

## 2019-2020 NY Vegetable Research Council and Association Priorities

*These priorities are ranked in order of importance by crop*

### Beet Research Priorities

#### High Priority:

- **Weed Control.** In particular, redroot pigweed, lamb's quarters, nightshades, jimsonweed, velvetleaf, ragweed and fall panicum. Maintain current chemicals and continue evaluation of new products.
- **Reducing Decay in Beets.** Includes chemical and cultural controls as well as ways to assay fields to determine decay potential
- **Maintaining foliage health.** Timing of fungicide sprays, fertility treatments or growth regulators to optimize beet tops for harvest. Registration of new mode of action fungicides for Cercospora. Organic disease control options using OMRI certified products.
- **Stand Establishment and managing size.** Ways to maximize small beets and minimize large beets, including methods of suppressing large beets, varying spacing, or varieties. Better and more uniform germination. Identifying products that may delay germination or reduce stand. Challenges in NY beet size as compared to Midwest. Midwest consistently produces better size despite same seed used – why?

#### Medium Priority:

- **New Products.** Food or non-food products, especially for utilizing larger beets.
- **Seed Quality.** Seed age, germination, and vigor.
- Reduced tillage practices.

### Carrot Research Priorities

#### High Priority

- **Weed Control.** Broadleaves, especially ragweed and pigweed. Marestalk control. Alternatives to Lorox. Continue to monitor for resistant weeds.
- **Disease Management.** Evaluate new products and application methods to maintain healthy tops & roots with additional focus on growth regulators, timing, and rates. Black Center.
- **Nematode Management.** Evaluate seed treatments and Vydate alternatives as well as new products. Monitor Product Availability. Be prepared if any new products are coming or going due to new regulations or resistance issues.
- Technology to help move toward crown carrots.

## Snap Bean and Lima Bean Research Priorities

### High Priority:

- **Weed Control.** Includes new products, rates and cost effectiveness. Particularly for common lamb's quarters, velvetleaf and nightshade.
- **Variety Evaluation and Breeding.** Includes heat tolerance, white and gray mold and virus resistance, managing seed size and sieve size, yield factors (planting dates and populations) and harvest ability (plant height, direction of pick, ease of picking). Assess variety differences in response to root rot resistance and nitrogen for snap and lima beans.
- **White and Gray Mold**
- **Fertility**
- **Lima Bean Disease Control.** Better understand foliar diseases in lima beans and more effective timing of fungicide applications.
- **Seedcorn Maggot and Early Season Leafhopper Management.** Prepare for potential loss of neonicotinoid insecticides.
- **Snap Bean Nitrogen Management.** Snap bean yield response to late maturity nitrogen management.
- **Pod Quality Control.** Includes pod mold control (timing of application and products), Phytophthora impact, managing seed size/sieve size, identifying and controlling rust/russet (unmarketable pods), and insect damage to pods.
- **European Corn Borer Management.** Evaluate new insecticides, application techniques and application timings that will improve control and reduce cost. Develop a risk assessment model based on factors associated with ECB infestations to be used in making insecticide control decisions for ECB, while keeping in mind a zero to very low tolerance.
- **Lima Bean Nutrient and Water Management.** Nitrogen requirements for lima bean including timing, rate, best way to get the total required by plant.
- **Contaminants.** Including animals like slugs, frogs, snakes, stones as related to reduced tillage practices, and plant debris, especially wheat and other cover crops with seeds containing gluten.

### Medium Priority:

- **Lima Bean Plant Population** – Evaluate ideal row spacing and plant number.

## Pea Research Priorities

### High Priority

- **Weed Control.** In particular, chemical control of thistles, daisies, nightshade (with respect to both berry and Colorado potato beetle contamination) and

grasses, particularly fall panicum, wild proso millet. Optimal timing for control with existing herbicides. Continue to evaluate new herbicides.

