Realizing Clifford and Melda's vision “Cliffields” transitioned from a traditional farm into a Center for Sustainable Agriculture addressing the special needs of New Jersey farmers. As an educational facility, the Snyder Research Farm also reaches out to the non-farming public educating various stakeholder groups on a diversity of issues such as lawn and garden, natural grass sports fields, youth development and water quality.
HISTORY OF SNYDERS

Clifford E. & Melda C. Snyder
Agricultural and Community Leaders

In an era when farmers trusted tradition more than science, Clifford Snyder financed his college education with the profits from a borrowed potato field. He attended Massachusetts Institute of Technology and was a graduate of Cornell University. He was a Hunterdon County agricultural and community leader, a nationally known figure in agriculture and a pioneer in the founding of the Hunterdon Medical Center.

At a time when most women toiled at home, Melda Snyder was a teacher and school district administrator. Education was a defining ideal for Clifford and Melda Snyder.

The Snyders believed in hard work, honest dealings and civic service. Clifford was often the first to explore a new idea. Area farmers visited the farm called Cliffields and learned about the latest technology. He served on the Hunterdon County Board of Agriculture and was President for more than 30 years. After Clifford's death in 1967, Melda expanded that concept, hosting informational tours so people could better understand farmers and farming.

Melda served on the state and county agriculture boards and she was director of the New Jersey Farm Bureau. Upon her death in 1988, Melda Snyder bequeathed Cliffields, a 390 acre farm, to Cook College and the New Jersey Agricultural Experiment Station. Renamed the Clifford E. and Melda C. Snyder Research and Extension Farm, Center for Sustainable Agriculture, it embodies these goals and stands as a testament to this forward-thinking couple.

Mission Statement

Rutgers Center for Sustainable Agriculture: The Clifford E. & Melda C. Snyder Research & Extension Farm responds to the agricultural and environmental needs of New Jersey. As part of the New Jersey Agricultural Experiment Station, it shares the scientific resources of the School of Environment and Biological Sciences (SEBS) at Rutgers, The State University of New Jersey. Our mandate is to improve the quality of life through an integrated program of scientific research, public education and community outreach.

The Snyder Research Farm works at keeping New Jersey farmers profitable while maintaining environmental and community accountability. More than 75 experiments are underway developing cropping systems and business tools fitting New Jersey's unique agricultural needs. The Snyder Research Farm reaches out to all New Jersey residents disseminating agricultural/environmental expertise assisting in areas such as lawn and garden, sports fields, roadside vegetation management, water quality and youth development.
Snyder Research Farm Project Leadership

The 390 acre Clifford E. and Melda C. Snyder Research and Extension Farm maintains over 75 experiments and demonstrations addressing a wide variety of agricultural, home and commercial horticultural and environmental issues. The Snyder Research and Extension Farm provides staff, land and equipment resources attracting a diverse group of faculty from Rutgers University, New Jersey Agricultural Experiment Station and Rutgers Cooperative Extension engaging their expertise to benefit both the farming and non-farming interests of New Jersey residents. Over the last 20 years, the Snyder Research and Extension Farm transitioned into research facility installing infrastructure supporting the requirements of technical research projects. Clifford and Melda Snyder’s gift of this outstanding farm to Rutgers University has made possible the work that follows, representing a glimpse of the last 20 years.

EXAMPLES OF RESEARCH PROJECTS:

Dr. James Simon -- Rutgers University, School of Environmental and Biological Sciences, Rutgers Cooperative Extension -- Specialist in New-Use Agriculture - Department of Plant Biology and Pathology

**Program Focus: New Crops For New Jersey Farmers**

New Jersey is not only the national epi-center of diversity with its population but now also with its crops and plant products. A concerted effort by the Rutgers Cooperative Service and the New Jersey Agricultural Experiment Station has given the introduction of new crops a high priority as growers seek high value niche plants to grow and new opportunities for on-farm and in-state processing. Led by Professor Simon who serves as the Director of the New Use Agriculture and Natural Plant Products Program, Rutgers University, this initiative seeks to identify new crop opportunities, new applications of bioactive and nutritious plant compounds, new products from fruits, vegetables and herbs. Working with campus faculty, extension specialists and commercial growers, the Snyder Research farm serves as a major research and testing site for all the selection, breeding and supportive field trials examining a wide range of ethnic produce including Korean and Chinese vegetables and herbs, new medicinal plants, specialty greens and culinary herbs and vegetables. At Snyder Research Farm you’ll find the annual varietal evaluation of herbs and specialty crops research and development efforts plus annual taste tasting of new herbs and flavors where basic research on plant genetics, genetic diversity, plant breeding, natural products discovery and characterization are interwoven with organic production systems and new crop introduction trials.

Top Left: Professor Jim Simon, Rutgers examining one of the dozen new chilling tolerant Italian Sweet Basils hybrids they had created which exhibits the look, aroma and high yield of traditional sweet basil, but now has natural cold resistance bred into it.

