

## 2022 Vegetable Education, Research & Regulatory Priorities

Priorities were identified by the Northeast Vegetable Pest Alerts Working Group (members include crop production and crop protection specialists, extension educators, agricultural service providers, and non-profit agricultural educators from MA, ME, NH, VT, RI, CT, NY, and Canada). Priorities were then ranked using a Qualtrics survey which was completed by 17 member of the working group.

Rank	Rank the following EDUCATIONAL priorities for vegetable growers in the northeast (1 = most important):	Mean Score
1	Weed Management	5.7
2	Best Management Practices (BMPs) for Pest Management*	5.8
3	Soil Health Practices*	7.0
4	Pest Identification	8.3
5	Cover Crops, Alternative Fertility Approaches/Offsets to Fertilizer Costs	8.5
6	Crop Nutrition	8.7
7	Best Management Practices (BMPs) for Using Beneficial Organisms	9.3
8	Resistance Management	10.4
9	Innovative New Crops*	11.3
10	Using Thresholds to Make IPM Decisions	12.2
11	Labor Management, Recruitment & Retention	12.4
12	Business Management	12.8
13	Irrigation	12.8
14	Pollinator Protection*	12.8
15	Food Safety	13.0
16	DEI practices*	13.4
17	Post-Harvest Practices*	15.3
18	Agricultural Technology*	15.7
19	Biofumigants	16.1
20	Variety Recommendations	18.1
21	Sprayer Application, Calibration, Equipment Selection	18.3
22	Wildlife Management	19.1
23	Water Quality	19.4
24	Marketing	19.8
25	Record-keeping	20.0
26	Utility Buildings/Structures	24.8

\* priority topics with subcategories

Rank	Rank the following RESEARCH priorities for vegetable growers in the northeast (1 = most important):	Mean Score
1	Applied Research on Pest Management/IPM Practices*	3.4
2	Climate Change*	5.4
3	Soil Health*	6.5
4	Crop Nutrition*	6.7
5	Weed Management*	6.7
6	Variety Testing	7.4
7	Basic Research on Pest Biology (pertinent to management) *	7.7
8	Pesticide Application*	7.9
9	Innovative New Crops*	8.3
10	Irrigation	8.6
11	Post-Harvest Handling & Storage	9.5
12	Agricultural Technology*	9.6
13	Biodegradable Mulches	10.6
14	Wildlife Management	10.7
15	Environmental Contaminants*	11.0

\* priority topics with subcategories

Rank	Rank the following REGULATORY priorities for vegetable growers in the northeast (1 = most important):	Mean Score
1	Labor Sourcing & Recruiting	3.82
2	Pesticide Packaging (not compatible with small, diversified farmers' needs)	3.82
3	Nutrient Management	6.18
4	Pollinators	7.09
5	Solar in Agriculture	7.45
6	Worker Protection & Training Compliance	7.91
7	Regional Pesticide Labeling (state variations)	8
8	Traceability Technology	9
9	Hemp	9.18
10	Overtime for Agricultural Workers	9.18
11	PFAS uptake, safe levels for crops, soils, irrigation waters	9.55
12	Pesticide Buy Backs, Pesticide Disposal	9.73
13	Wildlife Regulations	10.55

Do you agree that the following **BMPs for pest management** are educational priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Using Pesticides in Organic Systems	92%	0%	8%
Using Biological Controls	92%	0%	8%
Pests Affecting High Tunnel Production	83%	0%	17%
Neonicotinoid Alternatives	67%	8%	25%
Swede Midge	67%	0%	33%
Leek Moth	58%	17%	25%
Allium Leafminer	42%	8%	50%
Spotted Lanternfly	33%	25%	42%
Pests Affecting Hydroponic Production	17%	33%	50%

Do you agree that the following **soil health practices** are educational priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Cover Cropping	100%	0%	0%
Practices that Maintain Biodiversity	83%	0%	17%
No-Till	75%	0%	25%
Soil Carbon Sequestration	42%	8%	50%

Do you agree that the following **innovative new crops** are educational priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
High Tunnel Production	92%	0%	8%
Microgreens	50%	8%	42%
Hemp	42%	17%	42%
Hydroponic Production	17%	33%	50%
Mushrooms	17%	8%	75%

Do you agree that the following **pollinator protection** topics are educational priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Integrating Pollinator Protection into Pest Management (IPPM)	75%	0%	25%
Improving & Protecting Pollinator Habitat	67%	0%	33%
Non-Target Organism Advisory Label Statements	33%	17%	50%

Rank how the following **DEI practices** should be prioritized:

Rank	Topic	Mean Score
1	Reaching underserved communities with existing resources	1.82
2	Professional development for extension educators	2.36
3	Tailoring outreach education to underserved communities	2.64
4	Translate resources into other languages	3.18

Do you agree that the following **post-harvest** topics are educational priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Handling & Storage for Food Safety	100%	0%	0%
Post-Harvest Diseases/Maladies	83%	0%	17%
Storage Infrastructure	83%	0%	17%

Do you agree that the following **Ag Technology** subject areas are educational priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Automation for Protected Ag (e.g. active ventilation, auto roll up sides on tunnels, other sensors)	75%	0%	25%
Automation for Irrigation Systems, Other			
Outdoor Environmental Sensors	50%	0%	50%
AI & Precision Agriculture	0%	17%	83%

### Additional Comments on Educational Priorities

Although this isn't my area of expertise, I know that labor, markets, and low prices are very important issues on farms near me. Many farmers are good horticulturalists but need more business assistance.

