

**IDAHO STATE DEPARTMENT OF AGRICULTURE (ISDA)
DIVISION OF PLANT INDUSTRIES
BUREAU OF FEEDS AND PLANT SERVICES
2003 SURVEY, NURSERY AND FIELD INSPECTION SUMMARY**

APPLE MAGGOT (AM) (*Rhagoletis pomonella* Walsh) - In 2003, 446 traps were placed at 262 sites in seven counties (Boise, Bonner, Canyon, Gem, Owyhee, Payette, and Washington) in and around the commercial apple production areas of each county. The major tree fruit production areas of Payette, Canyon and Owyhee counties had negative trap data, building on a multi-year record of being AM-free. An AM-free zone is established by rules (IDAPA 02.06.08) under the authority of Title 22, Chapter 20, Idaho Code. Based on 2002 survey results, ISDA increased trap numbers in Washington county from 46 to 121. AM traps were placed in three host trees; apple, crabapple and hawthorn. Higher density detection surveys targeted the Mann's Creek area and parts of the Weiser river watershed north of the town of Weiser. Ten positive traps occurred in Washington County. Of these sites, six were **outside** of the AM-free zone and four positive sites were recorded **within** the AM-free zone. Washington County survey results showed AM catches increased slightly from an average of 2 AM per trap in 2002 to 4 insects per trap in 2003. The trap duration during 2003 was 101 days. Positive trap catches of adult AM were observed in new locations south of the Mann's Creek store but still within a 1-2 mile radius of the positive AM trap catches recorded during the 2002 season. The Washington County Abandoned Orchard Review Board, University of Idaho, Washington County Extension Office, and the Idaho State Department of Agriculture (ISDA) is currently working with the affected homeowners to control the pests or to remove the host material. Identifications are made through genitalia dissections performed by University of Idaho insect taxonomist, Mr. Frank Merickle, at the WFBARR Entomological Museum in Moscow, Idaho under the direction of Dr. James D. Johnson. All orchards and trap sites were plotted using Geographic Information System (GIS) and Global Positioning System (GPS) technology. ISDA plans to increase the trapping density in this area in 2004. An historical summary can be found on the ISDA website at <http://www.agri.idaho.gov/> in the publications section.



**Apple Maggot Two Year Survey Data Summary
Washington County, 2002 and 2003**

Year	Total # sites	Total # traps	Total Positive Traps	% positive traps	Total Apple Maggot Adults Caught	Average # Apple maggot adults per positive trap
2002	28	46	4	8.6	9	2
2003	61	121	10	8.3	42	4

***CEREAL LEAF BEETLE (CLB) (*Oulema melanopus* (Linnaeus))** – CLB was detected in Custer and Lemhi counties for the first time in 2003. There were 46 sites surveyed in 9 counties. Benewah, Shoshone, Latah, Clearwater, Nez Perce, Lewis and Idaho counties still have no records of establishment of CLB. Biocontrol agent releases were made of the larval parasite, *Tetrastichus julis*, at two sites in Washington County and one site in Owyhee county. No new establishment records for this biological control agent were recorded in 2003. A field insectary for *T. julis* and *Anaphes flavipes* are currently being established in Kimberly and Parma, Idaho through cooperation with the University of Idaho and the Idaho State Department of Agriculture. A site visit was conducted in September by USDA



Cereal Leaf beetle parasites after removal from an infested CLB larvae.

entomologists from the Invasive Pests Management Laboratory in Niles, Michigan to advise ISDA on the parasite nursery establishment protocols. A map showing Idaho counties positive for CLB is located on page 19.

WESTERN CHERRY FRUIT FLY (CFF) (*Rhagoletis indifferens* Curran) - The Idaho State Department of



CFF Larvae in a pitted cherry

Agriculture implements a trapping program to detect first emergence and tracks degree-day accumulation calculations for the western cherry fruit fly. The California Department of Food and Agriculture requires this for compliance with their Western Cherry Fruit Fly Quarantine for states wishing to export fresh sweet cherries to, or through, California. Fruit flies were first caught at one site in Gem County on May 29, 2003, and on June 19, 2003 at seven sites in Canyon County. A degree-day model is also used to supplement the trapping program. The dates that the 1060 degree-day accumulation were met or exceeded over the past few years is summarized in the table below. Electronic notification was sent out with cooperation from the University of Idaho and the Treasure Valley Pest Alert Network Web Site. The degree-day calculations are made from the Oregon State University, Department of Entomology degree-day computer model. Control applications are recommended on, or prior to, 1060 degree-day

accumulations according to the publication, "Orchard Pest Management" as published by the Good Fruit Grower, Yakima, WA 1993.

Western Cherry Fruit Fly Degree Day Accumulations 1998-2003 (1060 Degree Days)

Site	2003	2002	2001	2000	1999	30 Year Average
Boise	June 3	June 6	June 5	June 2	June 16	June 9
Caldwell	June 4	June 3	June 3	May 31	May 28	May 31
Emmett	Jun 5	N/A	N/A	N/A	N/A	N/A
Nampa	June 3	June 6	June 1	June 1	June 14	June 8
Payette	May 29	N/A	N/A	N/A	N/A	N/A
Parma	May 31	June 8	May 24	May 22	May 31	June 9
Weiser	June 2	N/A	N/A	N/A	N/A	N/A

EUROPEAN CORN BORER (ECB) (*Ostrinia nubilalis* (Hubner)) - This survey was conducted to determine the presence of this pest in the state. Idaho maintains a quarantine against host material, such as corn, coming from infested states. This survey is conducted every few years to ensure the integrity of the quarantine. This year 113 traps were placed at 60 sites in 20 counties where corn is grown. No corn borers were caught. The European corn borer is a serious pest of corn in the eastern U.S. and feeder corn is routinely imported into Idaho from infested states in the mid-west.



European pine shoot moth pictures used with permission. Copyright 1999. Jack DeAngelis, Oregon State University, All rights reserved.

EUROPEAN PINE SHOOT MOTH (EPSM) (*Rhyacionia bouliana* Denis & Schiffermuller) - In 2003, detection surveys

were carried out only in areas of the state where this insect is not known to occur. Trap sites were selected at each inspector's discretion, based upon risk, accessibility and presence of suitable host material. There were 152 traps placed at 107 sites in 20 counties. Adult moth emergence can be expected around the first week of June. This survey is performed to track EPSM's movement within the state for

compliance with California and Nevada quarantines. Five nurseries were trapped for compliance with the California EPSM quarantine and 337 visual inspections of nurseries were

made for the presence of EPSM. The EPSM is a pest of most *Pinus* spp. In Idaho, it is most commonly found on Mugo pine in ornamental situations. A map showing Idaho counties positive for EPSM is located on page 20.

***GYPSY MOTH (GM) (*Lymantria dispar* (Linnaeus)) Section Report provided G. Casey and L. Livingston, Idaho State Department of Lands** - In 2003, no gypsy moths were captured in Idaho. In addition to our regular detection trapping, delimitation traps were placed at both capture sites from 2001. A total of 19 delimitation traps were placed around the Blanchard capture site, north of Spirit Lake in Bonner County, where one male gypsy moth was captured in 2001. In addition, 16 delimitation traps were placed around the Thornton capture site, between Rexburg and Rigby in Madison County, where one male gypsy moth was captured in 2001.

