Since 1963, the IR-4 Project has cooperated with researchers, producers, the agri-chemical industry and federal agencies to secure regulatory clearances for pest management products on specialty crops.

Since 2000, over 80% of IR-4’s research effort has involved new pest management technology with biopesticides and Reduced Risk chemistries. This huge shift was a direct result of the focus IR-4 placed on advocating this new technology. It was accomplished through a three pronged approach consisting of partnering with the agricultural chemical companies, educating specialty crop stakeholders, and partnering with the EPA to facilitate specialty crop registrations.

IR-4 recognized that without access to the new technology it could not assist specialty crop growers. So they solicited industry’s willingness to work together on new product development strategies which, for the first time, included specialty crops in their development plans. The foundation for this close working relationship was crop grouping, where studies on a few key crops would allow for registration on many more crops; many of those were specialty crops.

The other aspect of IR-4’s emphasis on new technology was the educational facet. It became clear that with reduced staffs in many of the companies due to mergers, federal and state research/extension scientists were not always given the ability to test the new materials. IR-4 instituted a mechanism through publication of New Pest Control Products/Transition Solutions List to inform the public about the virtues of the new technology to assist in the transition away from Food Quality Protection Act (FQPA) vulnerable crop protection tools.

Today, IR-4 continues to work as a model government funded program due to unique partnerships formed between the USDA (CSREES and ARS), the IR-4 Headquarters and Regional staff, the land grant university system, the crop protection industry, commodity and grower groups and the EPA.

IR-4 Provides Economic Viability
IR-4’s research helped garner registrations for Section 18 Emergency Use Exemptions in Pennsylvania. A registration is granted by the Environmental Protection Agency (EPA) for a particular pest control product on a specific crop. These registrations help prevent an economic loss from occurring. Many of these emergency exemptions have become permanent registrations. In 2003, the EPA credited 95 of the 120 Emergency Use Exemptions that were converted to full, Section 3 registrations to IR-4 research.

IR-4 Provides Research in Support of a Safe and Secure US Food Supply
The Reduced Risk chemicals that IR-4 researches and receives clearances, from the Environmental Protection Agency (EPA), are able to control pests that destroy crops, without harming the individuals that use them, the food that is harvested, or the environment in which the crops are grown.

IR-4 Helps US Farmers Compete in a Global Economy
With farm production costs rising every day, IR-4 research helps growers stay ahead of global competition, by producing safe and effective pest management solutions for their high value specialty crops.
What IR-4 Does for Pennsylvania

Clearances On Some Important Puerto Rico Crops

ALFALFA
- Aluminum Phosphide
- Glyphosate
- MCPA
- Pronamide

APPLE
- 2,4-D
- Aluminum Phosphide
- Codling Moth
- Granulosis Virus

APRICOT
- 2,4-D
- Malathion
- Pronamide
- BASI I.
- Mefenoxam
- Naphthalimide

BEAN (DRY)
- Bacillus thuringiensis
- Chlorothalonil
- Cyromazine
- Halosulfuron
- Imazamox
- Sodium Chlorate

BEET (GARDEN)
- Bacillus thuringiensis
- Chlorothalonil
- Clopyralid
- Endothal
- Fenamiphos
- Sethoxydim
- Spinosad

BROCCOLI
- Bacillus
- Chlorpyrifos
- Clethodim
- Clopyralid
- Glyphosate
- Malathion
- Oxyfluorfen
- Paraquat
- Sodium Hypochlorite

BRUSSELS SPROUTS
- Bacillus thuringiensis
- Chloropyrifos
- Dimethoate
- Endothall
- Sodium Hypochlorite

CAULIFLOWER
- Bacillus thuringiensis
- Chlorpyrifos
- Clethodim
- DCBA
- Endothall
- Glyphosate
- Malathion
- Methomyl
- Oxyfluorfen
- Paraquat
- Sodium Hypochlorite

CAUVS
- Bacillus thuringiensis
- Chlorpyrifos
- Clethodim
- Chlorothalonil
- Dimethoate
- Malathion
- Methomyl
- Oxyfluorfen
- Paraquat
- Sodium Hypochlorite

CELERY
- Bacillus thuringiensis
- Chlorpyrifos
- Clethodim
- Methomyl
- Oxyfluorfen
- Paraquat
- Sodium Hypochlorite

CHERRY (SWEET)
- Bacillus thuringiensis
- Chlorpyrifos
- Cyhalothrin
- Dimethoate
- Fludioxonil
- Methyl Anthranilate
- NAA
- Permethrin
- Promamide

CHERRY (TART)
- Bacillus thuringiensis
- Chlorpyrifos
- Cyhalothrin
- Dimethoate
- Fludioxonil
- Methyl Anthranilate
- NAA
- Permethrin
- Promamide

CLOVER
- Bentazon
- Clethodim
- MCPA
- Pronamide

CRABAPPLE
- 2,4-D
- Phosmet

CUCUMBER
- Bacillus thuringiensis
- Bifenthrin
- Clomazone
- Dimethomorph
- Glyphosate
- Imidacloprid
- Paraquat
- Petmethrin

CUCUMBER
- Bacillus thuringiensis
- Bifenthrin
- Clomazone
- Dimethomorph
- Glyphosate
- Imidacloprid
- Paraquat
- Petmethrin