I put food safety and business related topics towards the bottom of my priorities list not because they aren't important -- we should all be literate in this subject, but because there are other Extension professionals dealing with those topics through other programs, to the extent we dive it should be in collaboration with those who specialize in it.

With the new wage law, our farms need to be hyper focused on staying in business and being as efficient and economical as possible.

Include "climate resiliency" as an additional educational priority.

Do you agree that the following areas for **applied research on pest management practices** are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Interactions between insect, disease, weed management	100%	0%	0%
Cucurbit IPM (cucumber beetle, bacterial wilt, etc.)	100%	0%	0%
Bacterial disease management	91%	0%	9%
Bee-safe practices	82%	0%	18%
Cover cropping for disease suppression	82%	0%	18%
Cucurbit downy mildew	82%	0%	18%
Efficacy trials - organic	82%	0%	18%
Winter cutworm (and other soil-dwelling caterpillars)	82%	0%	18%
Swede midge	82%	0%	18%
Leaf mold in high tunnels	82%	18%	0%
Using thresholds for sweet corn pests	73%	0%	27%
Cabbage aphid	73%	0%	27%
Extended season pests/maladies	73%	9%	18%
Late blight management for organic systems	73%	9%	18%
Basil downy mildew	64%	9%	27%
Efficacy trials - conventional	64%	18%	18%
Wireworms	64%	9%	27%
Leek moth	64%	9%	27%
Managing birds in sweet corn	55%	9%	36%
Late blight management	55%	18%	27%
Allium leafminer	55%	0%	45%
Steam sterilization	45%	0%	55%
Incorporating animals into vegetable production (food safety, IPM, nutrient cycling)	45%	9%	45%
Spotted lanternfly	27%	36%	36%
Asparagus beetle	9%	9%	82%

Do you agree that the following **climate change** topics are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Tools for adapting to climate change	100%	0%	0%
Identifying new & emerging pests	91%	0%	9%
Predictive Models	64%	9%	27%
Hemp for carbon sequestration	9%	45%	45%

Do you agree that the following **soil health** topics are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
No-Till Production (and collateral damage)	91%	0%	9%
Cover crops and living mulch as soil health practices	91%	0%	9%
Fertility of soil	82%	0%	18%
Jumping Worms (and other invasive soil organisms)	45%	9%	45%

Do you agree that the following **crop nutrition** topics are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Recommendations for high tunnel production	91%	0%	9%
Cover cropping and living mulches as alternatives to fertilizer	91%	0%	9%
Incorporating animals into vegetable production	36%	18%	45%

Do you agree that the following **weed management** topics are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Efficacy trials - organic	91%	9%	0%
Weed management between plastic beds	82%	9%	9%
Efficacy trials -conventional	64%	9%	27%
Identifying chemical resistant weed species	36%	9%	55%

Do you agree that the following areas for **basic research on pest management biology (pertinent to management)** are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Cucurbit downy mildew	100%	0%	0%
Bacterial diseases	91%	0%	9%
Cabbage aphid	82%	9%	9%
Winter cutworm (and other soil-dwelling caterpillars)	82%	0%	18%
Phytophthora blight	82%	0%	18%
Basil downy mildew	73%	9%	18%
Extended season pests/maladies	73%	9%	18%
Wireworms	73%	9%	18%
Swede midge	73%	0%	27%
Leek moth	73%	0%	27%
Allium leafminer	45%	0%	55%
Spotted lanternfly	36%	18%	45%

Do you agree that the following **pesticide application** topics are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Synergists/Pesticide Additives	91%	0%	9%
Water Quality Effects on Pesticide Efficacy	73%	0%	27%
New Sprayer Technology	64%	9%	27%
Sprayer Calibration	36%	36%	27%

Do you agree that the following **innovative new crops** are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
High Tunnel Crops	91%	0%	9%
disease resistant varieties - general	88%	0%	13%
Winter Greens	82%	0%	18%
spinach varieties with disease resistance	82%	0%	18%
Microgreens	55%	18%	27%
Hydroponic Crops	27%	36%	36%
Mushrooms	27%	9%	64%

Do you agree that the following **agricultural technology** areas are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
High Tunnel Environmental Management & Engineering	64%	9%	27%
Steam Sterilization	36%	0%	64%
AI and Precision Ag	18%	9%	73%

Do you agree that the following topics related to **environmental contamination** are research priorities for your growers?

Topic	Agree	Disagree	Agree, for a small portion of my audience
Water quality effects on crop health (e.g. pH, salinity)	73%	0%	27%
Microplastics in Ag Soils	55%	0%	45%
PFAS uptake, safe levels for crops, soils, & waters	55%	0%	45%

### Additional Comments on Research Priorities

Prioritize research that improves efficiency and results in low cost, low labor practices for growers

This is challenging because all are important. I voted down some issues that have already been researched/not new

Food safety should be it's own research topic in addition to post harvest handling, water quality and wildlife which are covered above, there's also manure management and the transfer of pathogens of human health significance from water, manure, or handling practices to the food and again to the human -- having a catch all "food safety" covers that.

### Additional Comments on Regulatory Priorities

Food Safety and Hemp BY FAR, like leagues above the rest. We're losing literally thousands of acres, including a lot of veg acreage, every few months in just a handful of counties that represent our best upstate veg ground.

Cannabis regulation should be included in the priority rankings.