Cooperating agencies, with accompanying responsibilities in the Idaho gypsy moth program, include the following:

- Idaho Department of Lands - Overall program coordination and trapping in northern Idaho, except in Forest Service campgrounds.
- Idaho Department of Agriculture - Trapping in southwestern Idaho and submission of data into the National Agricultural Pest Information System (NAPIS) data library.
- USDA, APHIS - Provides cost-share funding, traps, baits, and technical expertise.
- USDA Forest Service, Region 4 - Trapping in southeastern Idaho.
- USDA Forest Service, Region 1 - Trapping in Forest Service campgrounds in northern Idaho.
- Idaho Department of Transportation – Provides monthly reports of vehicle registrations in Idaho from states that are generally infested with gypsy moths.

Detection Trapping - In 2003, the cooperating agencies in the Idaho gypsy moth detection program placed 5,582 detection traps throughout the state (Table 1). Trapping costs for the 2003 gypsy moth survey program in Idaho are shown in Table 2. Table 3 shows trap placement by county. Pheromone-baited traps were placed on a grid at a density of four traps per square mile. Traps were placed throughout the state in cities, towns, surrounding urban areas, and rural communities in accordance with a predetermined rotation schedule. Cities and communities where 20 or more move-ins occur are trapped irrespective of their place in the schedule. A move-in is defined as an individual or family moving into Idaho from a state that is generally infested with gypsy moths. This information is derived from vehicle registration information supplied on a monthly basis by the Idaho Department of Transportation. Most infestations are initiated when an egg mass or other life stage of the gypsy moth arrives on an outdoor household article brought by someone moving into the area. Between May 2002 and April 2003, there were 10,195 move-ins to the state in areas to be trapped, a 97% increase over the previous year. Campgrounds, tourist attractions, and other high-risk locations were also trapped.

Delimitation Trapping – Delimitation traps were placed at two locations in 2003. These traps were placed at a density of 16 traps/mi². At Blanchard, north of Spirit Lake in Bonner County, 19 delimitation traps were placed surrounding the capture site where a single male gypsy moth was captured in 2001. At Thornton, between Rexburg and Rigby in Madison County, 16 delimitation traps were placed surrounding the capture site of a single male gypsy moth in 2001.

Mass Trapping – No mass trapping was done in Idaho in 2003.

No gypsy moths were captured during the 2003 trapping season. As a result of the Blanchard and Thornton sites being gypsy moth-free for the past two seasons, those areas have been officially declared gypsy moth-free and will return to their original trapping schedules in 2004.

Table 1 - Number of gypsy moth traps placed, by agency, in Idaho in 2003.

AGENCY	DETECTION TRAPS	DELIMITING TRAPS	MASS TRAPS	TOTAL TRAPS
Idaho Dept. of Lands	3,450	19	0	3,469
Idaho Dept. of Agriculture	1,450	0	0	1,450
USFS - Region 4	575	16	0	591
USFS - Region 1	107	0	0	107
TOTALS	5,582	35	0	5,617

Table 2 - Costs of the 2003 gypsy moth survey program.

AGENCY	COST
Idaho Department of Lands	\$35,230.00
Idaho Department of Agriculture	\$12,425.00
US Forest Service - Region 1	\$4,000.00
US Forest Service - Region 4	\$10,000.00
USDA - APHIS Direct costs for traps, baits and travel.	\$2,000.00
USDA - APHIS Cooperative grants.	\$22,506.00
TOTAL	\$86,161.00

Table 3 - 2003 Trap placement by counties.

COUNTY NAME	COUNTY NO.	DETECTION 4/MILE ²	DELIMITATION 16/MILE ²	MASS 9/ACRE	TOTAL TRAPS
Ada	1	433	0	0	430
Adams	2	0	0	0	0
Bannock	3	119	0	0	119
Bear Lake	4	24	0	0	24
Benewah	5	238	0	0	238
Bingham	6	44	0	0	44
Blaine	7	160	0	0	160
Boise	8	8	0	0	8
Bonner	9	1,062	19	0	1,081
Bonneville	10	118	0	0	118
Boundary	11	48	0	0	48
Butte	12	0	0	0	0
Camas	13	0	0	0	0
Canyon	14	184	0	0	184
Caribou	15	18	0	0	18
Cassia	16	23	0	0	23
Clark	17	2	0	0	2
Clearwater	18	113	0	0	113
Custer	19	36	0	0	36
Elmore	20	63	0	0	63
Franklin	21	32	0	0	32
Fremont	22	31	0	0	31

COUNTY NAME	COUNTY NO.	DETECTION 4/MILE ²	DELIMITATION 16/MILE ²	MASS 9/ACRE	TOTAL TRAPS
Gem	23	0	0	0	0
Gooding	24	76	0	0	76
Idaho	25	154	0	0	154
Jefferson	26	18	0	0	18
Jerome	27	26	0	0	26
Kootenai	28	1196	0	0	1196
Latah	29	444	0	0	444
Lemhi	30	20	0	0	20
Lewis	31	36	0	0	36
Lincoln	32	0	0	0	0
Madison	33	23	16	0	39
Minidoka	34	26	0	0	26
Nez Perce	35	171	0	0	171
Oneida	36	13	0	0	13
Owyhee	37	0	0	0	0
Payette	38	54	0	0	54
Power	39	10	0	0	10
Shoshone	40	95	0	0	95
Teton	41	12	0	0	12
Twin Falls	42	207	0	0	207
Valley	43	203	0	0	203
Washington	44	45	0	0	45
TOTALS		5,582	35	0	5,617

The Idaho Department of Lands administers this trapping program. A more detailed report and historical information may be obtained by contacting Ms. Gretchen Casey or Mr. Ladd Livingston, Idaho Department of Lands, 3780 Industrial Ave. South, Coeur d'Alene, Idaho 83815, or phone (208) 769-1525

***GRASSHOPPERS - SUMMARY OF SURVEY RESULTS**

With a few exceptions, most areas of Idaho did not have heavy grasshopper infestations in 2003. An outbreak was detected in the area south of the Snake River along the Twin Falls, Elmore, and Owyhee County boundaries. There were also significant infestations near Richfield in Lincoln County, around Oakley, Elba and Almo in Cassia County, and around Arco in Butte County. Species composition consisted primarily of *Aulocara ellioti*, *Oedaleontus enigma*, *Camnula pellucida*, and *Melanoplus sanguinipes*. The season should have allowed exceptional oviposition opportunities and there are currently no factors that would indicate any reason to expect major decreases in overall grasshopper populations in 2004.