Catnip does drive cats crazy due to the presence of the compound, nepetalactone, found in the essential oils. Professors Jim Simon and Qing-Li Wu examine one of their catnip selections that not only should be very exciting to your cats as these selections have significantly higher amounts of essential oils and are still rich in nepetalactones, but now the essential oils have also been reported to be a potential repellent and control of certain insect pests.
**Professor Winfred Cowgill** -- Rutgers Cooperative Extension -- County Agricultural Agent and Regional Fruit Agent - Hunterdon County

**Program Focus:** Tree Fruit and Vegetable Crops For New Jersey Farmers

**Fruit Programs:** The Tree Fruit Research and Demonstration Projects at the Rutgers Snyder Farm have shaped the tree fruit industry in New Jersey for the past 18 years. New Jersey tree fruit production is located in both southern and northern counties. Statewide in 2007, tree fruit was valued at $14 million for apples and $36 million for peaches. Retail market fruit production in northern counties is valued at approx. $10-15 million annually.

Professor Cowgill has conducted over 100 trials at Snyder Research Farm in a comprehensive program that benefitted the NJ fruit grower’s. The focus of this work is on how to help commercial farmers stay profitable providing healthy food for the citizens of New Jersey. The applied work done at Snyder Research Farm serves as the basis for the commercial horticulture recommendations for apples and cherries in the New Jersey Tree Fruit Production. The Production Guide is published annually. This work includes trials on:

- Apple, Cherry, Peach variety trials
- Dwarfing Rootstocks to allow high density production on smaller trees
- New production systems for apples
- Extensive trials on plant growth regulators to provide growers with management tools for fruit production
- Nutrition and pest management

**Grower Comments:**

*Gary Mount* - Terhune Orchards, Princeton, NJ – “Win Cowgill’s tree fruit program at the Rutgers Snyder Research Farm is an invaluable source of information to me and a demonstration of agricultural techniques that I can view hands-on to assist in making business decisions. It has helped to shape and guide my orchard expansion for the past 15 years.”

*George Melick* - Melick’s Town Farm, Oldwick, NJ – “The Rutgers Snyder Farm Tree Fruit Program is a tremendous asset to the fruit growers of New Jersey. Win Cowgill’s hands-on applied research and demonstrations have provided essential information to our business operation and allowed us to adopt new modern orcharding techniques. Having this facility and work in North Jersey is irreplaceable.”

**Tomatoes** - Applied Research on Tomatoes - Tomatoes are one of the most significant vegetable crops produced in New Jersey. Professor Cowgill obtained two USDA SARE grants for developing a tomato disease forecasting system at the Rutgers Snyder Farm. The impact was that growers using this forecasting system only applied disease control pesticides when needed and eliminated 1-3 spray applications annually.

**Pumpkins** – Applied Research on Pumpkins – Pumpkins are one of the most valuable vegetable crops to NJ farmers. They have become an essential part of the emerging ‘Entertainment Farming’ theme. Cowgill led a team at Snyder Farm in applied research and extension program development for pumpkins. An IPM program has been developed focusing on the use of powdery mildew tolerant cultivars, field scouting for disease control initiation and extensive fungicide evaluations for efficacy and cost effectiveness. Impacts are that growers have adopted new disease tolerant varieties, reduced pesticide applications and significantly increased their yields.

**William Tietjen** -- Rutgers Cooperative Extension -- County Agricultural Agent -- Warren County

**Program Focus:** Bell Peppers Production for New Jersey Farmers

Bell peppers continue to be an important crop for New Jersey growers especially for the Roadside and Green Markets. Producing and marketing high-quality colored peppers is a labor-intensive and costly endeavor. Colored peppers receive a premium price and are very popular with today’s health-conscious consumers. Pepper breeders are continually developing improved pepper varieties with increased resistance to devastating diseases such as Phytophthora. Bell pepper breeders also have developed improved color, shape and uniformity of production. Distinguishing the differences between the older varieties and recent developments benefit local farmers as they make their planting selections. Choosing the varieties with high yields, excellent color and uniformity addresses consumer tastes while enhancing farm profitability.
Field experiments conducted at the Snyder Research and Extension Farm over the last two decades demonstrated that New Jersey farms can benefit from leaves collected from city shade trees. Leaves have been found to be a valuable resource for building soil fertility and organic matter content. Leaves contain plant nutrients that are released slowly to crops over a period of several years after application. The material is especially rich in calcium and tends to cause a slight elevation in soil pH. The improvements in soil quality associated with the build up of soil organic matter content was found to increase soil water holding capacity and reduce drought stress in corn and soybean crops grown on land amended with shade tree leaves. Field trials with pumpkin found that when leaves are applied as surface mulch, the crop could be grown weed free without the need for herbicides. The leaf mulch was also found to increase pumpkin fruit quality and fruit size and it provides inviting field surfaces for growers with U-pick pumpkin operations. Compared to bare soil, the leaf mulch was also observed to be very effective in controlling soil erosion. The benefits of leaf mulch were exhibited in higher yields of sweet corn and rye straw several years after the initial application. Numerous farmers attended field days at the Snyder Farm to observe and learn from these research projects and many of them have adopted the best management practices that were on display.