CULUMBER
- Bacillus thuringiensis
- Chlorsulfuron
- Imazamox
- NAA
- Permethrin

CUMBER
- Bacillus thuringiensis
- Chlorsulfuron
- Imazamox
- NAA
- Permethrin

DILL
- Bacillus thuringiensis
- Carbaryl
- Chlorpyrifos
- Mefenpyr
- Naphthalimide

Eggplant
- Bacillus thuringiensis
- Chlorsulfuron
- Imidacloprid
- Methyl Anthranilate
- NAA
- Petmethrin

FIELD CORN
- Bacillus thuringiensis
- Bentazon
- Clethodim
- Dimethoate
- Methyl Anthranilate
- NAA
- Petmethrin

GOOSEBERRY
- Azinphos-methyl
- Chlorpyrifos
- Esfenvalerate
- Glyphosate
- Myclobutanil

GRAPE
- Aluminum Phosphide
- Bentzon
- Chlorpyrifos
- Eosetyl-Al
- Glyphosate
- Metalaxyl + Copper
- Methyl Anthranilate
- Zinc Phosphide

HONEY and BEES WAX
- Bacillus thuringiensis
- Formic Acid
- Menthol

HORSERADISH
- Bacillus thuringiensis
- Chlorothalonil
- Methomyl
- Oxyfluorfen
- Permethrin

KALE
- Bacillus thuringiensis
- Chlorpyrifos
- Clopyralid
- Imazapyr
- Methomyl
- Oxyfluorfen
- Petmethrin

LEEK
- Bacillus thuringiensis
- Chlorpyrifos
- Clopyralid
- Imazapyr
- Methomyl
- PCNB
- Sodium Hypochlorite

LIMA BEAN
- Bacillus thuringiensis
- Chlorpyrifos
- Clopyralid
- Imidacloprid
- Methyl Anthranilate
- Sodium Chlorate

LIME
- Bacillus thuringiensis
- Chlorpyrifos
- Clopyralid
- Imidacloprid
- Methyl Anthranilate
- Sodium Chlorate

MUSHROOM
- Chlorothalonil
- Cinnamaldehyde
- DDVP
- Diflubenzuron
- Malathion
- Propiconazole
Clearances On Some Important Pennsylvania Crops

MUSHROOM cont.
Pseudomonas fluorescens

NECTARINE
2,4-D
Chlorpyrifos
Iprodione
Pronamide

ONION (DRY)
Bacillus thuringiensis
Bromoxynil
Chlorpyrifos
Clethodim
Dimethomorph
Glyphosate
S-metolachlor
S-metolachlor

ONION (GREEN)
Bacillus thuringiensis
Bromoxynil
Cypermethrin
Clethodim
Clethodim
Clomazone
Endosulfan
Fluazifop
Hexachloroethane
Hexaoxiphic Acid
Imidacloprid
Imidacloprid
Methomyl
Methomyl
Napropamide
Napropamide
Pronamide
Pronamide
S-metolachlor
S-metolachlor

PARSLEY
Azinphos-methy I
Bacillus thuringiensis
Carbaryl
Chlorpyrifos
Imazamox
Malathion
MCPB
Pamethoxyl
Pamethoxyl
Sethoxydim
Sethoxydim

PEACH
2,4-D
Chlorpyrifos
Clomazone
Dacthal
Dacthal
Diuron
Fluazifop
Glyphosate
Imidacloprid
S-metolachlor
S-metolachlor

PEEK (BEI)
Aziphostrobin
Bacillus thuringiensis
Bifenthrin
Clomazone
Cyprod-visible
Imidacloprid
Paraquat
Permethrin
Pronamide
S-metolachlor

PLUM
Bacillus thuringiensis
Bifenthrin
Chlorpyrifos
Clomazone
Cyprod-visible
Imidacloprid
Metalaxyl + Mancozeb
Paraquat

RASPBERRY
2,4-D
Bifenthrin
Captan
Carbendazim
Chlorpyrifos
Cyprod-visible
Imidacloprid
S-metolachlor
Sethoxydim
Sulfur

RHUBARB
Bacillus thuringiensis
Bifenthrin
Clomazone
Cyprod-visible
Imidacloprid
Metalaxyl + Mancozeb
Paraquat

SQUASH (WINTER/SUMMER)
Bacillus thuringiensis
Bifenthrin
Clomazone
Cyprod-visible
Dimethomorph
Metalaxyl + Mancozeb
Paraquat
Pennethrin

SWEET CORN
2,4-D
Bacillus thuringiensis
Bifenthrin
Clopyralid
Dacthal
Imidacloprid
Metalaxyl
Paraquat
Pennethrin
S-metolachlor
S-metolachlor

SWEET POTATO
Bacillus thuringiensis
Bifenthrin
Chlorpyrifos
Clopyralid
Dacthal
Imidacloprid
Metalaxyl
Paraquat
Pennethrin
S-metolachlor
S-metolachlor

TURNIP (ROOT/GREENS)
Bacillus thuringiensis
Chlorpyrifos
Clopyralid
Cyprod-visible
Diflubenzuron
Hexaoxiphic Acid
Imidacloprid
Metalaxyl
Metalaxyl
Paraquat
Permethrin
Pronamide
Sethoxydim
Sulfur

WATERMELON
Bacillus thuringiensis
Bifenthrin
Chlorpyrifos
Clopyralid
Imidacloprid
Metalaxyl + Mancozeb
Paraquat
Pennethrin

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To learn more about IR-4 programs, visit the IR-4 web site at www.ir4.rutgers.edu