NNYADP RFP Research Ideas

2015-2016

# LOCAL FOODS

1. Review different food hub projects and models in the US in light of NNY needs.
2. Interview NNY farmers, marketers, deliverers, and buyers of local food for input on their needs.
3. Evaluate the current marketing resources and needs in Lake Placid, Plattsburgh, Malone, Canton, Watertown and Lowville.
4. Develop guidelines to be used by investors and granting agencies for each market region to evaluate proposal characteristics that have the best chance of success.
5. Hold classes on “Types of Cooperation/Organization” for farmers and marketers to facilitate the movement of food around the NNY region.

# FIELD CROPS

1. Snout beetle management, including a means for getting farmers more involved than they have been.  (Ex: 4-H or FFA to grow the nematodes as a project).
2. Identification of cover crop seed that can be planted together with corn and will germinate at layby.
3. Test custom drag hose operations – how to minimize compaction and get higher silage yields in NNY.  Would moving sand through them be feasible (given that sand bedding leads to less mastitis).
4. Identify opportunities for increased energy efficiency in NNY crop production systems.
5. Tile drainage and nutrient management: monitor nutrient loss through tile drains on various soils and on operating farms across NNY.
6. Test well adapted and high yielding ASB resistant alfalfa varieties
7. Determine experimental populations of resistant strains that are high yielding in ASB infested fields.
8. Determine yield potential of strains developed from plants that survived in a field inoculated with Brown Root Rot.
9. Test whether alfalfa winter survival scores from a test developed in the Midwest for characterizing alfalfa varieties predicts winter survival for NNY producers.
10. Identify perennial grass species that are less competitive in a mixture with alfalfa.
11. Create a computerized soil management program based on recent nutrient management and soil health research.
12. Evaluate a system of pre-harvest estimation of mixed stand NDF in alfalfa grass mixtures.
13. Continue on-farm biocontrol nematode plots for controlling ASB.
14. Postharvest evaluation of alfalfa grass species composition for evaluating: a) when to start treating the field as a grass stand from a fertilizer standpoint,
    1. b) when to consider rotating the field and c) to assess stand deterioration due to ASB.
15. What grass species will withstand weather swings and thrive in NNY?
16. What warm season perennials might be adaptable to NNY?
17. Evaluate manure application options to reduce losses and improve nutrient use efficiency.
18. Develop methods to accurately predict crop nutrient requirements, enhance efficiency and protect soil and water resources.
19. Is foliage fertilizer beneficial for agronomist crops on a larger scale in NNY?
20. Research/demonstrations of new and improved alfalfa grass mixtures for NNY. Are there alternatives to the standard recommendations that might improve yield and quality? (example—less aggressive grasses like non-heading orchard grass and meadow fescue)
21. Double forage crops to increase production and reduce risk: economic considerations, species, planting date nutrient management for optimal yield and forage quality.
22. Follow up on initial studies with cover crops: yields/quality; application rate for manure; manure injection vs. surface tillage; impact of soil type etc.
23. Evaluate economic and environmental impacts in all crop research.
24. Evaluate corn yield potential database on NNY farms.
25. Test NDVI/Greenseeker technology to evaluate the nitrogen needs of corn.
26. Can we recover any of the dry matter left in field after corn grain harvest?
27. What are the potential benefits of precision agriculture and use of drones in NNY crop production?
28. Continue work to increase production of organic grains for local processing and to meet local food demand.
29. Identify annual warm season forage options: species, planting date, nutrient management etc.
30. Research/demonstrations on the benefits of management intensive grazing for dairy, beef and sheep.
31. Monitor insect pressure, damage and treatment in NNY forage and grains.
32. Assess disease pressures and timing in NNY corn and soybeans.

# DAIRY

1. Tying in the economic decision making of a dairy farm on a whole systems approach.
2. Evaluating calf housing and impact on calf respiratory disease.
3. Impacts of thermal stress (cold and hot weather) on nutrient needs of calves and lactating animals in NNY and how it impacts productive parameters.
4. Get up to speed and stay current on air quality regulations and potential programs.
5. Culling-what new practices/techniques can be applied to improve decision-making (e.g. genetic testing)
6. Rework cost of raising replacements.
7. Rumen/gut development in ad lib and acidified milk/MR fed calves.
8. Feed efficiency in ad lib acidified mile/MR fed calves.
9. Lameness and cow comfort.
10. On farm water quality and impact of water quality on production parameters.
11. Replacement management training—calf to breeding age.
12. Herdspersons schools and milker training.
13. Calf necropsy.

