

2011

Horticulture Research Station Summary

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Horticulture Research Station Summary

Abstract

Includes Farm and Weather Summary and Research Station Projects.

Keywords

RFR A1033

Disciplines

Agricultural Science | Agriculture

Horticulture Research Station Summary

RFR-A1033

Farm Staff

Superintendent Nick Howell
Ag Specialist/Viticulture..... Dennis Portz
Operations Manager..... Jim Kubik
Field Lab Technician Lynn Schroeder
Equipment Operator..... Jeff Braland
Turfgrass Research Associate..... Chris Blume

Research Farms Coordinator..... Mark Honeyman
Farms Manager Dennis Shannon
32 Curtiss Hall, ISU

Horticulture Research Station
55519 170th Street
Ames, IA 50010
515-232-4786 office and Fax
nhowell@iastate.edu

Location: Three miles north of Ames on Highway 69, turn east on 170th Street
about 1½ miles.

Farm and Weather Summary

Nick Howell, farm superintendent

Farm Comments

Staffing and internships. Permanent staffing was increased in 2010 with the addition of Jeff Braland, equipment operator, who transferred from the Animal Science Teaching Farms. Remaining in their positions in 2010 were Jim Kubik, operations manager; Dennis Portz, small fruit research specialist; Lynn Schroeder, field lab tech; and Chris Blume, turf grass research associate.

The Hort Station had six internships in 2010. Debra Zelle, junior, studied high tunnel production of tomatoes. Brandon Carpenter, a senior in horticulture, worked on multiple projects including cucumber production, green bean sentinel plots and apple imprinting. Paul Beamer, senior, worked on a leaf removal crop load study in grapes for his internship project. Kelly Gossen, horticulture and forestry double major, looked at differences in Japanese beetle infestations and Joe Jacobs, a junior in horticulture, looked at disease levels on EarthKind™ roses. Rachel Kreis, senior, worked on tunnel production of day-neutral strawberries.

Developments. The pesticide building, shop and machine shed roofs were repaired and painted. Three antiquated shade houses were torn down and three mini hoop structures were built in their place. In addition, 2,000 ft of drainage tile was installed and repaired to drain several problem wet areas.

Landscape cleanup and renovation projects continued. The windbreak along the west fence line was removed in preparation for replanting with spruce trees grown in the nursery for the last three years. The horticulture landscape design and build classes designed and installed a large paver patio as

the first phase of a design-build outdoor teaching laboratory.

Field days, tours and class activities. The station hosted 7 field days, 12 tours, 8 meetings, and 10 student classes. A total of 1,683 people attended events at the station in 2010. The All Horticulture Field Day was held August 6. The Department of Horticulture and the Horticulture Research Station invited the horticulture industry to tour research projects at the station. This event, held for the second year in a row, hosted 210 visitors. The Horticulture Club's fall festival was also a success. This year the Horticulture Club invited other student organizations from the College of Agriculture and Life Sciences to participate. A total of 40 student volunteers and 300 visitors attended this third annual event.

Weather Comments

Winter 2009-2010. Temperatures were below normal in January and February but because of heavier than normal snowfall and a slow cooldown in the fall, little damage was seen on crops early in the spring. January 4-in. soil temperatures stayed above freezing at 36 degrees.

Spring 2010. Temperatures were above normal during the period resulting in a slightly accelerated dormancy break. A Mother's Day freeze of 26 degrees created a loss of 50 percent of the apple crop and 60 percent of the grape crop. Precipitation rates were normal resulting in little delay of spring planting of vegetable and bulk crops.

Summer 2010. Precipitation was double normal rates in June, July, and August. A devastating storm in July with winds in excess of 70 mph caused significant damage to all fruit and ornamental crops at the station. Cull

rates on the apple crop were in excess of 60 percent due to wind and disease damage.

Fall 2010. Twice normal precipitation was received in September but below normal precipitation in October allowed for a long harvest season. A gradual cool down allowed perennial crops to go into dormancy without damage.

Acknowledgements

I would like to thank the farm crew Jim Kubik, Lynn Schroeder, Dennis Portz, Jeff

Braland, and Chris Blume for their efforts. Thanks to the student interns Deb Zelle, Brandon Carpenter, Rachel Kreis, Kelly Gossen, Joe Jacobs, and Paul Beamer and all of the other student workers for their hard work. Thanks for the assistance with the irrigation system maintenance provided by John Newton, superintendent, Veenker Memorial Golf Course. I would also like to thank Meg Speer, and the Story Co. Master Gardeners for their assistance with the All Horticulture Field Day and Home Demonstration Garden Field Day.

Table 1. Horticulture Research Station, Ames, IA, monthly rainfall and temperatures for 2010.

