Numbers

NAME	FIELD PLOT NUMBERS
Alves, E.	Main Tent, 48a
Anagnostakis, S.	Main Tent, 1,7, 13, 18, 19, 25, 26, 52, 61
Anderson, J.	48a
Andreadis, T.	Barn B, 28
Armstrong, P.	Barn B, 28
Arsenault, T.	Barn B, 16, 36, 37
Barsky, J.	48b, 49
Berger, W.	Barn B, 16
Blevins, T.	Outside Exhibitors, 48b
Bomba-Lewandoski V.	Main Tent, Publications
Bravo, J.	Registration
Bugbee, G.	38
Canepa-Morrison, J.	50
Carney, S.	Registration
Cecarelli, R.	Demo Tent
Cheah, C.	Main Tent, 39
Clark, C.	Barn B
Cowles, R.	45
Creighton, M.	53
De La Torre Roche, R.	Barn B, 44
Dingman, D.	23
Douglas, S.	Main Tent, Barn B
Dugas, K.	48d, 27
Eitzer, B.	Main Tent, Barn B, 37
Elmer, W.	11, 30
Fengler, J.	50
Ferrandino, F.	15, 20, 22, 42
Finan, S.	28
Gibbons, J.	38
Hamid, B.	48a
Hill, D.	2, 3, 4, 5, 6, 8, 9, 10, 32, 41, 43, 58, 59, 60
Hiskes, R.	27, 48d
Huntley, R.	Barn B
Inman, M.	Barn B, 23, 27
Ives-Parisi, J.	Registration
June-Wells, M.	38
Kaczenski, L.	54
Krol, W.	Barn B, 37
LaMondia, J.	40
Last, M.	Main Tent
Li, Y.	27
Lowry, M.	29, 51
Magnarelli, L.	Main tent, 48b
Maier, C.	29
Marra, R.	Walking Tour, Pesticide Tour, Barn B
Maynard, A.	2, 3, 4, 5, 6, 8, 9, 10, 32, 41, 43, 58, 59, 60
McHale, N.	Bus Tour, Barn B
Mervosh, T.	27
Milano-Ottenbreit, R.	35
Misencik, M.	Coffee & Cold Drinks
Molaei, G.	Barn B

	Barn B, Front Gate, 44
Musante, C.	
Nail, W.	17, 21, 26, 55, 57
Peterson, R.	Barn B, Bus Tour
Prapayotin-Riveros, K.	Barn B, 37
Ranciato, J.	Barn B, Front Gate
Ridge, G.	Barn B, 27
Robb, C.	Barn B, 37
Rutledge, C.	46
Salvas, M.	40
Sandrey, S.	Main Tent, 52
Schultes, N.	Main Tent, Barn B
Shepard, J.	Barn B, 29
Short, M.	Barn B, 48b
Sletten, P.	1, 7, 13, 18, 19, 25, 26, 52, 56, 61
Smith, V.	53
Soleski, K.	35
Stafford, K.	48c
Stoner, K.	51
Stuber, H.	48c
Thiel, P.	11, 30
Thomas, M.	Barn B, 28
Trenchard, P.	53, Main Tent(?)
Ward, J.	Main Tent, Barn B, 12, 31, 49
White, J.	Barn B, 16, 37, 44
Williams, S.	Barn B, 48b
Zarrillo, T.	29, 51

History of The Connecticut Agricultural Experiment Station

The Connecticut Agricultural Experiment Station (CAES) is one of a national network of state agricultural experiment stations. Experiment Station scientists collaborate with researchers in other states and the federal government to solve local, regional, and national problems. CAES has existed for 137 years.

The CAES is the first state agricultural experiment station in the United States. It was founded by the efforts of Samuel W. Johnson, a professor of agricultural chemistry at Yale University. Johnson had seen an agricultural experiment station when he did his studies in Germany during the 1850s. He saw how the science of chemistry could be used to aid farmers and campaigned for 20 years until one was established by the Connecticut legislature in 1875. Initially opened as a chemistry laboratory at Wesleyan University in Middletown, the Station was moved to Yale in 1877, where its first bulletin reported on analysis of a fertilizer that had little agricultural value. In 1882, the Experiment Station moved to its present location on Huntington Street (previously named as Suburban Street) in New Haven. Besides Lockwood Farm, its outdoor laboratory in Hamden, the Experiment Station also has a research farm and laboratories in Griswold and Windsor.

Through the years, many important discoveries have been made by researchers at the CAES. For example, vitamin A was discovered as an outgrowth of studies of the chemical composition of foods. The first practical hybrid of corn was developed, and many experiments in increasing the yield of corn were conducted at Lockwood Farm by Donald F. Jones. This discovery led to the doubling of yields of corn crops throughout the nation and led to more abundant and lower cost of food for mankind. Also, at Lockwood Farm, experiments were conducted, which led to the development of organic fungicides, some of which are still in use to combat plant diseases. These fungicides replaced toxic heavy metals previously used to control plant pathogens. The first culture of the West Nile virus in North America was made at the main campus in New Haven.

Research at the Experiment Station covers plants and their pests, such as diseases and insects; the pests of man and animals such as mosquitoes and ticks; growth of the state's forests; methods of enhancing the growth of plants by protecting them from pests and increasing crop yields through cloning of genes; and studies of environmental contamination and ways to reduce application of pesticides or their impact on the environment. Research continues on crops for biodiesel fuel production and for nematode control. Staff at the Station also analyze fresh fruits and vegetables for excess pesticide residues, test fertilizers and animal feeds for compliance with label claims, and screen a wide variety of foods as a part of the federal and state's food and product safety monitoring programs.

Some current research includes:

- Release of a lady beetle to control the hemlock woolly adelgid, which can kill hemlocks throughout the state.
- Studies of the pathogen that causes Lyme disease and means of controlling the tick vector.
- Treatments to reduce the toxicity of organic contaminants in soil and water.
- Studies of natural changes in Connecticut's forests.
- Ways to control insect pests of plants using non-chemical means.
- Surveys and studies of the eastern equine encephalitis virus, West Nile virus, and other encephalitis viruses in mosquitoes.
- Enhancing growth of crops through the use of compost as a substitute for fertilizer.
- Finding new crops for Connecticut farmers and developing the best growing practices for existing crops in Connecticut.
- Studies of invasive aquatic plants and methods of control.
- Deciphering the cause of Sudden Vegetation Dieback in Connecticut salt marshes.

The experiments at Lockwood Farm are only a portion of these conducted by Station scientists. Scientists also perform experiments in New Haven, Griswold, and Windsor and carry out other experiments in state forests and on private lands.

NOTES

NOTES

PLANT SCIENCE DAY is held annually the first Wednesday in August at Lockwood Farm, 890 Evergreen Avenue, Mt. Carmel, Hamden.

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION, founded in 1875, is the first state agricultural experiment station in America. It is chartered by the General Assembly to make scientific inquiries and experiments regarding plants and their pests, insects, soil and water, and to perform analyses for State agencies.

OFFICE AND MAIN LABORATORIES

123 Huntington Street; New Haven, CT 06511-2016, (203)-974-8500,
toll-free, statewide, 1-(877)-855-2237

VALLEY LABORATORY

153 Cook Hill Road; Windsor, CT 06095-0248, (860)-683-4977

LOCKWOOD FARM

890 Evergreen Avenue; Hamden, CT 06518-2361, (203)-974-8618

GRISWOLD RESEARCH CENTER

190 Sheldon Road; Griswold, CT 06351-3627, (860)-376-0365

THE EXPERIMENT STATION'S WEB PAGE: WWW.CT.GOV/CAES

7/17/12