What IR-4 Does for Maryland

IR-4 Provides Economic Viability
The specialty food crop value in Maryland is $197 million. 
- Specialty crops include most vegetables, fruits, nuts, herbs, nursery and flower crops.
The economic loss of these crops could be as much as $23 million. IR-4’s research helped to register Section 18 Emergency Exemptions for Maryland that helped prevent this loss from occurring. A registration is granted by the Environmental Protection Agency (EPA) for a particular pest control product on a specific crop. Many of these registrations have been turned to permanent registrations. In 2003, ninety-five of the 120 Section 18 Emergency Exemptions that were converted to final registrations were credited to IR-4 by the EPA.

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.

“.. IR-4 has proven to be a model partner. Of particular importance to EPA has been IR-4’s focus on reduced risk pesticides...IR-4 is the most prolific submitter of pesticide tolerance petitions as well as the most successful in having their petitions approved by EPA’s Office of Pesticide Programs".

– Jim Jones, Director, EPA, Office of Pesticide Programs

Major funding for IR-4 is provided by Special Research Grants and Hatch Act Funds from USDA-CSREES, in cooperation with the State Agricultural Experiment Stations, and USDA-ARS. To learn more about IR-4 programs, visit the IR-4 web site at www.ir-4.rutgers.edu
What IR-4 Does for Maryland

Clearances On Some Important Maryland Crops

**ASPARAGUS**
- 2,4-D
- Bacillus thuringiensis
- Chlorpyrifos
- Cispyralid
- Dimethoate
- Flueazifop
- Fosetyl Al
- Glyphosate
- Linuron
- Malathion
- Myclobutanil
- Norflurazon
- Paraquat
- Permethrin
- Sethoxydim
- Triflorine

**BEET (GARDEN)**
- Bacillus thuringiensis
- Endothall
- Sethoxydim

**BLACKBERRY**
- Bifenthrin
- Captan
- Chlorpyrifos
- Esfenvalerate
- Glyphosate
- Malathion
- Myclobutanil
- Norflurazon
- Oxyfluorfen
- Sethoxydim

**CABBAGE**
- Bacillus thuringiensis
- Chlorpyrifos
- Clomazone
- DCPA
- Endothall
- Glyphosate
- Malathion
- Methomyl
- S-Metolachlor
- Oxyfluorfen
- Paraquat
- Sodium Hypochlorite

**CANTALOUGE**
- Bacillus thuringiensis
- Glyphosate
- Imidacloprid
- Malathion
- Metalaxyl + Mancozeb
- Paraquat
- Permethrin

**CARROT**
- Bacillus thuringiensis
- Glyphosate
- Iprodione
- Malathion
- Metribuzin
- Paraquat
- Sethoxydim
- Thiabendazole

**CELERY**
- Bacillus thuringiensis
- Carbaryl
- Glyphosate
- Malathion
- Methamidophos
- S-Metolachlor
- Sethoxydim

**CELYE**
- Bacillus thuringiensis
- Carbaryl
- Glyphosate
- Malathion
- Methamidophos
- S-Metolachlor
- Sethoxydim

**CHINESE CABBAGE (NAPA)**
- Bacillus thuringiensis
- Chlorothalonil
- Chlorpyrifos
- Clomazone
- Cyromazine
- DCPA
- Glyphosate
- Malathion
- Methidiphostoxynil
- Methomyl
- S-Metolachlor
- Oxyfluorfen
- Paraquat
- Sodium Hypochlorite

**CITRUS (ESCAROLE)**
- Bacillus thuringiensis
- Fluazifop
- Imazethapyr
- Sethoxydim

**GRAPE**
- Aluminum Phosphide
- Bifenthrin
- Chlorpyrifos
- Fosetyl-Al
- Glyphosate
- Methomyl
- Metalaxyl + Copper
- Methyl Anthranilate
- Zinc Phosphate

**HONEY and BEESWAX**
- Bacillus thuringiensis
- Formic Acid
- Menthol

**HORSERADISH**
- Bacillus thuringiensis
- DCPA
- Methomyl
- Oxyfluorfen
- Permethrin
- Sethoxydim

**KALE**
- Bacillus thuringiensis
- Chlorpyrifos
- Methomyl
- PCNB
- Sodium Hypochlorite

**KOHRLABI**
- Bacillus thuringiensis
- Chlorpyrifos
- DCPA
- Endothall
- Esfenvalerate
- Methomyl
- Sodium Hypochlorite

**LETTUCE**
- Bacillus thuringiensis
- Bifenthrin
- Imazethapyr
- Sethoxydim

**LIMBA BEAN**
- Bacillus thuringiensis
- Cyromazine
- Sodium Chlorate

**MUSTARD GREENS**
- Bacillus thuringiensis
- Bensulide
- Chlorpyrifos
- Esfenvalerate
- Glyphosate
- Malathion
- Myclobutanil
- Norflurazon
- Oxyfluorfen
- Sethoxydim

**OKRA**
- Bacillus thuringiensis
- Carbaryl
- Esfenvalerate
- Glyphosate
- Malathion
- Sodium Hypochlorite

continued on back
Clearances On Some Important Maryland Crops

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<tr>
<th>ONION (DRY)</th>
<th>POTATO</th>
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</table>

Contact Information for IR-4 Regional Field Coordinators

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Major funding for IR-4 is provided by Special Research Grants and Hatch Act Funds from USDA-CSREES, in cooperation with the State Agricultural Experiment Stations, and USDA-ARS. To learn more about IR-4 programs, visit the IR-4 web site at www.ir4.rutgers.edu.
IR-4: A Success Story Worth Telling

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.

Maryland Agriculture is Heavily Dependent on Specialty Crops

IR-4 thanks the entire Congressional delegation from Maryland for their support.

Estimated Potential Loss Without Use of the IR-4 Based Section 18s for Maryland
(from 1998-2002)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Economic Impact</th>
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<td>Spinach</td>
<td>$ 4,900,000</td>
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<tr>
<td>Strawberry</td>
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<tr>
<td>Watermelon</td>
<td>$ 18,000,000</td>
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Total $ 23,000,000

\(^1\) 1997 Census of Agriculture  
\(^2\) From 1998 to 2002