Dr. Joseph Heckman -- Rutgers University, School of Environmental and Biological Sciences, Rutgers Cooperative Extension -- Specialist in Soil Fertility - Department of Plant Biology and Pathology

Program Focus: Leaves from City Shade Trees Benefit Farm Soils, Organic Crop Production and Soil Fertility

My work at the Snyder Farm has included investigating the production of ethnic and specialty crops such as globe artichokes and calabaza. Crops such as these are important to local farmers who participate in community farmer markets. Offering a unique crop can attract consumers to a farmer’s table to buy that crop as well as other produce that farmers have available. I have also examined strawberry production practices. Strawberries can be a highly profitable crop for local growers; however, the cost of production can also be very high. Optimizing production practices is very important to ensure a maximum return per acre. Finally, my most recent work has focused on fresh market tomato production and tomato flavor. Consumers sometimes complain about the flavor of tomatoes being sold in supermarkets. I am comparing the horticultural characteristics of tomato varieties as well as cooperating on taste evaluations of the fruit. We are anticipating that the results of this work will allow local farmers to choose tomato varieties which produce well and have the excellent “New Jersey Tomato” flavor consumers desire.

Peter Nitzsche -- Rutgers Cooperative Extension -- County Agricultural Agent -- Morris County

Program Focus: Production and Marketing of Jersey Tomatoes/Vegetables and Small Fruits

My work at the Snyder Farm has included investigating the production of ethnic and specialty crops such as globe artichokes and calabaza. Crops such as these are important to local farmers who participate in community farmer markets. Offering a unique crop can attract consumers to a farmer’s table to buy that crop as well as other produce that farmers have available. I have also examined strawberry production practices. Strawberries can be a highly profitable crop for local growers; however, the cost of production can also be very high. Optimizing production practices is very important to ensure a maximum return per acre. Finally, my most recent work has focused on fresh market tomato production and tomato flavor. Consumers sometimes complain about the flavor of tomatoes being sold in supermarkets. I am comparing the horticultural characteristics of tomato varieties as well as cooperating on taste evaluations of the fruit. We are anticipating that the results of this work will allow local farmers to choose tomato varieties which produce well and have the excellent “New Jersey Tomato” flavor consumers desire.

Kurt Alstede - Alstede Farm, Chester, NJ - “The Snyder Farm provided us, for the first time as a North Jersey producer, the resources to insure that we are producing the safest, healthiest, and the most nutritious fruits and vegetables for the people of New Jersey. The Snyder Farm is an essential component to our success as North Jersey growing conditions cannot be duplicated at the research stations located in Southern New Jersey. Research at the Snyder Farm accurately replicates and represents what is actually happening on our farm.”
become extremely popular, with all combination of flesh and skin color now being desired. White skin, white flesh potato is no longer the prime item. The customer wants skin and flesh colors of red, blue, purple, and yellow. Direct, tailgate, roadside, and pick-your-own markets are a main stay in New Jersey for these kinds of potatoes. The standard in these markets is Yukon Gold. It has excellent eating quality both as a baked potato and also for boiling. Yukon Gold is medium maturity, bright smooth skin, and good yielding; however, it is very susceptible to hollow heart and silver scurf. Both defects limit its usefulness as a fresh market potato. Variety screening trials are being conducted to identify clones that have great eye appeal and taste good. Specialty potatoes demand a premium price. Wholesale white or red potatoes may be worth .20/pound, while specialty potatoes will be sold for .75 to 3.00/pound. The data is presented in the NJ White Potato Research Extension Water Resources Program and funded by an EPA grant.

In order to quantify the mass removal of nutrients and sediment by the system, the amount of water flowing into and out of the system needed to be quantified. As a result, a concrete swale and a V-notched weir were designed and constructed. Flow and water quality measurements are collected at these points by automated samplers during rainstorms. To date, two storm events have been captured. During these storms a large volume of water was infiltrated to the soil and suspended sediment settled out in the wetland system. Preliminary results have demonstrated almost 54% removal of total phosphorus from the runoff and very large reductions in the peak discharges of water and nutrients. The project will continue measuring storm events.

Dr. Christopher Obropta -- Rutgers University, School of Environmental and Biological Sciences -- Specialist in Water Resources - Department of Environmental Sciences

Program Focus: Improving New Jersey’s Water Quality
Evaluating Storm Water Best Management Practices (BMPs) for Agricultural Land Uses -- Dr. Christopher Obropta and Robert Miskewitz. During the summer of 2006, a project was initiated to quantify the removal efficiency of the existing on-site constructed wetland system. This project is being conducted by the Rutgers Cooperative Extension Water Resources Program and funded by an EPA grant.