- **Contaminants (other than weeds).** Colorado potato beetles (see comments under weed control above), daisies and especially slugs and snails. Plant debris, especially wheat and other cover crops with seeds containing gluten. Work with harvester manufacturers to develop better contaminant screening.
- **Variety evaluation.** For root rots, yield, sieve size, and tenderometer readings. Continue evaluating afila types. Priority is for evaluations done under production conditions (grower fields).

### **Medium Priority:**

- **Fertilizer evaluation.** Techniques, application rates, and placement timing for effect on yield.
- **Inoculant and growth regulator evaluation** as new products arise. Application rates, methods, timing for their effect on yield, tenderometer readings and maturity dates, methods to evaluate need for application (such as soil testing methodologies), and the development of methods to determine potential inoculant carry-over between crops (such as in pea following soybean).

## **Sweet Corn Research Priorities**

### **High Priority:**

- **Weed Control.** Broadleaves and annuals. Refine timings for most effective herbicide applications. Herbicide rotations for resistance management.
- **Variety Evaluation.** Includes level of disease (especially for rust, NCLB and smut), insect susceptibility and horticultural characteristics
- **Season Long Insect Control** - Worm management especially western bean cutworm, corn earworm. Includes cultural and biological methods and evaluating new chemistries that can complement pyrethroids along with most effective timing of applications. Seed treatments for control of flea beetles, rootworms, black and variegated cut worms, wireworms and seed corn maggot with emphasis on efficacy and cost. Prepare for possible loss of neonicotinoid seed treatments. Monitor for Brown Marmorated Stink Bug and ECB.

### **Medium Priority:**

- **New Nitrogen modeling technology** on sweet corn industry found and adapted from grain corn industry.
- **Non-chemical Pest Management.** Support for seeking external funding.
- **Disease Management.** Fungicides and varieties for disease management. Includes Rust, Stewarts Wilt, and especially Northern Corn Leaf Blight. Application timing as related to corn growth stage. Monitor for Goss's wilt and other emerging pathogens.

## Cross-Commodity Research Needs

### High Priority:

- **Long-term sustainable soil health management, conservation tillage**  
Management practices to minimize drought/flooding events. Soil remediation to reduce effects of flooding and drought.
- **Organic Production.** Includes the feasibility of transitioning, non-chemical weed and pest control. Support for seeking external funding
- **Precision Ag Opportunities** to decrease variability in crops and increase yields.
- **Pesticide Evaluations.** Continue research to replace currently registered pesticides that might be lost due to regulations in the near future. **Weed Control.** Monitor for herbicide resistance. See individual crops below for specific problems.
- **Cultural Practices for Yield and Quality Enhancement.** Includes investigations of row spacing, populations, soil additives, seed treatments, fertility (timing, application, and materials), rotation, soil compaction management, improved interpretation of Soil Health test for vegetable production, tillage practices, cover crops and stand establishment.
- **Root Rot Management.** For peas, beans, and beets. Includes new directions in cover crops or other cultural practices. Evaluate efficacy of currently labeled materials.
- **Seed Treatments.** Includes fungicides for soil-borne pathogens, and insecticides for seed maggots and other crop specific insect pests. Evaluate bio pesticides.
- **Pest Management Strategic Plans.** Support for development of plans for processing crops through outside funding.
- **Economics of Processing Vegetable Production.** Generating information on costs of production and risk factors. Information will be used to develop a better crop insurance program. Leveraging outside resources, e.g. Cornell and NYS Farm Viability Institute.
- **Adoption of New Marketing Opportunities/New Crops/New Products When They Arise. Spray Technology.** Emphasis on the latest technology that will allow for the most effective application of pest management materials.
- **Non-chemical Pest Management.** Support for seeking external funding. This includes practices from biotechnology, organic agriculture, and traditional agriculture.
- **Better Farm Record Keeping** – Collaborate with other states and entities to develop effective ways to keep farm records needed to meet buyer expectations. Develop outreach programs to help farmers meet the need for electronic record keeping (software).
- **Phosphorus Management.** Includes support for seeking external funding as well as further study on variety response to added P on high P soils.