Month	Rainfall (in.)		High 2010	Temperature (°F)			Days 90° or above
	2010	Deviation from normal		Deviation from normal	Low 2010	Deviation from normal	
March	2.09	0.19	45.9	-2.8	29.6	1.4	0
April	3.38	-0.24	66.9	2.9	43.3	3.6	0
May	3.94	-0.61	67.0	-8.3	53.1	1.5	0
June	9.19	4.87	76.2	-7.7	64.0	2.4	0
July	6.97	3.01	80.0	-7.0	69.3	3.6	0
August	11.80	7.11	80.0	-4.7	69.9	6.6	2
September	6.19	2.98	72.8	-6.2	56.5	2.2	0
October	<u>0.45</u>	<u>-1.98</u>	63.3	-1.7	44.5	2.5	<u>0</u>
Totals	44.01	15.33					2

Research Station Projects

PROJECT

Mosquito-borne encephalitis surveillance
 Soil temperatures of overwintering nesting sites
 Various pathology experiments
 Apple imprinting
 Cucumber production
 Bayer preemergence trial
 Dupont broadleaf study/spring seeding trial
 Gowan yellow nutsedge and phytotoxicity trial
 Late fall bentgrass seeding and establishment demonstration
 Native short-grass prairie seedings (different timings)
 NCR fwy height variety/dollar spot trial
 NCR green height variety/dollar spot trial
 Perennial ryegrass NTEP
 Shade trial - species/cultivars
 Syngenta plant growth regulator trial

Bentgrass spaced-plant study

Divot plug study

Interseeding trial

Organic rotations for vegetable and field crops

Honeycrisp rootstalk study

Leopold grape management trial

NC140 apple rootstock trial

NE1020 wine grape trial

Wine grape trial

Tall fescue NTEP

Bacterial wilt attraction study

Brown patch trial

Disease-resistant apple field trial

Dollar spot trial - fwy height

Dollar spot trial - green height

Extended-duration row covers in muskmelon

Floral provisioning Study

National Elm Tree trial

Phenology of cucumber beetle

Phenology of inoculation time of sooty blotch and flyspeck on apples.

Sooty blotch/flyspeck pruning and spray-volume trial

PROJECT LEADER

L. Bartholomay

R. Ackerman

G. Beattie

B. Carpenter

B. Carpenter

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians, C. Blume

N. Christians/M. Jones/C. Blume

N. Christians/M. Jones/C. Blume

N. Christians/M. Jones/C. Blume

K. Delate

P. Domoto

P. Domoto

P. Domoto

P. Domoto

P. Domoto

S. Fei/C. Blume

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

M. Gleason

PROJECT

Summer patch trial
Sustainable management of sooty blotch and flyspeck
on apples.

Populus cultivar bio mass study

Seed dispersal and life history effects on spatial coexistence
Home demonstration garden
Calcium nutrient study
Earthworm control study
Fertilizer study (green)
Traffic/overseeding trial
Earth Kind rose trial
Earth Kind Japanese beetle study
Earth Kind rose disease study
High tunnel production
Bald cypress trial
Flowering crab trial
Shade tree trial
Common garden painted turtle nesting experiment
The adaptive significance of temperature-dependent sex
determination in the painted turtle
Ajinomoto fertilizer trial

Ajinomoto surfactant trial
Green bean sentinel plot
Yield impact of fusarium root rot on soybeans
High tunnel day-neutral strawberry study
June bearing strawberry trial
Small fruit teaching planting
Student orchard
Effects of leaf removal on grapevine growth and fruit quality
of Maréchal Foch
Herbicide reduction study in grapes
Soybean aphids and nematodes on soybeans*
Primocane blackberry trial

Becker Underwood seed-treatment trial
Turtle reproduction study*
Earth Kind hydrangea trial
Tree Swallow nesting
Prairie cover crops
Niche partitioning in native vs. exotic species

BASF fungicide/ball mark recovery trial

PROJECT LEADER

M. Gleason

M. Gleason

R. Hall

W. Harpole
C. Haynes
A. Hoiberg/D. Minner
A. Hoiberg/D. Minner
A. Hoiberg/D. Minner
A. Hoiberg/D. Minner
N. Howell
N. Howell/K. Gossen
N. Howell/J. Jacobs
N. Howell/D. Zelle
J. Iles
J. Iles
J. Iles
F. Janzen

F. Janzen
Q. Law/N. Christians/C. Blume

Q. Law/N. Christians/C. Blume
D. Mueller
G. Munkvold
G. Nonnecke
G. Nonnecke
G. Nonnecke
G. Nonnecke
G. Nonnecke/D. Portz/C. Seeley/P.
Beamer
G. Nonnecke/L. Wasko
M. O'Neal
D. Portz
D. Rinehart/M. Jones/N. Christians/C.
Blume
M. Valenzuela
A. VanDerZanden
C. Vleck
B. Wilsey
B. Wilsey/F. Isbell

D. York/N. Christians/C. Blume