Program Focus: Growing Specialty Potatoes and Cole Crops
New Jersey has a market window for specialty potatoes from July though November. Specialty potatoes have become extremely popular, with all combination of flesh and skin color now being desired. White skin, white flesh potato is no longer the prime item. The customer wants skin and flesh colors of red, blue, purple, and yellow. Direct, tailgate, roadside, and pick-your-own markets are a main stay in New Jersey for these kinds of potatoes. The standard in these markets is Yukon Gold. It has excellent eating quality both as a baked potato and also for boiling. Yukon Gold is medium maturity, bright smooth skin, and good yielding; however, it is very susceptible to hollow heart and silver scurf. Both defects limit its usefulness as a fresh market potato. Variety screening trials are being conducted to identify clones that have great eye appeal and taste good. Specialty potatoes demand a premium price. Wholesale white or red potatoes may be worth .20/pound, while specialty potatoes will be sold for .75 to 3.00/pound. The data is presented in the NJ White Potato Research.

Cole crops -- broccoli, cauliflower, and brussel sprouts are vegetables adapted to the cooler fall season and heavier soils of northern New Jersey. There has been significant media attention regarding the nutritional and medical value of crops such as broccoli. These crops, known to be high in fiber and calcium along with significant antioxidant levels, provide healthy fresh vegetables in our diet. Home gardeners can grow these healthful vegetables well into the late fall season.

Plant breeders are continually improving varieties for both yield and quality. A more recent introduction is Broccoflower, a cross between broccoli and cauliflower (photo right). We evaluate the newer and established varieties, making data available to farmers and home gardeners addressing their planting intentions.
The establishment of a wine grape vineyard is a major long-term investment for the wine producers costing many thousands of dollars per acre. Planting the inappropriate cultivars can cause catastrophic economic harm. As part of a multi-state research project, the results of this study will be compared to and validated by results from similar plantings in other areas. This synergy will add to our understanding of the value as well as the limitations of applying results from other locations to our situations in New Jersey. The long-term impacts also include reducing the environmental impact of producing wine grapes by identifying disease and pest resistant cultivars, and facilitating breeding by increasing our understanding of genotype X environment interactions.

The Rutgers University Equine Science Center published an economic impact survey in 2007. Some interesting facts from the survey include: over 42,000 equine animals housed in New Jersey, a total economic impact of $1.1 billion including the racing industry and over 176,000 total acres utilized by equine operations. Additionally the report indicates that there are over 46,000 acres of land utilized in New Jersey to produce hay and grain for the industry. Producing high-quality forage crops either in the form of hay production or pastures is an integral part of the horse industry. Our studies on forage crop production at the Snyder Research and Extension Farm involve developing improved management practices to increase forage crop yield and quality to service this important New Jersey industry. Research activities include improved crop varieties that are adapted to New Jersey climatic conditions, integrated pest management practices and the impact of various fertility programs on crop yield and quality. Farmers and horse industry consumers are invited to field days held at the Snyder Research and Extension Farm.

The Garden State Wine Growers Association represents a growing agricultural industry in New Jersey. Wine producers require information regarding the performance of both traditional global cultivars that have not been widely grown in this region as well as specific niche cultivars that may be well adapted to New Jersey climatic conditions. In addition there are emerging new cultivars from breeding programs such as "La Crescent" that have not been fully evaluated under New Jersey's growing conditions.
Program Focus: Marmorated Stink Bug - a recently introduced exotic insect pest - determining its impact

Over the last several years many New Jersey residents have noticed an invasive winter insect emitting a disagreeable smell within the home. The brown marmorated stink bug (BMS) is an exotic stink bug introduced into the United States in the mid 1990's. Since its initial establishment in Allentown, PA, it spread throughout Pennsylvania, New Jersey, Delaware, Maryland and Virginia. Additional populations exist in Oregon and California. In its native range of Korea, China and Japan, it is a significant agricultural pest in tree fruit and soybeans causing fruit and pod malformations. BMS has also been observed causing damage on apricots, peaches and plums. Since its introduction into the U.S., BMS has caused crop losses in fruit orchards. Frequently hundreds of BMS have been observed on individual fruit and ornamental trees. BMS has been found feeding on at least 20 ornamental trees and shrubs including crabapple, Norway maple, paulownia and roses. Feeding by BMS in ornamentals has been observed to cause early fruit drop reducing the aesthetic qualities of the plants attacked. This is especially true in species like American Cranberry Viburnum (ACV) fruit where ripening of fruit creates colorful displays that are valued more by the homeowner than either the flower or leaves during other times of the year. Determining when feeding actually causes fruit drop in ACV will help us develop properly timed control strategies to prevent this effect.

Snyder Research Farm Assists Aspiring Farmers – one example….Jeremy and Meredith Compton both worked at the Snyder Research Farm for several years and recently started their own “first generation” family farming business. They grow an array of fresh fruits and vegetables at Peaceful Valley Orchards near Clinton, New Jersey.

We asked Jeremy and Meredith to share the importance of the Snyder Research Farm experiences. Jeremy states “Today, I use the skills I learned at the Snyder Research Farm to run my own production agriculture/retail operation. The cutting edge production systems that I was first exposed to, I now implement on my own operation to grow the highest quality produce. The organizational skills I developed while conducting research trials now benefit me by being able to run an organized and ever expanding business”.