SIGNIFICANT 2003 RANGELAND GRASSHOPPER SURVEY RESULTS

County	Acres infested at more than 8 grasshoppers per sq. yd.			
	BLM	National Forest	State Land	Private Lands
Ada	1,000			2,000
Adams	1,000			1,000
Bannock				1,000
Bear Lake				1,000
Bingham	500			
Blaine	2,000			1,000
Boise				500

County	Acres infested at more than 8 grasshoppers per sq. yd.			
	BLM	National Forest	State Land	Private Lands
Bonneville				1,000
Butte	1,000			1,000
Camas	4,000			6,000
Canyon	500			
Caribou				1,000
Cassia	5,000	2,000		4,000
Custer		500		
Elmore	50,000			2,000
Fremont	1,000	1,000		1,000
Gem	5,000			2,000
Gooding	5,000			4,000
Jerome	5,000			3,000
Lincoln	50,000			2,000
Minidoka	60,000		1,000	2,000
Oneida	5,000	5,000		2,000
Owyhee	40,000		1,000	3,000
Payette	1,000			1,000
Power	1,000			
Teton		500		
Twin Falls	5,000			2,000
Valley		1,000		1,000
Washington	5,000			5,000
Total	248,000	10,000	2,000	49,500
Grand total				309,500

*MORMON CRICKETS

The Mormon cricket outbreak which has been building in the Mayfield area of Elmore County increased in density and extent in 2003. Extremely high population levels, exceeding 2,500 per sq. yd. in the early spring, were present throughout the Boise and Danskin Fronts in Elmore, Ada, Gem and Boise Counties. This infestation extends approximately 80 miles from Emmett to King Hill. There is also an infestation of Mormon crickets on the northern foothills of the Owyhee Mountains in Owyhee County and an infestation in Oneida County around Malad City. Infestations are starting to build in Washington and Valley Counties. The season should have allowed exceptional oviposition opportunities and there are currently no factors that would indicate any major decrease in overall Mormon cricket populations in 2004. USDA anticipates the large infestation in Elmore, Ada, Gem and Boise Counties has not yet reached its peak, although treatments in Elmore County may have reduced local elements of the outbreak. Rangelands very near Boise could host high population densities in 2004.

SIGNIFICANT 2003 MORMON CRICKET SURVEY RESULTS

County	Acres infested at more than 3 Mormon crickets per sq. yd.			
	BLM	National Forest	State Land	Private Lands
Ada	10,000		4,000	60,000
Bannock				1,000
Bingham				500
Boise	3,000	6,000	1,000	25,000
Camas		1,000		
Elmore	25,000	60,000	7,000	60,000
Gem	6,000			5,000

County	Acres infested at more than 3 Mormon crickets per sq. yd.			
	BLM	National Forest	State Land	Private Lands
Gooding	6,000		1,000	
Oneida	4,000	3,000		2,000
Owyhee	18,000		1,000	1,000
Valley		15,000		
Washington	10,000			5,000
Total	82,000	85,000	14,000	159,500
Grand total				340,500

SUMMARY OF COMPLAINTS AND TREATMENTS

Many members of the public, especially along the Boise and Danskin Fronts in Ada, Elmore, and Boise Counties voiced general complaints about Mormon crickets throughout the spring and summer. There were also scattered complaints about grasshoppers and Mormon crickets from southeastern Idaho. Most of these complaints did not lead to official requests for treatment from federal land management agencies.

USDA APHIS Plant Protection and Quarantine (PPQ) received a total of 59 official complaints about grasshoppers and Mormon crickets. USDA conducted ten treatment projects on federal land in response to these complaints. All these treatments were on lands managed by Bureau of Land Management and consisted of applications of 10 lbs/acre of 5% carbaryl bait. The bait was distributed by ground along roads and trails throughout infested rangelands in Elmore, Owyhee, and Twin Falls Counties and by air on infested rangelands in Elmore, Boise, Cassia, Twin Falls, and Minidoka Counties. In no cases were strips more than 100 feet wide treated without intervening untreated spaces. Distance between swaths of aerially applied bait ranged from 200 to 1,000 feet. Treated acres totaled 300 in Boise County, 3,010 in Cassia County, 13,010 in Elmore County, 5,000 in Minidoka County, 275 in Owyhee County, and 2,855 in Twin Falls County. USDA also conducted experimental treatments on 840 acres of State land in Elmore County with an application rate of 5 lbs/acre of 5% carbaryl bait applied in a crisscross pattern with 1,320 feet between swaths. PPQ treated a total of 25,290 acres with 248,700 lbs of carbaryl 5% bait in Idaho in 2003.

The other official complaints did not result in treatment by PPQ because insects were on private land and not on federal land or numbers of insects present did not justify treatment.

Idaho State Department of Agriculture (ISDA) participated in cost-share treatment projects with private land managers and county agricultural agents to treat range and croplands in southern Idaho. These projects included:

- 70 acres near Horseshoe bend in Boise County with 5% carbaryl bait
- 1,247 acres north of Mountain Home in Elmore County with diflubenzuron
- 746 acres near Hammett in Elmore County with malathion
- 25,431 acres around Shoshone, Richfield and Dietrich in Lincoln County with diflubenzuron
- 13,174 acres north of Arco in Butte County with diflubenzuron
- 4,338 acres around Almo in Cassia County with diflubenzuron
- 19,845 acres south of Malad City in Oneida County with diflubenzuron
- 2,000 acres near Grays Lake in Caribou County with malathion

Total ISDA Treated Acres – 66,851

Some treatments included utilization of diflubenzuron on grain and hay crops under a special needs registration from the Environmental Protection Agency.

ISDA provided 5% carbaryl bait to agricultural landowners for application to their own land. Amounts distributed (in pounds of 5% bait) were:

Ada County	11,700
Bear Lake County	1,848
Blaine County	3,500
Boise County	5,296
Butte County	7,750
Camas County	2,000
Cassia County	2,050
Custer County	50
Elmore County	121,300
Franklin County	4,674
Gem County	1,532
Lincoln County	14,000
Minidoka County	200
Oneida County	11,050
Owyhee County	9,070
Power County	6,000
Twin Falls County	3,000
Valley County	950
Washington County	2,050
Total	208,020

NEW ENVIRONMENTAL DOCUMENTATION

As provided by recently concluded Memoranda with Bureau of Land Management and U.S. Forest Service, PPQ prepared the environmental documentation required for the Rangeland Grasshopper Suppression Program. The Environmental Assessment with informed decisions about the 2003 program in Idaho is available at:

<http://www.agri.state.id.us/PDF/Plants/Environmental%20Assessment%20-%20EA-ID-PPQ-GH2003-001.pdf>

The Environmental Impact Statement with informed decisions about the Rangeland Grasshopper Suppression in seventeen western states is available at:

<http://www.aphis.usda.gov/ppd/es/gh.html>

LAWSUIT

During the review period of the Environmental Assessment, four organizations served PPQ with a Notice of Intent to sue for alleged violations of the Clean Water Act. Suit was not filed on those grounds. However, the four organizations did file suit for alleged violations of National Environmental Policy Act, Administrative Procedures Act, National Forest Management Act, and Federal Land Policy and Management Act, under the provisions of the Declaratory Judgment Act, and Equal Access to Justice Act. The case was settled out of court. Documents filed in the case are available at:

http://www.id.uscourts.gov/ECM/dc_images/_12T0SXBMP10139254.pdf

HAANCHEN BARLEY MEALYBUG (*Trionymus haancheni* McKenzie) - A new insect pest of barley, the Haanchen barley mealybug, was discovered for the first time in Idaho in Caribou county during June of 2003 by University of Idaho, entomologist Juan M. Alvarez. The host was a commercial barley field near Soda Springs. Surveys conducted by Dr. Alvarez have detected this pest in five eastern Idaho counties: Bingham, Bonneville, Caribou, Jefferson and Madison. This pest caused significant economic damage in several barley fields in those counties. University of Idaho Current Information Series 1109 provides information on this emerging pest.

