

**IDAHO STATE DEPARTMENT OF AGRICULTURE (ISDA)**  
**DIVISION OF PLANT INDUSTRIES**  
**BUREAU OF FEEDS AND PLANT SERVICES**  
**2002 SURVEY, NURSERY AND FIELD INSPECTION SUMMARY**

**APPLE MAGGOT (AM) (*Rhagoletis pomonella* Walsh)** - In 2002, 444 traps were placed at 271 sites in seven counties (Boise, Bonner, Canyon, Gem, Owyhee, Payette, and Washington) in and around the commercial apple production areas of each county. Four positive detections were made at three sites within the AM-free zone in Washington County. This zone is established by rules (IDAPA 02.06.08) under authority of Title 22, Chapter 20, Idaho Code. The Washington County Abandoned Orchard Review Board 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. ISDA plans to increase the trapping density in this area in 2003. Forty-one adults were caught at a sentinel site on native hawthorn in Boise County and two were trapped in Washington County on native hawthorn. Both sites were outside of the AM-free zone. All identifications are made through genitalia dissections performed by University of Idaho 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 during the winter of 2001/2002 using Geographic Information System (GIS) and Global Positioning System (GPS) technology. As a result of this effort the number of traps placed this year was greatly increased over previous seasons. An historical summary can be on the ISDA website at [www.agri.state.id.us](http://www.agri.state.id.us) in the publications section.



**\*BEAN ANTHRACNOSE (*Colletotrichum lindemuthianum*)** – A survey for bean anthracnose was made in the 2002 calendar year, in conjunction with the Idaho Bean Commission. The fungus that causes bean anthracnose can be seed-borne and is a major concern to bean growers worldwide. It has never been found in Idaho; however, outbreaks in other states (North Dakota, Michigan) and in Canada may be a sign that increased vigilance is called for.

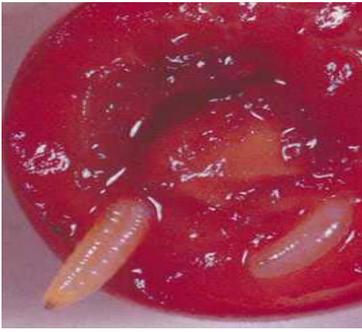
All bean samples submitted to the ISDA plant pathology laboratory originating from outside of the U.S., east of the Rocky Mountains, or without a phytosanitary certificate for anthracnose, were tested for anthracnose. We used the protocol as outlined by the International Seed Testing Association (ISTA) for testing the seed. Thirty-three samples from six other countries and six states within the U.S. were tested, and all were found negative for the disease. Idaho law has since been changed to require that bean seed for planting in Idaho be tested for bean anthracnose in addition to testing for the five bacterial blights as was already required.

**\*CEREAL LEAF BEETLE (CLB) (*Oulema melanopus* (Linnaeus))** – CLB was detected in Butte and Teton counties for the first time in 2002. There were 60 sites surveyed in 11 counties. The larval parasite, *Tetrastichus julis*, was recovered from Ada County in 2002. This is a new county record for the occurrence of *Tetrastichus julis* in Idaho. No recoveries of either larval or egg parasites were made from the other release sites in the state. Additional parasite releases were made in Twin Falls County at a field insectary currently being established in Kimberly, Idaho through cooperation with the University of Idaho and the Idaho State Department of Agriculture. A map showing Idaho counties positive for CLB is located on page 21.



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

**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 June 7, 2002, and on June 10, 2002 at four sites in Canyon County. A degree-day model is also used to supplement the trapping program. The dates that the 1060 degree-day accumulation was met or exceeded over the past few years is summarized in the table below. Written notification that fly emergence was eminent was sent to all growers through the Idaho Cherry Commission on May 20, 2002. No cherry fruit fly larvae were detected during inspection activities at any of the packing sheds this year. 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 1998-2002 (1060 Degree Days)**

CITY	2002	2001	2000	1999	1998
PARMA	June 8	May 24	May 22	May 31	June 2
NAMPA	June 6	June 1	June 1	N/A	N/A
CALDWELL	June 3	June 3	May 31	May 28	June 3

**EUROPEAN CORN BORER (ECB) (*Ostrinia nubilias*)**

- 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 98 traps were placed at 57 sites in 21 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 (EPSM) (*Rhyacionia bouliana* Denis & Schiffermuller)** - In 2002,