As Meredith tells us, “The Snyder Farm gave me the basic foundation I needed to be a successful fruit and vegetable farmer. I not only learned about research trials, but I gained valuable experience about production agriculture. As summer interns, we were expected to assist in the layout, planting, maintenance, and harvest of research plots.” Meredith goes on to say “the most valuable tool I took away from the Snyder Farm was the network of people I was exposed to. I worked with many different farmers, researchers and of course other students, most of whom I still have a relationship with today.”
Snyder Research Farm Outreach to New Jersey Residents

New Jersey Department of Transportation: NJDOT mows 33,000 acres of roadside turfgrass equating to 200,000 acres of seasonal mowing. Roadside turfgrass management is critical to safety, appearance and preservation of road surfaces. Between 2004 and 2006 Snyder Farm Director John Grande and staff developed reduced mowing management studies along Route 206 in Bordentown, New Jersey. The studies demonstrated a 60% reduction in mowing while improving appearance addressing the NJDOT Grassland Eco Mow Zone program. Hands-on demonstration plots were utilized for a field training program of NJDOT personnel. The Assistant NJDOT Commissioner of Operations implemented a similar program statewide resulting in reduced expenses and improved appearance indicating improved turfgrass cover is important for groundwater recharge in reduced water runoff.

Helping New Jersey Homeowners Manage Their Lawns: Farmers grow grass to feed animals, homeowners grow grass for attractive functional lawns. Lawn care represents a significant expense for homeowners. Turfgrass breeders are continually developing low-maintenance lawn grasses requiring less water, fertilizer and mowing. The Snyder Research Farm maintains low-maintenance turfgrass demonstration studies. These plots provide a hands-on training program for homeowners and include our "lawnmower races" demonstrating mowing and turfgrass management principles. The Rutgers Cooperative Extension Master Gardener Helpline volunteers are trained and utilize this information to assist New Jersey residents in their lawn care efforts.

Wildlife Damage to Agricultural Crops: During the 1990’s New Jersey farmers reported extensive white-tailed deer crop damage with losses appearing very significant and threatening their livelihood. The New Jersey Agricultural Experiment Station designated the Snyder Research Farm as the Center for Wildlife Damage Control. One of the first outreach efforts was a comprehensive New Jersey farmer survey "How Are White-Tailed Deer Affecting Agriculture in New Jersey?" which was sent to 4403 New Jersey farm operators. 2142 surveys were returned elucidating extensive dollar losses to farmers from white-tailed deer. 39% of farmers responding indicated losses were intolerable, between $5 and $10 million in crop losses were reported in 1997. The survey data was instrumental in developing a cooperative program between the New Jersey Department of Agriculture and the New Jersey Agricultural Experiment Station. Over the last 10 years the New Jersey Department of Agriculture has cost shared with New Jersey farmers over 1,400,000 feet of deer fencing. The Snyder Research Farm provides fencing distribution and fence installation training seminars for New Jersey farmers as well as follow-up evaluations on the cost-effectiveness of the program.
Reaching the Garden State

**County Pleads: Don’t End Fight Against Gnats**

By Deb Glasserow

Get ready for a seriously gnany summer, folks. Those tiny black flies, the ones that swarm around your head, fly up your nose and dart into your eyes, not to mention biting, will hit Hummer hard this spring and summer, unless something drastic happens.

And there’s not a lot the county Health Department, which handles black fly control, or the treholders, can do about it.

According to Tadhg Rieney, county director of mosquito/vector surveillance and control, “If you’ve had problems before, imagine it being 50 times worse.”

He said the state Department of Environmental Protection has informed Hunterdon, Warren and Mercer counties, Rutgers University, and the state of Pennsylvania that budget cuts will probably prevent New Jersey from contributing the roughly $200,000 it has given annually to black fly reduction efforts here over the last few years.

Freelender Director Frank Fuzzo sent a letter to Gov. McGreevey on March 19, requesting that he leave black fly control in place.

Mr. Fuzzo wrote, “In the mid-1990s, researchers from Rutgers University identified rivers, such as Delaware River and South Branch of the Raritan River, as breeding grounds for these insects. In recent years, Pennsylvania and New Jersey state agencies, along with county agencies, have participated in a cooperative effort to reduce black fly populations and provide relief to residents of the region.”

This cooperative program was successful because multiple agencies contributed, he said. “Rutgers University has provided expertise in the areas of field surveillance and basic research. The Pennsylvania DFR has had a serial (spraying) program in place that has targeted the major source of nuisance black flies breeding in the Delaware River. The Hunterdon County Mosquito and Vector Control Program has provided personnel to locate and treat stretches of the South Branch of the Raritan River.”

He also noted that because the program was developed as a cooperative effort, “the problem has been managed with minimal-dollar input from any one agency. However, the involvement of the state is crucial,” he said.

Mr. Battery saw a similar lesson to the state DFR saying how important the program is. “If there is one thing that we have learned in the past few years, it is that black fly control is not a simple task. The cost of control is usually offset by the benefits of control.”