JAPANESE BEETLE (*Popillia japonica Newman*) – During the 2003 field season, 192 traps were placed at 192 sites in 44 counties and 382 visual inspections of nursery premises were performed. All traps and visual inspections were found negative. Japanese beetle quarantines are maintained and vigorously enforced by California, Idaho, Oregon, Utah and Washington. This beetle and its larval form are known to infest over 400 horticultural and ornamental plants, including sod. Establishment of the beetle in Idaho could seriously affect exports to the above-listed states and British Columbia. The beetle is known to infest most states east of the Mississippi River. Eastern Idaho is at increased risk for a possible Japanese beetle infestation, due to the amount of nursery stock from infested eastern states being allowed into the Jackson, Wyoming area. Wyoming maintains no Japanese beetle quarantine or surveillance program, so the likelihood of an infestation in the landscaped areas in and around Jackson could be very high.



for a possible Japanese beetle infestation, due to the amount of nursery stock from infested eastern states being allowed into the Jackson, Wyoming area. Wyoming maintains no Japanese beetle quarantine or surveillance program, so the likelihood of an infestation in the landscaped areas in and around Jackson could be very high.

***KARNAL BUNT (*Tilletia indica*)** – There were 37 samples processed from 16 counties and entered into the National Agricultural Pest Information System (NAPIS) system. All of the samples were collected and analyzed according to the 2003 National Karnal Bunt Monitoring Plan. All samples were negative for Karnal bunt. Below is a table listing sample numbers by county in the 2003 survey.

COUNTY	POSITIVE	NEGATIVE	TOTAL
ADA	0	1	1
BENEWAH	0	2	2
BONNEVILLE	0	4	4
BUTTE	0	1	1
CARIBOU	0	2	2
CLARK	0	1	1
FRANKLIN	0	1	1
GEM	0	1	1
IDAHO	0	4	4
JEROME	0	2	2
LATAH	0	7	7
LINCOLN	0	2	2
MINIDOKA	0	4	4
ONEIDA	0	2	2
PAYTETTE	0	1	1
TWIN FALLS	0	2	2
TOTAL	0	37	37

PLUM CURCULIO (*Conotrachelus nenuphar*) (HERBST)

Dr. Diane Alston and Mylie Thompson, Department of Biology, Utah State University, cooperated with ISDA in conducting a plum curculio survey in southeast Idaho. This pest was surveyed using specialized screen emergence traps placed on host trees (apple pear and plum). Eighteen sites were trapped in Oneida County and ten sites were trapped in Franklin County. Traps were placed in mid June and removed August 29. No plum curculio adults were observed in any of the traps. Based on 2003 data and past surveys, there is no record of this pest infesting or becoming established in the state.

REGULATORY INCIDENTS:

Ralstonia

Ralstonia solanacearum is a plant pathogenic bacterium that causes wilt diseases. Various races of this organism affect different crops around the world including tomato, potato, eggplant, banana, and tobacco. Of particular concern to the US is *Ralstonia solanacearum* race 3 biovar 2 because of its affect on eggplant, geraniums, potatoes, and tomatoes. While race 1 is endemic to the Southeastern US where it can affect tomato crops, *Ralstonia solanacearum* race 3 biovar 2 is not known to occur in the US and is considered to be of quarantine importance.

Nurseries Investigated for Presence of *Ralstonia solanacearum* race 3, biovar 2.

Overall Summary:

- Seven greenhouses in Idaho were identified as having potentially received suspect plants.
- Samples pulled and tested from six of seven greenhouses.
- Five greenhouses found negative for *Ralstonia solanacearum*.
- One greenhouse found positive for *Ralstonia solanacearum* race 3, biovar 2.
- All suspect geraniums in known positive greenhouse destroyed under supervision of USDA and ISDA investigators.

Indian Scented Pine Cones

In December of 2003, the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) announced a national recall on pine cones originating from India. Imports of these pine cones were found to contain serious quarantine pests warranting the removal of these items from store shelves. The pests were *Chlorophorus strobilicola* (Cerambycidae) and a species of genus *Cydia* (Tortricidae). *Chlorophorus strobilicola* is a wood-boring beetle that feeds on pine cones and is not known to exist in the United States. ISDA, Division of Plant Industries' investigators cooperated with the USDA in the Idaho recall effort of the implicated stores selling the infested product. A sample Indian scented pine cone recalled from a Meridian store was found by ISDA to have insect galleries and caste skins; however, no live insects were found. As an added precaution to safeguard American agriculture and the environment, APHIS amended its import requirements to mandate fumigation of Indian origin pine cones prior to entry into the United States. The new fumigation requirements are effective immediately. Pine cones packaged in nonpermeable materials (e.g., plastic) will be refused entry or destroyed, since they cannot be fumigated.

Ya Pears

In December 2003, APHIS suspended indefinitely the import of Ya pears from China. Infected with a serious fungal disease, these pears were banned from sale, distribution and import into the United States. Some of the produce was riddled with skin lesions and fruit rot. The banned fruit was infected with an exotic *Alternaria* sp, a post harvest disease, which posed a significant risk to the U.S. apple and pear industry, but did not affect human health. ISDA, Division of Plant Industries' investigators cooperated with the USDA in the Idaho recall effort of the stores selling the potentially infected produce.

DISEASES AND PESTS FOUND DURING 2003 FIELD INSPECTIONS FOR EXPORT CERTIFICATION

Weather conditions for the 2003 growing season continued to be drier than in past years. This may have again contributed to fewer diseases being observed during active growth field inspections. Limited supplies of irrigation water late in the growing season may also have contributed to drier-than-normal field conditions resulting in less disease expression in the field.

Forty-one seed companies submitted a total of 43,433 acres for inspection in 2003 compared to 46 firms enrolling 36,859 acres in 2002 (a 17.8 percent increase). The number of acres actually inspected, due to multiple inspections required for some crop diseases, was 71,357 in 2003 versus 60,692 acres in 2002. There were 3,016 fields representing 26 different crops in the Field Inspection for Export Certification program.

