

GROWERTALKS

Features

2/1/2020

Setting Priorities

Compiled by Jennifer Zurko, with JC Chong & Dr. Jill Calabro

Employment sector for survey participants (single selection option)

SEGMENT	COUNT	PERCENT
Extension	22	14%
Government	3	1%
Grower	92	60%
Industry	9	5%
Interiorscaper	0	0%
LCP	9	5%
Researcher	17	11%
Unspecified	0	0%

Operation types (multiple selections)

PRODUCTION SITE	COUNT	PERCENT
Greenhouse	36	24%
Nursery Container	31	21%
Nursery Field	32	21%
Landscape	17	11%
Interiorscape	8	5%
Christmas Tree Farm	22	15%
Sod Farm	4	3%

Disease, insect and weed management styles (multiple selections)

MANAGEMENT STYLES	COUNT	PERCENT
Biological Control	37	19%
Chemical Control	47	24%
IPM	44	23%
Organic	22	11%
Weekly/Monthly Sprays	3	2%
Spray at Thresholds	39	20%

Spectrum of crops grown (multiple selections)

CROP TYPE	COUNT	PERCENT
Bedding Plants	25	11%
Cut Flowers	21	9%
Christmas Trees	22	9%
Foliage Plants	16	7%
Perennials	34	14%
Ornamental Grasses	22	9%
Palms	4	2%
Seasonal Potted Plants	17	7%
Shrubs	32	13%
Trees	34	14%
Turf	11	5%

For those of you who aren't familiar with what IR-4 is or does, it's a project that was established way back in 1963 between the USDA, the National Institute of Food and Agriculture (NIFA), the Agricultural Research Service (ARS), the EPA, agrichemical groups and growers.

The original goal, which is still its main function today, is to facilitate regulatory approval of sustainable pest management technology for environmental horticulture crops to promote public health and well-being. IR-4 facilitates national and regional research projects to develop efficacy and crop safety data so that new biological and chemical active ingredients can be registered and current products expanded for new uses. Administered by USDA NIFA, the programs within IR-4 are federally funded by the government.

Specialty crops served by IR-4 include fruits and vegetables, tree fruits, dried fruits, horticulture, and floriculture and nursery crops. A recent economic analysis conducted by Michigan State University estimates that "IR-4's partnership with agriculture has contributed to 95,261 jobs with a total labor income of \$5.6 billion and annual contributions to the gross domestic product totaling \$9.4 billion."

A group of plant pathologists, entomologists and weed scientists meet biannually to set research goals based on current needs, with the last meeting this past fall in 2019. At the meeting, researchers and representatives of growers, pesticide manufacturers and distributors gathered to discuss the major pest and disease issues faced by the green industry, identify research priorities for the next two years, and develop approaches to achieve these priorities and goals.

A tool the meeting attendees used to identify research priorities was the Grower Survey conducted by IR-4 in 2018-19. The pest and disease issues identified as the top priorities by the Grower Survey are often selected as research priorities.

Some interesting demographic statistics that came out of the survey were:

- Over 60% of the survey respondents were growers, and those who work in greenhouses, container nurseries and field/in-ground nurseries made up the largest groups at roughly equal proportions (21% to 24% each)
- These growers produce a variety of horticultural crops, with bedding plants, perennials, shrubs and trees being the major products (11% to 14%

each)

- The largest chunk of the respondents hailed from the West (46%), followed by the South (26%), Northeast (18%) and North Central (11%)

The major pest problems listed in order of importance were:

- Thrips—Identified as the most important pest in greenhouse and field nurseries, and for bedding plants,

seasonally potted plants, cut flowers, foliage plants and perennials

- Mites and spider mites
- Borers and beetles—The biggest issues for trees and shrubs, as are snails and slugs for ornamental grasses
- Scales and mealybugs
- Aphids

The top five diseases growers listed are bacterial diseases:

- Botrytis—The most important issue on cut flowers, foliage plants and perennials
- Phytophthora and pythium
- Leaf spots and anthracnose—Most important for shrub and tree growers
- Crown and root rots—Important to bedding plant producers

The top five weeds are:

- Perennial broadleaves—The most important issue for all production sites
- Summer annual broadleaves
- Grasses, horsetail and similar weeds—Mostly for cut flower producers
- Liverworts
- Moss and algae

In late 2019, USDA NIFA announced the renewal of IR-4 Project's funding in the amount of \$11 million to continue to generate additional data for registration of conventional and bio-based crop protection tools for specialty and minor crops in the U.S.

Increased funding for the IR-4 Project was a key focus at AmericanHort's recent Impact Washington Summit in September 2019. Additional funds would enable the IR-4 Project to be restored to full capacity, replace obsolete research equipment and expand field trials. **GT**

Top 5 issues by crop category for Entomology.

	BEDDING PLANTS & SEASONAL POTTED PLANTS	CUT FLOWERS	ORNAMENTAL GRASSES	FOLIAGE & PERENNIAL PLANTS	SHRUBS, TREES, PALMS & CHRISTMAS TREES
1	Thrips (35)	Thrips (21)	Snails & Slugs (11)	Thrips (30)	Borers & Beetles (51)
2	Whiteflies (22)	Aphids (8)	Scale & Mealybugs (7)	Mites & Spider Mites (21)	Mites & Spider Mites (43)
3	Mites & Spider Mites (22)	Lygus (7)	Lepidopterans (5)	Scale & Mealybugs (18)	Scale & Mealybugs (33)
4	Aphids (12)	Snails & Slugs (7)	Mites & Spider Mites (4)	Borers & Beetles (16)	Aphids (20)
5	Lepidopterans (10)	Mites & Spider Mites (6)	Thrips (3)	Snails & Slugs (11) Whiteflies (11)	Snails & Slugs (11) Thrips (11)

Top 5 issues by production site for Entomology.