Mr. Fuzzo also mentioned that the cooperative program between the two states was established in 1998 to control black flies breeding in the Delaware River. The program has been successful in reducing the number of black flies in the area, but it is important to continue the efforts to maintain the gains.

**Black flies:** A more recent insect pest impacting hundreds of thousands of New Jersey residents has re-emerged over the last 15 years. Black flies swarm around people and have a severe impact on their ability to work and enjoy outdoor activities. Everyone from Little League baseball players to electric utility lineman can be adversely affected when black flies are a nuisance. Black flies seeking a blood meal are especially troublesome to young children. Through the original efforts of the Snyder Research Farm, outreach educational programs were developed for New Jersey residents to better understand issues surrounding black flies and the potential for a biological control solution. Funding to suppress black flies was obtained through the New Jersey Legislature at the request of thousands New Jersey residents seeking relief [Neighbors Against Gnats]. A cooperative program with Pennsylvania was initiated and is still in place providing significant relief and reduction in the use of insect repellents.

**Sports Fields Turfgrass Programs for Schools and Municipalities:** Youth sports at the municipal and school level has dramatically expanded over the last 20 years. Sports such as soccer and lacrosse are becoming so popular that almost every municipality and school in New Jersey is struggling to address the increased field requirements. New Jersey newspapers feature natural and artificial turf in headline stories. The Snyder Research Farm over the last 10 years developed training programs for schools and municipalities to better address the expansion of sports played on grass. Developing cost-effective sound programs is important to address the safety and enjoyment of sports by New Jersey’s youth.

Recently, the Snyder Research Farm implemented a new outreach program bringing together stakeholder groups involved in sports fields. Rather than just involving sports fields maintenance staff and financial managers, we wanted to educate parents of young athletes about basic natural turfgrass sports field management. Not only do parents have a vested interest with their children but also as taxpayers. A 7-acre turfgrass sports field site was developed at the Snyder Research Farm based on “farming principles” compiling economic/technical data on field establishment cost.

The fields are used to host sports events bringing together parents, coaches, league officials, financial managers and maintenance staff. Educational presentations/demonstrations regarding sports field development and maintenance are presented during intermissions. The site affords stakeholder groups an opportunity to come together under the umbrella of educational outreach.
What was special in 2008, through the efforts of Jack Rabin Assistant Director of the New Jersey Agricultural Experiment Station was the reintroduction of the heralded Ramapo Tomato. The Ramapo Tomato was developed at Rutgers NJAES in 1968 by Dr. Bernard Pollack. Many years ago it disappeared from seed catalogues. Seed companies were favoring varieties that produced higher yields for commercial growers. Despite its disappearance, Rutgers continued to receive many requests for this tasty tomato and produced small batches throughout the years. Now, the first lot of organically grown genuine Ramapo F1 hybrid seed is available through an effort by Rutgers NJAES. In 2008 over 10,000 packets of seeds were distributed to home gardeners and farmers.

The Melda C. Snyder Teaching Garden is also used to educate the non-farming public on lawn and garden issues. The garden plantings, as well as faculty and staff, offer science-based factual information to home gardeners attending educational events providing up-to-date gardening and lawn care information. The teaching garden focuses attention on such issues as:

- deer resistant landscape plants
- training site for hundreds of Rutgers Cooperative Extension - Master Gardeners volunteers who respond to thousands of inquiries annually at County Agricultural Extension offices throughout New Jersey
- observational plantings of new and ethnic vegetable varieties including All-American Selections
- diverse array of flowering plants for landscapes
- garden mulching and composting information

The Great Tomato Tasting Event was first established in 2002. In 2008 over 1500 people attended the event tasting over 100 varieties of heirloom and hybrid tomato varieties from around the world.
Rob is in the final stages of his degree and is writing his dissertation. Rob is considering a career in academia where he can one day inspire the professionals of tomorrow.

Dr. Stacy Bonos - I would not be where I am today if I had not done a summer internship at the Snyder Farm. The year after I graduated college I was still undecided as to what I wanted to do with my life. Dr. Grande convinced me to do a summer internship at the Snyder Farm. While at the Snyder Farm I was exposed to many different aspects of plant biology research and education. I conducted a study on the interaction of herbicides with wear tolerance in turfgrass. I gave my first scientific presentation at the Northeastern Weed Science Society meeting that winter on the research I had conducted at the Snyder Farm. I decided from that experience to attend graduate school at Rutgers. I am now an Assistant Professor in Turfgrass Breeding at Rutgers University, School of Environmental and Biological Sciences. I love my job and would not trade it for the world. I am conducting research on breeding turfgrass for disease resistance and stress tolerance. I am also breeding tall perennial grasses for biofuel production for the Northeast US. In fact, I have some research plots at the Snyder Farm and hope to expand some of my research there. Just recently, things have come full circle. I was just asked to give the keynote address at the Northeastern Weed Science Society meeting where I gave my very first presentation!
Tadhgh Rainey - Director Mosquito and Vector Control, Hunterdon County - The Snyder Farm afforded me an opportunity to engage directly with the residents of New Jersey to help solve an insect pest problem. Although I didn’t realize it at the time, my experience at the farm led me directly to the profession where I am today. In the mid 1990’s, Simuliid black flies had become a serious pest in northwestern New Jersey. Researchers at the Snyder Farm determined that the species of concern emanated from river corridors. Since their research indicated that black fly problems existed in several counties, it was unclear which river systems played a critical role in production of the adult flies.