Year	# Participating Firms	# of Crops	# Fields	Submitted Acres	Inspected Acres
2002	46	25	2,538	36,859	60,692
2003	41	27	3,016	43,433	71,357

Alfalfa seed: A total of 885.16 acres were submitted for inspection. Canadian Thistle (*Cirsium arvense*) was observed in 293 acres. *Fusarium oxysporum f sp medicaginis* was observed in 50 acres and *Phoma medicaginis* was observed in 183 acres. No Alfalfa mosaic virus, *Verticillium albo-atrum*, *Clavibacter michiganensis pv. insidiosus*, *Xanthomonas campestris pv. alfalfae*, *Ditylenchus dipsaci*, *Hieracium pilosella*, *Orobanche spp.*, or *Striga spp.* were found.

Barley: A total of 5.2 acres of Barley were inspected in 2003. No *Urocystis agropyri*, *Tilletia controversa*, *Tilletia caries*, *Ustilago nuda*, or Barley stripe mosaic virus was detected.

Beans, Dry: A total of 3,130 acres were submitted for inspection. Bean common mosaic virus, Bean southern mosaic virus, Pea early browning virus, and Pea enation mosaic virus were not observed in any of the fields. To meet requirements for the Rules Governing The Planting Of Bean Seed (*Phaseolus*) Species In Idaho, IDAPA 02.06.06, all fields submitted were also inspected for Halo blight, Common blight, Fuscus blight, Brown spot, Bacterial wilt, or Anthracnose, with none being observed.

Beans, Garden: A total of 16,077.31 acres were submitted for inspection. Bean common mosaic virus was not detected. Bean southern mosaic virus, Pea early browning virus, and Pea enation mosaic virus were not observed in any of the fields. Additionally, Halo blight, Common blight, Fuscus blight, Brown spot, Bacterial wilt, or Anthracnose were not observed in any fields submitted. Numerous fields were also inspected for *Elsinoe phaseoli*, *Phaeoisariopsis griseola*, Tobacco ring spot virus and Tomato ring spot virus, with none of these diseases being detected.

Brassica spp. (Collards, Mustard, Rutabaga, and Turnip): Forty-one fields totaling 427 acres were inspected and found apparently free from *Alternaria brassicae*, *A. brassicola*, *Leptosphaeria maculans*, *Plasmodiophora brassica*, *Pseudomonas syringae pv. maculicola*, *Sclerotinia sclerotiorum*, and *Xanthomonas campestris pv. campestris*.

Cantaloupe, Cucumber, Pumpkin, Squash and Watermelon: Fifteen small fields totaling 13 acres were submitted and inspected for Cucumber mosaic virus, Muskmelon mosaic virus, Squash mosaic virus, Watermelon mosaic virus, *Xanthomonas campestris pv. cucurbitae*, *Pseudomonas syringae pv. lachrymans*, *Mycosphaerella melonis*, *Colletotrichum lagenarium*, and *Acidovorax avenae supsp. citrulli*. None of the diseases listed were detected.

Carrot: All fields (533.7 acres) were inspected for *Alternaria dauci*, *A. radicina*, *Cercospora carotae*, *Erwinia carotovora*, and *Xanthomonas campestris pv. carotae*. No diseases of quarantine significance were observed.

Corn: None of the Downy mildew diseases, Maize dwarf mosaic virus, Maize chlorotic mottle virus, Southern corn leaf blight, was detected in any of the 8,420.88 acres submitted for inspection. Only one field, 11.5 acres, was confirmed positive for High plains virus and another field, 8 acres, had wheat streak mosaic virus. Head smut was observed in 7 acres and *Diplodia* leaf streak of corn was confirmed infecting 32 acres inspected. One field (1.5 acres) reported positive for Stewart's Wilt. Common smut, *Ustilago zaeae*, was observed in numerous fields as has been the case in prior seasons. Insect damage was prevalent in many fields, especially late in the season during the second inspection. Eight fields were inspected, sampled and tested according to new requirements for export of corn seed to Australia. Only one field tested positive for Wheat Streak Mosaic Virus.

Garlic: Two field totaling 1.25 acres was inspected and found free from any disease symptoms of quarantine significance, including *Sclerotium cepivorum* (Onion white rot).

Lettuce: Thirty-five fields totaling 222 acres were inspected and found apparently free from Lettuce mosaic virus. Nine fields representing 5 acres were positive for Tomato spotted wilt.

Mint: Fourteen fields totaling 152.83 acres were inspected and found apparently free from *Verticillium dahliae*. Sixty-one acres, were found positive for Mint root borer, *Fumibotys fumalis*.

Onion and Chive: Ninety-five fields totaling 347.49 acres were inspected. All fields inspected were found apparently free from *Ditylenchus dipsaci*, *D. destructor*, *Alternaria porri*, *Urocystis magica*, *Colletotrichum circinans*, Onion yellow dwarf virus, *Botrytis alli*, and *Pyrenochaeta terrestris*. No Onion white rot (*Sclerotium cepivorum*) was observed in any of the fields submitted for inspection.

Peas: A total of 5,554.13 acres (323 fields) were inspected during active growth. No *Ascochyta pisi*, Pea early browning virus, Pea enation mosaic virus, Pea seedborne mosaic virus, or *Xanthomonas campestris pv. phaseoli* were observed in any of the fields. *Fusarium oxysporum f.sp. pisi*, was found infecting only 10 acres.

Pepper: Four trial plots totaling 1.5 acres were inspected and found free from observable diseases of quarantine significance including *Colletotrichum dematium*, *Corynebacterium michiganense pv. michiganense*, Cucumber mosaic virus, *Phytophthora capsici*, *Pseudomonas solanacearum*, *P. syringae pv. Lachrymans*, *P. syringae pv. tomato*, *Xanthomonas campestris pv. vesicatoria*, and Tobacco etch virus.

Potato: Eleven fields (1,171 acres) were inspected and found apparently free from *Phytophthora infestans*.

Radish: Twenty-five fields (251 acres) were inspected and found apparently free from *Colletotrichum higginsianum*, *Xanthomonas campestris pv. campestris*, and *X. campestris pv. raphani*.

NUMBER OF FIELDS AND ACREAGE SUBMITTED FOR INSPECTION UNDER THE IDAHO RULES FOR PHYTOSANITARY AND POST-ENTRY CERTIFICATION AND RULES GOVERNING THE PLANTING OF BEANS (*Phaseolus*) SPECIES IN IDAHO FOR THE 2003 FIELD SEASON

SPECIES	Number of Fields	SUBMITTED ACRES	INSPECTED ACRES
Alfalfa	38	885.16	885.16
Barley	2	5.2	5.2
Beans, Dry	223	3,130	6,950.50
Beans, Garden	1,094	16,077.31	35,188.64
Cabbage	0	0	0
Cantaloupe	8	11.25	11.25
Carrot	69	533.7	533.7
Chive	2	15	15
Collards	2	23	23
Corn	889	8,420.88	16,031.51
Corn, Area	23	500.9	0
Cucumber	1	0.25	0.25
Dill	0	0	0
Garlic	2	1.25	1.25
Leek	0	0	0
Lettuce	35	222	222
Mint	14	152.83	299.66
Mustard	4	60	60
Onion	93	239.49	239.62
Peas	323	5,554.13	9,356.79
Peas, Area	137	6,072.4	N/A
Pepper, Bell	2	1	1
Pepper, Hot	2	0.5	0.5
Potato	11	1,171	1,171
Pumpkin	2	0.5	0.5
Radish	25	251	251
Red Clover	0	0	0
Rugula	1	10	10

SPECIES	Number of Fields	SUBMITTED ACRES	INSPECTED ACRES
Rutabaga	8	81	81
Squash	3	0.75	0.75
Turnip	2	12	12
Watermelon	1	0.25	0.25
Wheat	0	0	0
TOTALS	3,016	43,432.75	71,356.53

Ben Simko, Program Manager, Plant Industries, Boise, (208) 332-8620 and Garry West, Program Manager, Plant Industries, Twin Falls, (208) 736-2195, compiled the field disease report.