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

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 117 traps placed at 100 sites in 23 counties. Adult moth emergence can be expected around the first week of June. A new positive site was found in Jefferson County. This survey is performed to track EPSM's movement within the state for compliance with California and Nevada quarantines. Nineteen nurseries were trapped for compliance with the California EPSM quarantine, 313 visual inspections of nurseries were made for the presence of EPSM, and three nurseries were required to take corrective actions to control EPSM-infested stock. 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))** - In 2002, 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 2002, the cooperating agencies in the Idaho gypsy moth detection program placed 5,024 detection traps throughout the state (Table 2). Trapping costs for the 2002 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 2001 and April 2002, there were 5188 move-ins to the state in areas to be trapped, an 8.2% 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 2002. These traps were placed at a density of 16 traps/mi<sup>2</sup>. 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. Both sites will have delimitation traps placed in the 2003 season as well.

Mass Trapping – No mass trapping was done in Idaho in 2002.

**Table 1 - Number of gypsy moth traps placed, by agency, in Idaho in 2002.**

AGENCY	DETECTION TRAPS	DELIMITING TRAPS	MASS TRAPS	TOTAL TRAPS
Idaho Dept. of Lands	2,905	19	0	2,924
Idaho Dept. of Agriculture	1,605	0	0	1,605
USFS - Region 4	409	16	0	425

AGENCY	DETECTION TRAPS	DELIMITING TRAPS	MASS TRAPS	TOTAL TRAPS
USFS - Region 1	105	0	0	105
<b>TOTALS</b>	<b>5,024</b>	<b>35</b>	<b>0</b>	<b>5,059</b>

**Table 2 - Costs of the 2002 gypsy moth survey program.**

AGENCY	COST
Idaho Department of Lands	\$41,857.00
Idaho Department of Agriculture	\$16,230.00
US Forest Service - Region 1	\$4,050.00
US Forest Service - Region 4	\$10,000.00
USDA - APHIS Direct costs for traps, baits and travel.	\$1,200.00
USDA - APHIS Cooperative grants.	\$16,506.00
<b>TOTAL</b>	<b>\$89,843.00</b>

**Table 3 - 2002 Trap placement by counties.**

COUNTY NAME	COUNTY NO.	DETECTION 4/MILE <sup>2</sup>	DELIMITATION 16/MILE <sup>2</sup>	MASS 9/ACRE	TOTAL TRAPS
Ada	1	435	0	0	435
Adams	2	0	0	0	0
Bannock	3	102	0	0	102
Bear Lake	4	4	0	0	4
Benewah	5	100	0	0	100
Bingham	6	28	0	0	28
Blaine	7	167	0	0	167
Boise	8	40	0	0	40
Bonner	9	1,069	19	0	1,088
Bonneville	10	106	0	0	106
Boundary	11	132	0	0	132
Butte	12	0	0	0	0
Camas	13	0	0	0	0
Canyon	14	207	0	0	207
Caribou	15	10	0	0	10
Cassia	16	19	0	0	19
Clark	17	2	0	0	2
Clearwater	18	91	0	0	91
Custer	19	24	0	0	24
Elmore	20	62	0	0	62
Franklin	21	8	0	0	8
Fremont	22	19	0	0	19
Gem	23	45	0	0	45
Gooding	24	86	0	0	86
Idaho	25	123	0	0	123
Jefferson	26	6	0	0	6
Jerome	27	27	0	0	27
Kootenai	28	907	0	0	907
Latah	29	242	0	0	242

COUNTY NAME	COUNTY NO.	DETECTION 4/MILE <sup>2</sup>	DELIMITATION 16/MILE <sup>2</sup>	MASS 9/ACRE	TOTAL TRAPS
Lemhi	30	24	0	0	24
Lewis	31	9	0	0	9
Lincoln	32	4	0	0	4
Madison	33	15	16	0	31
Minidoka	34	12	0	0	12
Nez Perce	35	124	0	0	124
Oneida	36	6	0	0	6
Owyhee	37	26	0	0	26
Payette	38	50	0	0	50
Power	39	10	0	0	10
Shoshone	40	213	0	0	213
Teton	41	8	0	0	8
Twin Falls	42	215	0	0	215
Valley	43	202	0	0	202
Washington	44	45	0	0	45
<b>TOTALS</b>		<b>5,024</b>	<b>35</b>	<b>0</b>	<b>5,059</b>

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.