My experience at the Snyder Farm stimulated my interest in insects. I proceeded to pursue a master’s degree from Rutgers in entomology, where I worked with mosquitoes and black flies. In the year 2000, I graduated and became employed by the Hunterdon County Department of Health as the director of the mosquito & vector control program. I am employed by the health department in this capacity to this day, and I continue to pursue some of the same initiatives that were started at the Snyder Farm. We work with the local residents of the Hunterdon community to ensure their well being from problematic insects. Most of our work involves mosquitoes, black flies and ticks. Recently, we have been experiencing a resurgence of bed bugs in our region, and we are currently assisting residents with these problems. I had the good fortune of learning the basics of applied entomology and service at the Snyder Farm. I plan to continue this work in the many years to come.

My primary responsibility while working on the farm was to ensure that good integrated pest management practices were incorporated into our black fly project. With a team of students, we conducted larval surveys of all the major river systems in Warren, Hunterdon, Somerset and Mercer Counties. Although many rivers produced the species of interest, it became clear that the Delaware River served as the primary source of larval fly production. Nevertheless, some other rivers, particularly in the Hunterdon area, produced substantial numbers of insects. We provided a thorough surveillance component to the program and documented both areas of relief from black flies and areas where the insects were still problematic.

Rob Davis – Managed Natural Grasses at Giants Stadium - The Snyder Research Farm was very instrumental in my career. I interned at the farm for 2 summers. In ’90 and ’91 the farm was still relatively young and going through its early development. What influenced me the most were the challenges and the diversity of work in those early years. It seemed like we were encountering a new challenge on a daily basis. From figuring out the recently installed irrigation system to learning to operate a new implement for a tractor, I learned to expect the unexpected.

The other aspect of working at the Snyder Research Farm that I enjoyed was the diversity. There are projects on the farm that gave me experiences in horticulture, ornamental horticulture, agronomy, crop production, and even animal husbandry. This gave me the opportunity to apply the lessons I was learning in ornamental horticulture to other related industries.

My experiences as a student intern provided me with strong practical problem solving experience-helping me to go on and develop a career in athletic field turfgrass management. One of my positions involved the management of natural grass for the Meadowlands Stadium, hosting two professional football teams and World Cup soccer for several seasons.
Sandra LaVigne - I was fortunate to come to Snyder Farm as an intern in my junior year. I am a returning college student with a background in the medical field. I have a wonderfully supportive husband and two little girls. Because of my family and especially the desire to see my girls grow up in a better world, I returned to school. Though my main focus is ornithology and conservation, as an ecology and natural resources major I have a broad range of interests related to conservation including the role that current agricultural practices play. Snyder Farm offered me a great opportunity to advance my hands-on knowledge and skills in many areas. The Snyder Farm, as a working educational farm, advanced my knowledge in areas of resource conservation and production of sustainable agricultural products. I look forward to applying my intern experiences to a career as an environmental scientist.

Andrew Wedel – Farm Equipment Inventor – Andrew worked at the Snyder Farm during the summers of 1990 - 1992. In 1990, he worked on corn variety trials; 1991 he worked on tomatoes and peppers; and 1992 he worked on the installation of the weather station and various fruit and vegetable research. “My time at SRF trained me to think like a researcher, which proved especially useful during my MS program at Michigan State. Not only was I trained to think like a researcher, but I learned how to run a project both operationally (data, weather, employees, deadlines, acquisition of shared resources, etc.) in the field as well as financially — that is, working within a budget.”

Following graduation with a BS in Ag Engineering from University of Delaware in 1992, he began a MS program in Ag Engineering at Michigan State (completed 1995). There a system for separating and recycling bedding sand from dairy manure was developed, for which three patents are held. The Sand-Manure Separation technology was licensed to McLanahan Corporation in Hollidaysburg, PA, for whom he now is employed.

He is the General Manager of McLanahan’s Ag Systems Division in addition to being a licensed Professional Engineer (PE) in DE, MI, PA, and WI. “I have designed systems and consulted on dairy manure handling projects throughout the U.S., Europe, Middle East, and South America on dairies as small as 60 cows and as large as 20,000 cows.” He is also a member of the American Society of Agricultural Engineers and a member of the Dairy Housing committee as well as the committee tasked with developing the Professional Engineer Exam in the Agricultural Discipline.
Youth Development

Clifford E. and Melda C. Snyder Student Loan Fund
Administered by the Hunterdon County Board of Agriculture

The Clifford E. and Melda C. Snyder Loan Fund was established under the Last Will and Testament of Melda C. Snyder. The estate provided $300,000 to support a student loan fund for high school students pursuing a college career in agricultural and related sciences. The first loan was awarded in 1998 and as of May 2008 there has been $358,500 awarded to a total of 44 students.