SUMMARY OF PLANT PATHOLOGY LAB SAMPLES FOR 2003

In 2003, the plant pathology lab received in 598 samples and performed a total of 2,026 tests on these samples. Our average turnover time (TO) was 28 days.

Several changes were made from previous years. We included a new test for anthracnose caused by *Colletotrichum lindemuthianum*), on bean seeds submitted for planting in Idaho. We ran a total of 249 bean seed tests this year, up slightly from last year. None of the samples tested came up positive for anthracnose. We did however find *Xanthomonas axonopodis phaseoli* on seed from China, and its *fuscans* variant on seed from elsewhere in the US. We also found brown spot caused by *Pseudomonas syringae pv.syringae* on seed from the Netherlands.

We ran another survey on wheat for KB (karnal bunt caused by *Tilletia indica*.). This was the 8th year of negative results. The KB survey continues mainly because positive finds in other states indicate that the pathogen is still not eradicated. We were able, however, to discontinue the Plum Pox Virus Survey this year, after 3 years of negative results. This pathogen has not moved far out of its original zone of infection in Pennsylvania.

Our service sample numbers increased this year from 103 to 136 samples tested. This was the result of including a soil testing service for *Synchytrium endobioticum*, the causal agent of potato wart. We received 40 samples of soil from Minnesota for this test.

There were several interesting finds in our field samples this year. One sample from a birch tree showed fasciations of the limbs, which is a physiological disorder but fairly unusual. Our field inspector, Brad Newbry, also found a new species of rust infecting 2 varieties of *Kalanchoe* that came in to a nursery on a shipment originating in Costa Rica. This discovery is still being investigated with hopes of publication on the new species. We also had several isolations of *Fusarium oxysporum*, which causes a wilt on beans and peas. Although this is not a new pathogen to the area, the infection rates were higher than usual, possibly due to the drought.

One final find of note was *Ralstonia solanacearum* race 3 biovar 2 on geraniums in early 2003. We intercepted an infected plant in a greenhouse after USDA notification that an infected shipment had been received from Kenya. *Ralstonia solanacearum* race 3 biovar 2 is a bacterium. It is considered a select agent by the federal government as it causes severe damage to geraniums, tomatoes and potatoes, and can survive in colder temperatures. All susceptible host species within range of an infected plant must be destroyed. We received invaluable cooperation from the nursery industry and were able to eradicate the pest from Idaho.

CROP		# SAMPLES	# TESTS	POSITIVES (Organism)	TO
Bean	seed	249	1449	1 (<i>Xanthomonas axonopodis phaseoli</i>) 2 (<i>Pseudomonas syringae syringae</i>) 1 (<i>Xanthomonas axonopodis phaseoli var. fuscans</i>) 1 (Potyvirus)	33
	field	29	31	3 (<i>Fusarium oxysporum</i>)	40
Misc Seed					18
	radish	9	18	1 (<i>Salmonella</i> sp.)	
	pea	4	6		
	barley	35	38	(<i>Tilletia controversa</i>)	
	alfalfa	9	11		
	wheat	23	25		
	wheat straw	2	3	1 (<i>Urocystis</i> sp.)	
	pepper	2	4		
	fescue	1	1	1 (<i>Neotyphodium</i> sp.)	
	broccoli	7	14		
	tomato	3	3		
	orchard grass	1	1		
Potato					27
	seed	13	41	1 (<i>Erwinia caratovora atroseptica</i>)	
Soil					(106)
	MN - potato wart	40	40		
KB Survey		37	37		(66)
Misc Field					24
	geranium	10	11	1 (<i>Ralstonia solanacearum</i> race3 biovar2)	
	mint	3	3		
	birch	1	1	fasciation	
	tomato	1	0		
	Kalanchoe	1	1	Rust - new species	
	pea	19	24	4 (<i>Fusarium oxysporum</i>)	
	onion	1	1		
	alfalfa	6	15	4 (<i>Phoma medicaginis</i>)	
	verbena	1	1		
	beets	1	1		
	corn	87	243	2 (High Plains Virus) 3 (Wheat Streak Mosaic Potyvirus)	
	lettuce	1	1	1 (Tomato Spotted Wilt Virus)	
	soybean	1	1		
	poplar	1	1	1 (<i>Agrobacterium tumefascians</i>)	
TOTAL		598	2026		28

EXPORT CERTIFICATION FOR THE 2003 CALENDAR YEAR

The ISDA issued 3,361 Federal and 1,660 State Phytosanitary Certificates for 77 different types of commodities to 97 countries. The Plant Industries Division certified 165,928,283 pounds of seed and other commodities for export. The Idaho State Department of Agriculture operates this program under a Memorandum of Understanding with the U.S. Department of Agriculture.

NURSERY INSPECTIONS FOR COMPLIANCE WITH THE IDAHO NURSERY LAW TITLE 22, CHAPTER 23 IDAHO CODE

In 2003, there were 1,886 licensed nurseries, and of those, 866 were inspected for compliance with the Idaho Nursery and Florists Law and for the presence of plant pests and noxious weeds. In addition, specific checks were made for compliance with various state laws, quarantines and pests of particular concern. The results are listed below:

Quarantine/Pests	NO. INSPECTIONS	Incidents	Corrective Action	Stop Sales
Certified Seed Potatoes	122	2	1	
Onion White Rot	172	62	14	8
European Corn Borer	189			
Japanese Beetle	382			
European Pine Shoot Moth	337	3		
Mint Quarantine	159	3	1	1
Crop Management Zone	81			
Grape Quarantine	88	3	1	2
Peach Tree Quarantine	54			
Sudden Oak Death	147			
Pine Shoot Beetle	323			
Gypsy Moth	386			
Red Imported Fire Ants	327			
Noxious Weeds	633	38	15	
Idaho Seed Law	280	12		3
Nematodes	1	1		
Aphids	784	52	14	1
Late Blight	2	1		
Hops	43			
Retail Potatoes	147	15		
General Pests	151	64	26	5
Day Lily Rust	0			
Total Inspections	4,808	248	64	20

*GOLDEN NEMATODE AND OTHER EXOTIC NEMATODE SURVEY 2002-2003

Objective

Golden nematode *Globodera rostochiensis* (GN), and potato wart *Synchytrium endobioticum* (PW) have been identified by APHIS as significant economic threats to food production and were placed on the National Priority Pest List, as well as being on the Western Region CAPS committee pest list. Additionally, potato mop top virus (PMTV) was included in the survey. None of these organisms have ever been detected in Idaho, yet importers have requested scientific assurance of this fact before they will import table-stock, processing stock or seed potatoes from Idaho. A comprehensive statewide detection survey was conducted for these three exotic potato pests from 2002 to 2003.