**\*GRASSHOPPER / MORMON CRICKETS** – This program is jointly administered by the Idaho State Department of Agriculture (ISDA) and the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine Office (USDA, APHIS, PPQ). The USDA has responsibility for federal lands and the ISDA has responsibility for state and private lands. The ISDA is required to control grasshoppers and Mormon crickets under the Plant Pest Control and Research Commission Act, Section 22-2108, Title 22, Chapter 21, Idaho Code.

**Summary of Survey Results – Grasshoppers** -With a few exceptions, most areas of Idaho did not have heavy grasshopper infestations in 2002.

There was no significant recurrence of the 2001 grasshopper outbreaks in Valley County except in areas that were not treated by State and private programs in 2001.

An incipient, potentially heavy, outbreak was detected in the area south of the Snake River along the Twin Falls, Elmore, and Owyhee county boundaries. We anticipate that this infestation may expand and possibly intensify in 2003.

There were also significant infestations along Bennett Mountain in Elmore County, near Richfield in Lincoln County, from Elba to Almo in Cassia County, and south of Malad City in Oneida County.

Species composition consisted primarily of *Aulocara ellioti*, *Oedaleontus enigma*, and *Camnula pellucida*. *Melanoplus sanguinipes* continues to occur only sporadically in significant population densities. Heavy populations of *Melanoplus bivittatus* and *Melanoplus packardii* were observed in limited areas. The infestation in Owyhee County includes *Cratypedes neglectus*.

The prolonged autumn season should have allowed exceptional oviposition opportunities and there are currently no factors that would indicate any reason to expect major increases or decreases in overall grasshopper populations in 2003.

**SIGNIFICANT 2002 GRASSHOPPER SURVEY RESULTS**

County	Acres infested at more than 8 grasshoppers per sq. yd.			
	BLM	National Forest	State Land	Private Lands
Bear Lake				10,000
Bingham				5,000
Blaine	2,000			17,000
Caribou				5,000
Cassia	2,000			18,000
Elmore	100,000			15,000
Franklin				8,000
Gooding	8,000			2,000
Lincoln	5,000			65,000
Oneida	2,500	2,500		20,000
Owyhee	30,000			
Twin Falls	2,000			6,000
Valley				5,000
<b>Total</b>	<b>151,500</b>	<b>2,500</b>		<b>176,000</b>

**Mormon Crickets** - The Mormon cricket infestation that has been building in the Mayfield area of Elmore County, increased in density and extent in 2002. 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, and Boise Counties. This infestation extended approximately 80 miles from Horseshoe Bend to King Hill, and included about 515,000 acres of rangeland. Interesting highlights of this infestation included:

Several bands crossed the South Fork of the Boise River and climbed onto the tablelands of Smith’s Prairie in Elmore County where they invaded hayfields and pastures.

Large numbers of crickets crossed Lucky Peak Reservoir where they created a major nuisance for boaters and other recreationalists. Substantial flocks of seagulls fouled boat dock areas while and after feeding on the crickets.

Crickets appeared in high densities along Highway 55 near Horseshoe Bend, and Boise County Emergency Services personnel set up warning signs to alert drivers of slick road conditions.

There was also an infestation of about 50,000 acres of Mormon crickets on the northern foothills of the Owyhee mountains in Owyhee County and an emerging infestation in Oneida County south of Malad City.

The prolonged autumn 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 2003. We anticipate the large infestation in Elmore, Ada and Boise Counties has not yet reached its peak.

## SIGNIFICANT 2002 MORMON CRICKET SURVEY RESULTS

County	Acres infested at more than 8 Mormon crickets per sq. yd.			
	BLM	National Forest	State Lands	Private Lands
Ada	10,000		5,000	60,000
Boise	5,000		1,000	34,000
Elmore	200,000	100,000	30,000	70,000
Gem	6,000			2,000
Oneida				10,000
Owyhee	40,000		5,000	5,000
Washington		12,000		
<b>Total</b>	<b>261,000</b>	<b>112,000</b>	<b>41,000</b>	<b>181,000</b>

### SUMMARY OF COMPLAINTS AND TREATMENTS

Many members of the public, especially along the Boise and Danskin Fronts in Ada and Elmore 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, PPQ** received from federal land managers a total of 17 official complaints about grasshoppers and Mormon crickets on federal lands. We conducted 4 treatments in response to 5 of these complaints.