# LIVESTOCK

1. Develop Dairy Beef business in NNY.
2. Increase value added opportunities for Livestock Producers.
3. Develop USDA Graded Feeder Cattle Markets to increase profitability.
4. BQA- Beef Quality Assurance –work to promote this program more with producers.
5. Identifying and selecting optimum dietary ingredients for NNY goat and sheep production.
6. Internal parasite control for sheep and goats in NNY
7. What is an optimal grazing strategy for NNY for livestock?
8. Develop no-till pasture seeding guidelines for NNY.
9. Cost benefit analysis tools for converting from dairy to beef or other livestock production.
10. Cover crops as emergency forage for harvest or grazing.
11. Summer annuals for grazing.
12. Research/demonstrations on benefits (increased gain) on improved pastures.
13. Research/demonstrations on the benefits of management intensive grazing.
14. Sheep for grazing in vineyards -might be a potential for a livestock or grape research grant.
15. Optimizing marketing channels- NNY location limits livestock marketing ability.
16. Regional livestock marketing/infrastructure development.

# HORTICULTURAL CROPS

1. Cold hardy grapes
   1. Continue research, demonstration and outreach on variety testing, best management practices (trellising, canopy management etc.,) and business management for cold hardy grapes. Includes repurposing the Baker Farm Vineyard and continuing to work with growers in the St. Lawrence and Champlain Valleys.
   2. Assess the economic impact of establishing vineyards, wineries and associate tourism on local and regional NNY economies.
   3. Frost mitigation—both spring and fall.
   4. Organic vineyards under NNY conditions.
   5. Nutrient applications and management—what’s best under NNY soil and climate conditions?
2. Adapt biocontrol nematode technology to other cropping systems (root weevils that attack all berries and black vine weevil that attacks ornamentals.
3. Adapt biocontrol nematode technology to turf grass on golf courses.
4. Season extension
   1. Techniques to grow fruit/vegetables year around: Crops beyond traditional tomatoes and winter greens; melons and other nontraditional crops for summer tunnels
   2. Advances in greenhouse and high tunnel production such as grafting on to cold hardy rootstocks and row covers inside tunnels.
   3. Energy conservation in greenhouses: heat sinks, solar gain, insulation etc.
   4. More on appropriate use and management of caterpillar/low tunnels.
   5. Adding light to tunnels—is it cost effective?
5. Fertility management for vegetables
6. Drip irrigation for increased yield and economic returns
7. Emerging pests and disease threats for NNY vegetable production
   1. Dealing with unprecedented increases in disease and insect pests—both long standing and invasive that are becoming commonplace.
   2. Disease resistant varieties suited for cold climate.
   3. Efficacy of organic pesticides, bio-pesticide products—side-by-side comparisons.
8. Weed management in vegetable crops—conventional and organic. Reduce use of herbicides between rows in plasticulture systems; study feasibility of inter-row cover crop under NNY conditions.
9. Soil amendment/improvement: soil amendment options; manure management; cover crop strategies for short rotations.
10. Deer control.
11. Food safety and post-harvest handling.
12. Enhancing pollination with the decline in honey bees.

# MAPLE PRODUCTION

1. Research on controlling native and non-native interfering vegetation in the sugarbush.
2. Research on 3/16 tubing yields under a gravity based system and hooked up to a vacuum pump.
3. Maple tree regeneration-dealing with damage to sugarbush regrowth by deer.
4. Enhancing natural vacuum with smaller tubing.
5. Looking into maple decline and potential invasive insects in sugarbushes.
6. Climate change and tapping recommendations.
7. Feasibility of a bulk syrup processing facility.
8. Birch and walnut syrup production as complementary enterprises for maple producers.
9. Value added maple confections as a way to enhance maple sales.