Procedures

The ISDA GN and PW survey followed the general principals laid out by APHIS for the preliminary survey design. Some aspects of the protocol were adjusted in order to produce a more practical and sustainable survey. ISDA personnel sampled soil and tubers from each of Idaho's 60 potato packing sheds in accordance with APHIS protocols. Adding to the extent of the survey, certified seed potato lots were sampled and tested cooperating with Idaho Crop Improvement Association. Nematode analysis was conducted by the University of Idaho, Nematology Lab, Parma, ID under the supervision of Dr. Saad Hafez. ISDA Plant Pathology Lab conducted the PW and PMTV diagnostics.

Results

A total of 3,020 soil samples from packing sheds, representing lots of potatoes from 13 counties, were found negative for GN. Analysis of 120 tuber samples drawn from packing shed processing lines and cull piles were found negative for GN. These samples represented lots of potatoes from 9 counties. Seven hundred sixteen tuber samples drawn from ICIA certified seed potato lots, representing 19 counties, were all found negative for GN infestations. In the Idaho Crop Improvement Association Seed Lot Tuber survey, analysis was also conducted for two established species: the Columbia root knot nematode and Northern root knot nematode. Results for these two species were negative in all 716 tuber lots sampled. A smaller sample subset from the packing shed survey, was found negative for PW and PMTV. Seven hundred fifty-one samples (3,002 tubers) from ICIA also tested negative for PMTV. The results of these surveys are summarized in Table 1. ISDA, in cooperation with the University of Idaho, Nematology Lab, Parma, ID, also conducted analysis of packing shed soil samples for other exotic and established nematode species. The results from this survey are summarized in Table 2. No corn cyst, oat cyst, pea cyst, soybean cyst, or burrowing nematodes were found in the statewide samples. Relatively low levels of infestation of the established nematodes species (Northern root knot and Columbia root knot nematode) were found in the samples. Eight out of 3,020 samples were positive for Northern root knot nematode and 92 samples out of 3,020 were positive for Columbia root knot nematode. The data from this survey has been uploaded to the National Agricultural Pest Information System (NAPIS).

Table 1. ISDA Division of Plant Industries Potato Disease Survey 2002-2003			Exotic Nematode and Disease Survey Results		
Sample Source	# Samples	Counties represented	Golden Nematode	Potato Wart	Potato Mop Top Virus
Commercial packing shed soil samples	3,020	Bannock, Bingham, Bonneville, Canyon, Cassia, Clark, Fremont, Jefferson, Madison, Minidoka, Power, Teton, Twin Falls	Negative in all samples	Not surveyed	Not surveyed
Commercial packing shed processing line and cull pile tuber samples	120 for GN 21 for PW	Bingham, Bonneville, Cassia, Fremont, Jefferson, Madison, Minidoka, Power, Twin Falls	Negative in all samples	Negative in all samples	Negative in all samples
Idaho Crop Improvement Association seed potato tuber survey	751 lots samples for PMTV 716 lots samples for Golden Nematode	Bingham, Blaine, Bonneville, Butte, Caribou, Cassia, Clark, Custer, Elmore, Franklin, Fremont, Kootenai, Lincoln, Madison, Minidoka, Oneida, Power, Teton, Valley	Negative in all samples	Not surveyed	Negative in all samples

Table 2. Other nematode species in commercial packing shed soil survey 2002-2003, Total sample size 3,020. Samples from 13 Idaho counties

Exotic Nematode Species					Established Species	
Corn cyst nematode <i>Heterodera zeae</i>	Oat cyst nematode <i>Heterodera avenae</i>	Pea cyst nematode <i>Heterodera goettigiana</i>	Soybean cyst nematode <i>Heterodera glycines</i>	Burrowing nematode <i>Radopholus similis</i>	Northern root knot nematode <i>Meloidogyne hapla</i>	Columbia root knot nematode <i>Meloidogyne chitwoodi</i>
None found	None found	None found	None found	None found	8 positive samples	92 positive samples

WHEAT SEED GALL NEMATODE *Anguina tritici - There were 37 samples processed from 16 counties analysed for the presence of this exotic nematode by Dr. Saad Hefez, Nematologist, University of Idaho. All of the samples were subsampled and 200 grams of seed were placed in a mist chamber using a Baermann funnel extraction technique. All samples were negative for Wheat seed gall nematode. Below is a table listing sample numbers by county in the 2003 survey.

COUNTY	POSITIVE	NEGATIVE	TOTAL
ADA	0	1	1
BENEWAH	0	2	2
BONNEVILLE	0	4	4
BUTTE	0	1	1
CARIBOU	0	2	2
CLARK	0	1	1
FRANKLIN	0	1	1
GEM	0	1	1
IDAHO	0	4	4
JEROME	0	2	2
LATAH	0	7	7
LINCOLN	0	2	2
MINIDOKA	0	4	4
ONEIDA	0	2	2
PAYTETTE	0	1	1
TWIN FALLS	0	2	2
TOTAL	0	37	37

ISDA SEED LAB YEAR END SUMMARY

Fiscal year 2003 was a difficult year for the Idaho State Seed Laboratory due to the continued slow economic times for the seed industry. Many of the grass seed companies had carryover seed which was not being tested or sold. Total service samples received in FY 2003 equaled 8,246 samples. This number represented an increase of only 101 samples or 1.24% in service samples compared to Fiscal Year 2002. Adjustments were made within the Plant Industry Division to keep the seed laboratory staff working on different projects during the summer months when the seed laboratory is not busy.

In Fiscal Year 2003, two experienced seed analysts retired. A third experienced analyst left the state lab to work in the private sector. From their absence, the Idaho Sates Seed Laboratory hired a Registered Seed Technologist to be a Principal Seed Analyst and two other people were hired to become seed analysts. We were fully staffed by the end of the testing season.

This annual report, previous years' reports, pest distribution maps, laws, rules, press releases and various forms can be found in the publications section on the ISDA World Wide Web Home Page at: www.agri.idaho.gov.

* - Indicates a program carried out under State/Federal funding. Those not marked with an asterisk were carried out under state funding only.