The treatment for two complaints was on 35 acres of BLM land along a fence line near Oakley in Cassia County. *Camnula pellucida* was the grasshopper species. Population density was 40 per sq. yd.

Another treatment was done on 205 acres of BLM land south of Bliss in Elmore and Twin Falls Counties. *Aulocara ellioti* and *Oedaleontus enigma* were present at 15 per sq. yd.

Another treatment was done on 10 acres near Richfield in Lincoln County for *Camnula pellucida* at 30 per sq. yd.

Another treatment was done on 340 acres of National Forest and BLM land north of Mountain Home in Elmore County. *Anabrus simplex* was present at 20 per sq. yd.

Total BLM lands treated amounted to 270 acres; 20 acres by air and 250 acres by ground. Total National Forest treated amounted to 320 acres; all by air. All treatments were done with 5% carbaryl bait at 10 pounds per acre.

The other 12 official complaints did not result in treatment by PPQ because either:

- Insects were on private land and not on federal land, or
- Sagebrush exceeded 5% coverage on the site, or
- Numbers of insects present did not justify treatment

**Idaho State Department of Agriculture (ISDA)** treated 800 acres of state lands on Danskin Mountain, over 30 miles of rural roadside rights-of-way in Elmore County and 125 acres of state lands on Horseshoe Bend Hill in Boise County with 5% carbaryl bait. The Elmore County treatments were to protect rangeland, and the Boise

County treatment was to protect traffic on highway 55 from danger caused by crickets making the roadway slick.

In addition to the treatments applied to state lands, ISDA participated in a cost-share program with private land managers across southern Idaho.

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

2002 BAIT COUNTY DELIVERY, DISTRIBUTION AND BALANCE TOTALS

COUNTY	COUNTY 2001 BALANCE	NUMBER OF DISTRIBUTIONS	AMOUNT DELIVERED	AMOUNT DISTRIBUTED	RETURNED TO STORAGE	2002 BALANCE
<b>COUNTY TOTALS</b>						
ADAMS	1,900	0	0	0	0	1,900
BEAR LAKE	300	1	0	300	0	0
BINGHAM	2,050	1	0	2,050	0	0
BLM	0	5	2,500	2,500	0	0
BOISE	0	4	4,544	4,544	0	0
BONNEVILLE	0	3	2,050	1,100	950	0
CAMAS	1,050	1	0	1,050	0	0
CASSIA	1,650	14	2,000	3,500	0	150
ELMORE	850	249	122,632	120,482	3,000	0
FRANKLIN	1,550	7	2,000	1,900	0	1,650
FREMONT	1,600	4	1,000	1,850	750	0
GEM	1,500	8	4,000	3,350	2,150	0
GOODING	750	1	0	750	0	0
JEFFERSON	1,350	1	0	0	1,350	0
LINCOLN	3,000	87	14,000	15,250	1,750	0
MADISON	0	2	3,000	3,000	0	0
MINIDOKA	650	0	0	0	0	650
ONEIDA	1,400	3	2,000	2,000	0	1,400
OWHYEE	1,300	3	0	1,300	0	0
POWER	1,600	2	0	600	0	1,000
TWIN FALLS	0	5	2,300	750	1,550	0
VALLEY	1,000	2	2,000	50	2,000	950
WASHINGTON	1,450	6	500	600	1,350	0
PPQ BOISE-STORAGE-STATE BAIT TO PRIVAT	0	2	500	500	0	0
<b>COUNTY TOTALS</b>	<b>24,950</b>	<b>411</b>	<b>165,026</b>	<b>167,426</b>	<b>14,850</b>	<b>7,700</b>

The efforts put forth by private landowners on Smith Prairie in Elmore County, were especially noteworthy. In association with the Elmore County Extension Agent, they organized community action work groups that hauled tons of bait from the county storage unit and spread the bait on private range and crop lands. Although there was loss to hay crops when the crickets first reached the area, the combined efforts of the ranchers prevented extensive damage.

ISDA also provided cost-share support for aerial applications of insecticides. These treatments included six blocks totaling 3,570 acres. Treatments utilized Furadan, Asana, Malathion, Atrapa, Sevin, and Dimethoate. Two more area-wide projects were considered in Lincoln and Oneida counties, but participants decided to forgo treatment because it was too late in the season. They anticipate area-wide treatments with dimilin in 2003 if populations persist.