Clifford and Melda, with their strong beliefs in education and hard work, believed a zero interest loan, repaid by recipients as they advanced their career, would better serve current and future recipients providing for more students to advance their educational careers.

Michele Lavigne – Michele received support from the Snyder Loan Fund from her freshman year of college through her first year of graduate school. The Snyder Loan Fund allowed her to pursue an undergraduate career at Hampshire College in Western Massachusetts.

"With the help of the Snyder Loan Fund, I had an excellent experience as an undergraduate at an institution that encouraged independent student research in the environmental sciences. My professors at Hampshire encouraged me to continue my education in graduate school, where I am now approaching the end of my Ph.D. in oceanography. My Ph.D. thesis is focused on the geochemistry of corals and using corals as recorders of coastal eutrophication and coral health." Upon completion of her Ph.D., she plans to pursue a career in academia as a professor.

Katie Moore - Katie received a loan for the four years at Rutgers University’s - School of Environmental and Biological Sciences (SEBS) formerly Cook College.

"I am so grateful that I have had the aid in order to complete my Bachelor’s degree in Plant Science." Katie is in her senior year and is planning to work in the field of Plant Protection. This field entails working outdoors and in the lab investigating plant diseases and symptoms and how to improve or eliminate the problem. "Without the Snyder Loan, I would not have been able to pursue my passion for plants.”
High School Students Gain Experience at Snyder Research Farm...

Administrators at the School of Environmental and Biological Sciences recently provided support to the Snyder Research Farm to reach out to potential agriculture/environmental science high school students who show an interest in a career in this area.

“Alex Janssen – High School Junior – “I began working at Snyder Research and Extension Farm in March of 2008. Working at the farm has given me a multitude of experiences I could not learn in public school, from learning how farms work, harvesting corn and tomatoes, pruning apple trees while they are dormant in spring, baling hay, and irrigation work. Working at Snyder Farm for the past six months has opened my eyes to a career in agriculture, from turf grass breeding to timber farming. Many options and opportunities in a field I had been unaware of prior to my work.”

Farm Camp for City Youth

Farm Camp Designed To Nurture City Kids

By Christopher Ruvo

Eleven teenagers from Newark traded city streets for corn fields when they attended farm camp at Rutgers University’s Snyder Research & Extension Farm in Franklin Township last week.

The camp’s purpose was to introduce agriculture into the lives of city kids in partnership with the Greater Newark Conservancy, a nonprofit environmental and horticultural agency, and Project Urban Suburban Environment, another nonprofit that exposes kids in those areas to rural and outdoor activities.

The teens spent two nights camping out in a field on the edge of woods on the 400-acre property. Their days combined a mixture of hard work and fun. Camp began with a hayride, but soon the campers were at work weeding and harvesting vegetables and fruits and grunting fruit trees.

The camp was also informative and forward-looking. With most campers entering their senior year of high school, they learned about horticultural and agricultural career opportunities, particularly turf grass management. And Pittstown Inn executive chef Jonas Gold taught them how to cook savory dishes with the organic vegetables they picked at the Kylend Inn in Whitehouse.

“We wanted to bring the kids out of the city and make them part of a team effort out here,” said PUSE counselor Liz Feldman, gesturing to the broad expanse of corn fields. Ms. Feldman camped out with the kids and participated in activities. She said each of the campers had something they liked about camp and something they didn’t; working in the hot sun or whipping rain wasn’t a splash. Still, she said, learning where food comes and investigating possible career opportunities was a major plus.

John Grande, director of the Extension farm, gave an in-depth talk on turf grass management, since such jobs are available in cities where green areas are often given over to sports fields and parks.

One teen, Ima Madyun, said he’d like to go into that line of work, possibly managing golf courses or city parks. He said he’s interested in attending Cook College’s vaunted turf management program, with which the Extension is affiliated.

“I didn’t know stuff like this was out there,” he said. “But it’s good money and a good job — working outside. Learning about that was cool.”
Rutgers Against Hunger Programs

Donating Snyder Research Farm Fresh Fruits and Vegetables:
Rutgers University - President McCormick recently launched Rutgers Against Hunger (RAH), an initiative combining volunteerism, research, education, and donations to help feed New Jersey’s hungry and address food security. Our staff is constantly questioned by visitors regarding what we do with all the fresh fruits and vegetables grown. Through volunteer efforts of Snyder Research Farm Staff and Rutgers Cooperative Extension Master Gardener volunteer program, over 800,000 pounds of fresh fruits and vegetables have been distributed to New Jersey food banks and soup kitchens over the past 15 years.

Snyder Research Farm Staff

John Grande,
Director

Edwin Dager,
Research Farm Supervisor

Joanne Stevely,
Administrative Assistant

Robert Hasse,
Head Research Farmer

Henry Fischetti,
Soils & Plants Technician

James Pauch,
Head Soils & Plants Technician

Geoffrey Slifer,
Head Soils & Plants Technician