Prepared by: Ben Simko, Program Manager, Division of Plant Industries, Idaho State Department of Agriculture, P.O. Box 790, Boise Idaho, 83701, Telephone: (208) 332-8620, Fax: (208) 334-2283, E-mail: bsimko@idahoag.us

January 2004

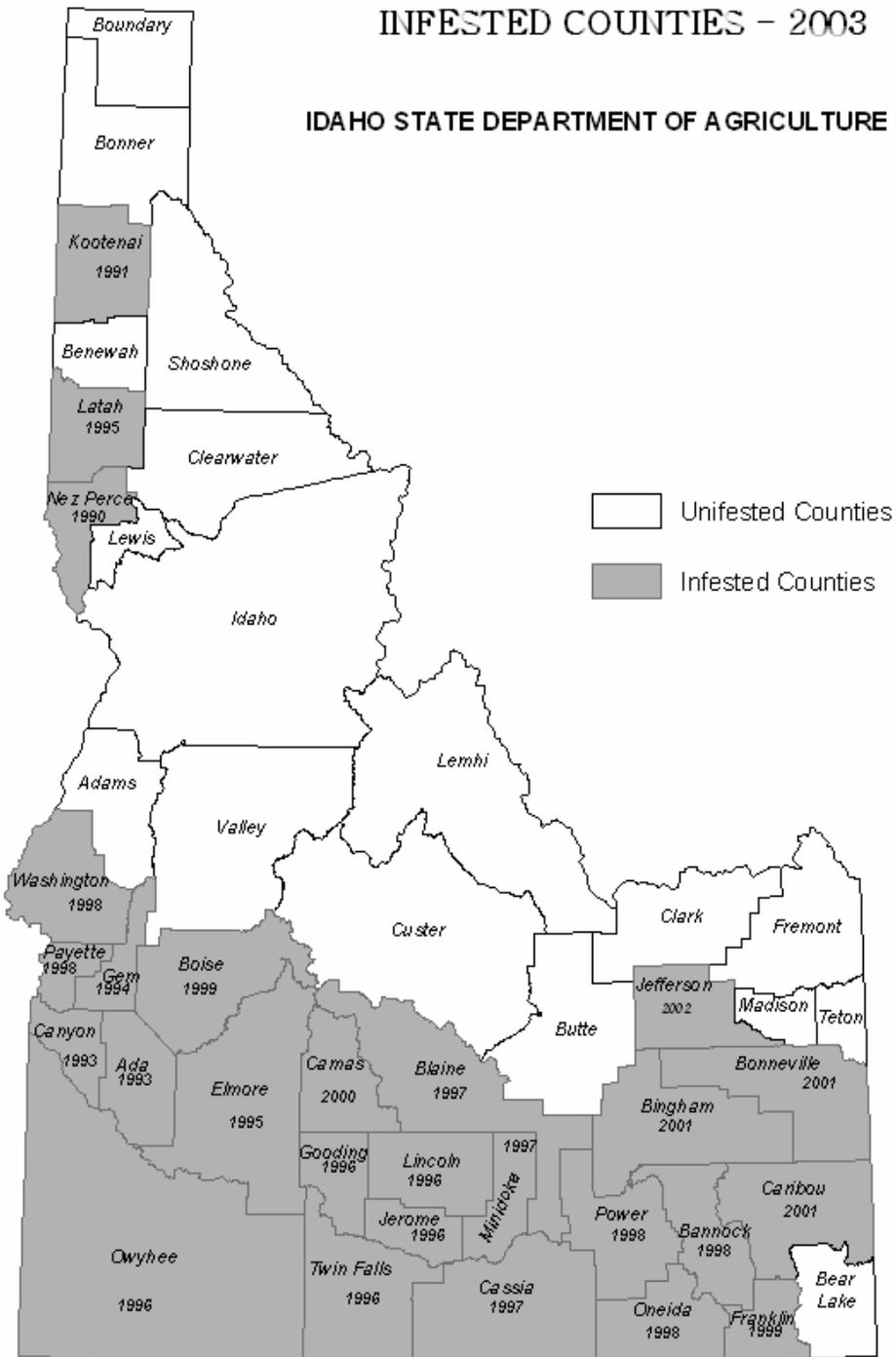
IDAHO CEREAL LEAF BEETLE INFESTED COUNTIES - 2003

The Cereal Leaf Beetle larval parasite
Tetrastichus julis is known to be established
in Ada, Bonneville, Boundary, Canyon,
Cassia, Franklin, and Twin Falls counties.
Idaho Department of Agriculture data 2003.

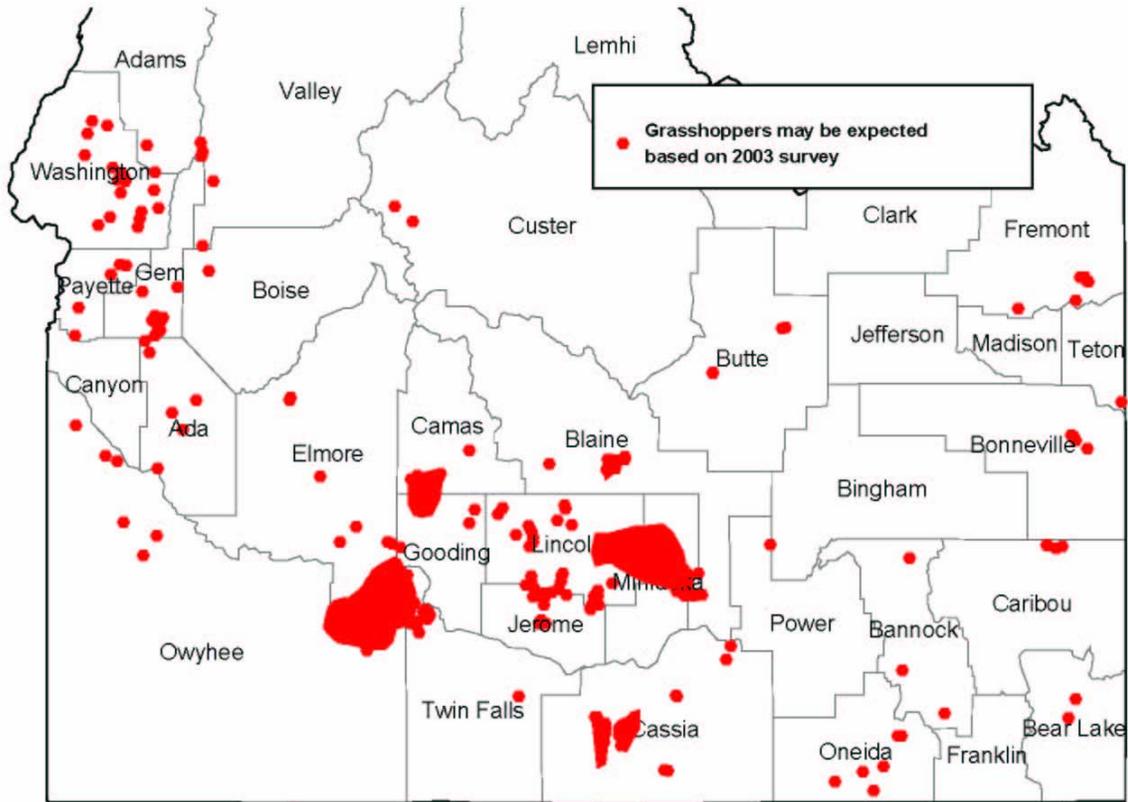


IDAHO EUROPEAN PINE SHOOT MOTH INFESTED COUNTIES - 2003

IDAHO STATE DEPARTMENT OF AGRICULTURE DATA 2003



Idaho 2004 grasshopper outlook



Idaho 2004 Mormon cricket outlook