**New Environmental Documentation** - In May, USDA APHIS and US Forest Service initialized and completed a Memorandum of Understanding (MOU) that moved the responsibility for preparing Environmental Documentation under the National Environmental Policy Act (NEPA) from Forest Service to APHIS. Subsequently, Boise Office personnel of USDA APHIS PPQ prepared an Environmental Assessment (EA) for the National Forest lands infested with Mormon crickets in Elmore, Ada and Boise counties.

The Lower Snake BLM Region also completed an EA which expanded the areas subject to treatment for Mormon crickets. This EA allowed treatment of rangeland that was not within ¼ mile of crops. It did, however retain all the other provisions of the EA published by BLM in 2000 and the provisions of the settlement agreement from the lawsuit in 2000. These provisions included a prohibition of treatment of land with more than 5% sagebrush cover until after July 15, and a prohibition of all pesticides except for Carbaryl bait.

USDA APHIS PPQ published the Rangeland Grasshopper and Mormon Cricket Suppression Program Final Environmental Impact Statement – 2002 in August. This Environmental Impact Statement (EIS) provides programmatic coverage for 17 western states and addresses the insecticidal options available to USDA APHIS PPQ when requests for suppression of grasshopper/Mormon crickets are received from land managers. A Record of Decision (ROD) was issued in accordance with NEPA October 15<sup>th</sup>. The EIS and ROD are available at <http://www.aphis.usda.gov/ppd/es/gh.html>

USDA APHIS and BLM are currently negotiating an MOU which will move the responsibility for preparing NEPA documentation from BLM to APHIS. In a forward-leaning posture, USDA APHIS PPQ has begun scoping activities and other actions which are intended to result in completion of an EA for grasshopper and Mormon cricket suppression on rangeland in southern Idaho. The targeted completion date is February 28, 2003.

This report was prepared by Mr. Dave McNeal and Mr. Rob McChesney, USDA-APHIS-PPQ, 9134 W. Blackeagle Drive, Boise, Idaho 83709, phone (208) 378-5797. The state of Idaho information was provided by Michael E. Cooper, Idaho State Department of Agriculture, phone (208) 332-8620.



**JAPANESE BEETLE (Popillia japonica Newman)** – During the 2002 field season, 69 traps were placed at 69 sites in 20 counties and 328 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.

**\*KARNAL BUNT (Tilletia indica)** – There were 60 samples processed from 21 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. A complete listing of all survey samples taken are listed below:

COUNTY	POSITIVE	NEGATIVE	TOTAL
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COUNTY	POSITIVE	NEGATIVE	TOTAL
BANNOCK	0	1	1
BEAR LAKE	0	1	1
BINGHAM	0	11	11
BLAINE	0	1	1
BOUNDARY	0	1	1
CAMAS	0	1	1
CANYON	0	4	4
CASSIA	0	8	8
CLEARWATER	0	1	1
ELMORE	0	1	1
FREMONT	0	2	2
GOODING	0	1	1
JEFFERSON	0	3	3
KOOTENAI	0	1	1
LEWIS	0	5	5
MADISON	0	3	3
NEZ PERCE	0	7	7
OWYHEE	0	1	1
POWER	0	5	5
TETON	0	1	1
WASHINGTON	0	1	1
TOTAL		60	60

**LEEK MOTH (*Acrolepiopsis assctella*)** – The Leek moth is not known to occur in the continental U.S., but was found in Ontario, Canada in 2000 and has been in Hawaii for many years. The Leek moth is a recognized



pest of onions and leeks in Europe and Japan. It was first recorded in Hawaii in 1939 on the island of Oahu. The larvae are highly specialized to feed on the leaves of various plants belonging to the genus *Allium*. The larvae prefer younger leaves (0-7 days), but will consume leaves up to two months old. The larvae tunnel in and chew perforations on young leaves which eventually become deformed older leaves. Occasionally, larvae may attack reproductive parts of the host plant but usually avoid the flowers. The flowers contain a saponin compound that inhibits the growth of the leek moth larva. In Idaho during 2002, 92 traps were placed at onion production fields in nine counties. All results were negative. Further information on the biology of this pest can be found

at the following Internet Websites:

<http://www.inra.fr/Internet/Produits/HYPPZ/RAVAGEUR/6acrass.htm>

<http://www.extento.hawaii.edu/kbase/crop/Type/acrolepi.htm>

**\*PLUM POX VIRUS (PPV)** - Idaho participated for the third year in a nationwide survey for the plum pox virus, and again, found all results negative. All other states participating in the survey, except for Pennsylvania, had no signs of the virus. Pennsylvania is the only state in the U.S. infected with the virus, and eradication efforts are still underway there.