	GREENHOUSE	NURSERY CONTAINER	NURSERY FIELD	LANDSCAPE
1	Thrips (81)	Mites & Spider Mites (74)	Thrips (62)	Mites & Spider Mites (42)
2	Mites & Spider Mites (69)	Borers & Beetles (58)	Mites & Spider Mites (48)	Scale & Mealybugs (35)
3	Scale & Mealybugs (53)	Thrips (58)	Snails & Slugs (40)	Snails & Slugs (28)
4	Borers & Beetles (41)	Scale & Mealybugs (48)	Scale & Mealybugs (39)	Thrips (21) Lepidopterans (21)
5	Snails & Slugs (40)	Snails & Slugs (40)	Borers & Beetles (34) Lepidopterans (34)	

Top 5 issues by crop category for Plant Pathology.

	BEDDING PLANTS & SEASONAL POTTED PLANTS	CUT FLOWERS	ORNAMENTAL GRASSES	FOLIAGE & PERENNIAL PLANTS	SHRUBS, TREES, PALMS & CHRISTMAS TREES
1	Crown & Root Rot (21)	Botrytis (38)	Bacterial Diseases (6)	Botrytis (21)	Leaf Spots & Anthracnose (33)
2	Bacterial Diseases (19)	Crown & Root Rot (9)	Turf Diseases (5)	Bacterial Diseases (19)	Bacterial Diseases (28)
3	Phytophthora & Pythium (18)	Bacterial Diseases (6)	Rusts (4)	Phytophthora & Pythium (14)	Phytophthora & Pythium (24)
4	Downy Mildew (18)	Leaf Spots & Anthracnose (4)	Powdery Mildew (3)	Crown & Root Rot (14)	Foliar Blights (14)
5	Botrytis (16)	Powdery Mildew (4) Rusts (4)	Nematodes (3)	Leaf Spots & Anthracnose (11) Nematodes (11)	Powdery Mildew (12)

Top 5 issues by production site for Plant Pathology.

	GREENHOUSE	NURSERY CONTAINER	NURSERY FIELD	LANDSCAPE
1	Bacterial Diseases (66)	Bacterial Diseases (62)	Bacterial Diseases (52)	Bacterial Diseases (26)
2	Crown & Root Rot (48)	Phytophthora & Pythium (36)	Botrytis (50)	Phytophthora & Pythium (19)
3	Phytophthora & Pythium (46)	Crown & Root Rot (32)	Phytophthora & Pythium (28)	Leaf Spots & Anthracnose (12)
4	Botrytis (40)	Botrytis (25)	Leaf Spots & Anthracnose (27)	Botrytis (12)
5	Downy Mildew (33)	Leaf Spots & Anthracnose (22)	Crown & Root Rot (25)	Powdery Mildew (10)

Top issues in each discipline by region.

DISCIPLINE		NORTH CENTRAL	NORTHEAST	SOUTHERN	WESTERN
Entomology	1	Borers & Beetles (6)	Thrips (11)	Scale & Mealybugs (28)	Thrips (42)
	2	Mites & Spider Mites (6)	Mites & Spider Mites (10)	Borers & Beetles (27)	Aphids (35)
	3	Lepidopterans (5)	Borers & Beetles (10)	Mites & Spider Mites (16)	Mites & Spider Mites (29)
	4	Whiteflies (3)	Scale & Mealybugs (10)	Thrips (14)	Borers & Beetles (15)
	5	Aphids (3)	Whiteflies (7)	Lepidopterans (7)	Whiteflies (14)
Pathology	1	Phytophthora & Pythium (12)	Crown & Root Rot (16)	Bacterial Diseases (25)	Botrytis (45)
	2	Other (6)	Leaf Spots & Anthracnose (15)	Leaf Spots & Anthracnose (14)	Crown & Root Rot (20)
	3	Botrytis (5)	Bacterial Diseases (12)	Phytophthora & Pythium (13)	Phytophthora & Pythium (18)
	4	Leaf Spots & Anthracnose (4)	Downy Mildew (6)	Downy Mildew (6)	Rusts (16)
	5	Bacterial Diseases (4)	Nematodes (5)	Other (6)	Foliar Blights (14)

New Research Priorities Set for the IR-4 Project

IR-4 set priorities at its biannual meeting in Fall 2019 for research needed over the next two years, 2020 and 2021. Priorities on both a national and regional level were set for the Environmental Horticulture Program.

National priorities

- **Plant Pathology**

Control of Pythium

Control of non-Oomycete root and crown rots

- **Entomology**

Control of borers and beetles

Control of mealybug and scale insects

- **Weed Science**

Crop safety of preemergent products

Control of Nostoc on hard surfaces

- **Biopesticide**

Control of powdery mildew on greenhouse potted plants

Control of root knot nematodes

Regional priorities

- **North Central**

Control of ambrosia beetles

Control of root knot nematodes

- **Northeast**

Improving directions for use with fatty acid herbicides

Control of outdoor thrips populations

- **Southern**

Control of European pepper moth

Control of bacterial leaf spots and blights

- **Western**

Control of liverwort

Control of Botrytis on peony

—*Dr. Jill Calabro*