Plum Pox is a viral disease that affects nearly all Prunus species causing symptoms such as misshapen fruit, ringspots on leaves and fruit, and decreased yield. It is spread by aphids and also by grafting. The possibility of spread by seed is still unclear.

This year, ISDA tested a total of 840 samples. We ran 809 samples from orchards in Canyon, Gem, Gooding, Idaho, Latah, Nez Perce, Payette and Twin Falls counties. We also tested 31 samples from nurseries in Boundary and Twin Falls counties. All testing was done according to the protocols established by USDA.



Canadian fruit trees in Ontario and Nova Scotia were found infected with plum pox virus in 2000. In the 2002 survey, no infected trees were found outside of the quarantine zone in Ontario, and no infected trees were found in Nova Scotia.

**\*POTATO MOP TOP VIRUS (PMTV)** – A disease of potatoes caused by the potato mop top virus (PMTV) was found for the first time in U.S. potatoes in Maine on July 26, 2002. Since that time, the Canadian Food Agency announced that it had been testing U.S. potatoes coming into Canada for PMTV since January of 2001. Canada then revealed that it had tested approximately 2,500 lots of potatoes and had found 110 processing lots, three table stock lots, and two bulk seed lots positive for PMTV. Ten states were implicated, Delaware, Florida, Idaho, Maine, Maryland, North Carolina, Oregon, Virginia, and Washington.

PMTV can cause discolored tissue in rings and arcs within the tuber, and can cause yellowing and discoloration of the leaves. The virus can be seed and soil borne. The virus is spread by the fungus *Spongospora subterranean f.sp. subterranean*, the causal agent of powdery scab of potato. This fungus is known to occur in Idaho and the northwest.

In response to the finding in Maine and subsequent announcement by Canada, the USDA implemented a nationwide survey of seed potatoes for the virus. All states were required to test a 3,000-tuber sample representing all lots of seed potatoes within the state. Using the USDA protocol, Idaho tested a total of 3,009 tubers representing 751 lots of seed and 100 growers. All samples were negative for the virus. We also tested one exempt seed grower at a rate of 200 tubers per farm in accordance with the USDA rules. This grower also tested negative for the virus.

### **DISEASES AND PESTS FOUND DURING 2002 FIELD INSPECTIONS FOR EXPORT CERTIFICATION**

Weather conditions for the 2002 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.

A total of 36,859 acres were submitted for inspection in 2002 compared to 40,201 acres submitted in 2001 (nine percent reduction); however, the number of acres actually inspected, due to multiple inspections required for some crop diseases, remained about the same (60,502 acres in 2001 versus 60,691 acres in 2002).

**Alfalfa seed:** A total of 1,278.3 acres were submitted for inspection. Canadian Thistle (*Cirsium arvense*) was observed in 276 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 13 acres of Barley were inspected in 2002. No *Urocystis agropyri*, *Tilletia controversa*, *Tilletia caries*, *Ustilago nuda*, or Barley stripe mosaic virus was detected.

**Beans, Dry:** A total of 3,138 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 12,651.43 acres were submitted for inspection. Bean common mosaic virus was detected and confirmed in 26 acres. 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. (Beet, Collards, Spinach and Turnip):** Four fields totaling 35 acres were inspected and found apparently free from *Alternaria brassicae*, *A. brassicola*, *Leptosphaeria maculans*, *Plasmiodiophora brassica*, *Pseudomonas syringae* pv. *maculicola*, *Sclerotinia sclerotiorum*, and *Xanthomonas campestris* pv. *campestris*.

**Cantaloupe, Cucumber and Watermelon:** Four small trial ground plots totaling 3.75 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* subsp. *citrulli*. None of the diseases listed were detected.

**Carrot:** All fields (244.8 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, or Stewart's bacterial blight were detected in any of the 7,380.91 acres submitted for inspection. Only one field was confirmed positive for High plains virus and Wheat streak mosaic virus. Insect damage was prevalent in many fields, especially late in the season during the second inspection. Head smut and Common smut were observed in numerous fields as has been the case in prior seasons. One 20 acre field was inspected, sampled and tested according to new requirements for export of corn seed to Australia. None of the quarantine diseases of concern were observed in this field.

**Cucurbita spp.:** Two small trial ground plots totaling 0.75 acres were inspected for several diseases including: Cucumber mosaic virus, Muskmelon mosaic virus Squash mosaic virus, Watermelon mosaic virus, *Pseudomonas syringae* pv. *lachrymans*, *Xanthomonas campestris* pv. *vesicatoria*, *Acidovorax avenae* subsp. *Citrulli*, and *X. campestris cucurbitae*. None of the diseases listed were detected.

**Garlic:** One field totaling 0.25 acres was inspected and found free from any disease symptoms of quarantine significance, including *Sclerotium cepivorum* (Onion white rot).

**Hops:** One group of fields totaling 600 acres was inspected for one grower and found free of *Verticillium dahliae*, and *Sphaerotheca macularis* (*S. humuli*).

**Lettuce:** Thirty-five fields totaling 181 acres were inspected and found apparently free from Lettuce mosaic virus.

**Mint:** Twenty-four fields totaling 206.83 acres were inspected and found apparently free from Mint stem borer, and *Verticillium dahliae*. Five of the fields totaling 30 acres, were found positive for *Meloidogyne hapla*.

**Onion, Chive, Leek:** Thirty-nine fields totaling 274.86 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 *Pyrennocheta terrestris*. No Onion white rot (*Sclerotium cepivorum*) was observed in any of the fields submitted for inspection.

**Peas:** A total of 4,872.55 acres (335 fields) were inspected during active growth. No *Ascochyta pisi*, Pea early browning virus, Pea enation mosaic virus, Pea seedborne mosaic virus, *Fusarium oxysporum f.sp. pisi*, or *Xanthomonas campestris pv. phaseoli* were observed in any of the fields.

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

**Potato:** Five fields (488 acres) were inspected and found apparently free from *Phytophthora infestans*, *Clavibacter michiganensis spp. sepedonicus*, and *Synchytrium endobioticum*.

**Radish:** Ten fields (95 acres) were inspected and found apparently free from *Colletotrichum higginsianum*, *Xanthomonas campestris pv. campestris*, and *X. campestris pv. raphani*.

**Wheat:** Two trial plots totaling three acres were inspected and found apparently free from *Tilletia controversa*, *T. indica*, *T. caries*, *T. texana*, *Urocystis agropyri*, and *Ustilago tritici*.

**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 2002 FIELD SEASON**

SPECIES	Number of Fields	SUBMITTED ACRES	INSPECTED ACRES
Alfalfa	52	1278.3	1,267.8
Barley	3	5	5
Beans, Dry	203	3138	7,232.1
Beans, Garden	883	12,651.43	26,617.76
Cabbage	0	0	0
Cantaloupe	2	2.25	2.25
Carrot	55	244.8	238.3
Chive	3	33	33
Corn	751	7,380.91	13,583.16
Corn, Area	30	490.5	
Cucumber	1	0.25	0.25
Dill	0	0	0
Garlic	1	0.25	0.25
Leek	1	7	7
Lettuce	35	181	181
Mint	24	206.83	336.66
Onion	35	234.86	234.85
Peas	335	4,872.55	1,0342.65
Peas, Area	92	5,506	N/A
Pepper, Bell	2	0.75	0.75
Pepper, Hot	3	0.75	0.75
Potato	5	488	488
Pumpkin	2	1	1
Radish	10	95	95

SPECIES	Number of Fields	SUBMITTED ACRES	INSPECTED ACRES
Red Clover	0	0	0
Squash	2	0.75	0.75
Turnip	1	9	9
Watermelon	1	0.25	0.25
Wheat	2	3	3
<b>TOTALS</b>	2,538	36,858.43	60,691.53

The field disease report was compiled by Curt Thornburg, Program Manager, Plant Industries, Boise, (208) 332-8620 and Garry West, Program Manager, Plant Industries, Twin Falls, (208) 736-2195.

### PLANT PATHOLOGY LAB SAMPLE SUMMARY 2002

The total number of samples processed in the plant pathology laboratory this year was 2,023, up slightly from last year. The lab ran a total of 3,831 tests on those samples. The larger number of samples this year was due to participation in a national potato survey for the potato mop top virus. The seed stock was found officially free from this virus in December.

The lab ran a total of 151 bean seed serologies this year. This is the lowest number of samples run since 1997. None were found positive for any of the organisms of concern. Also included was a small survey of bean seed for bean anthracnose (*Colletotrichum lindemuthianum*). Thirty-two lots of bean seed that came from either out of the country or from states east of the Rocky Mountains were tested for bean anthracnose. All were found negative.

The lab continues to test various seed crops for export purposes. This year the testing was expanded to include grass seed for endophytes and Upland Cress for white mold (*Sclerotinia* spp.).

Fewer field samples than usual were seen this year, perhaps because of the dry weather. Examples of common smut and head smut on corn, as well as some high plains virus were found. There was also a sample of dogwood anthracnose, daylily leaf spot, and downy mildew on pea. One field sample of beans came up positive for Bean Common Mosaic Virus, but no bacterial infections were seen in beans.

Finally, the plant pathology lab reevaluated its price structure. A new price list was published in December and made effective January 1, 2003. This was the first time in 10 years that the prices for pathology testing had been changed.

CROP	# SAMPLES	# TESTS	POSITIVES (Organism)	TURNOVER TIME (DAYS/SAMPLE)
<b>Bean</b>				
seed	151	922	0	28.19
field	10	17	0	34.56
<b>Misc Seed</b>				
alfalfa	42	79	0	34.24
barley	8	12	0	8.50
broccoli	11	20	0	11.81
corn	1	1	0	48.00

CROP	# SAMPLES	# TESTS	POSITIVES (Organism)	TURNOVER TIME (DAYS/SAMPLE)
orchard grass	1	1		11
pea	10	10	0	36
radish	2	4		18
spinach	1	1		25
upland cress	1	2	1 ( <i>Sclerotinia</i> sp.)	47.00
wheat	10	11	2 ( <i>Tilletia controversa</i> )	11.9
wheat straw	16	31	3 ( <i>Tilletia controversa</i> )	10.14
<b>Potato Year Out</b>				26.825
seed	14	32	Pvy, Plrv Levels not listed	
<b>Misc Field</b>				26.17
alfalfa	3	5		
apple	4	4		
asparagus	1	1		
bean	1	2		
beets	1	1		
bell pepper	1	1		
carrot	1	2		
cedar	1	1		
corn	23	47	1 (High Plains Virus) 1 ( <i>Ustilago maydis</i> ) 1 ( <i>Sphacelotheca reilaina</i> )	
crabapple	1	1		
cratageus	1	1	1 ( <i>Entomosporium</i> spp)	
cyclamen	1	1		
daylilly	1	1	1 ( <i>Glioecephalis hemerocallis</i> )	
dogwood	1	1	1 ( <i>Discula destructiva</i> )	
japanese pagoda	1	1		
juniper	1	1		
lettuce	2	2		
maple	1	1		
onion	1	1		
pea	13	13	1 ( <i>Peronospora</i> spp.)	
peach	1	1		
phlox	1	1		
plum	1	1		
potato	1	1	1 ( <i>Fusarium</i> dry rot)	
pumpkin	2	2		
pyrus	2	3		
quince	1	1		
rhododendron	2	2		
squash	1	1		
tomato	2	3		
viburnum	1	1		
vinca	1	1		

<b>CROP</b>	<b># SAMPLES</b>	<b># TESTS</b>	<b>POSITIVES (Organism)</b>	<b>TURNOVER TIME (DAYS/SAMPLE)</b>
willow	1	1		
zinnia	1	1		
<b>Surveys</b>				
Prunus	840	840		
wheat karnal bunt	60	60		
potato mop top	767	1712		
<b>TOTAL</b>	<b>2,023</b>	<b>3,863</b>		<b>25.16</b>

The Plant Pathology Laboratory Report was compiled by Ms. Liz Vavricka, principal microbiologist, Boise, ID Phone (208) 332-8640.

### **EXPORT CERTIFICATION FOR THE 2002 CALENDAR YEAR**

The ISDA issued 3,337 Federal and 2,128 State Phytosanitary Certificates for 78 different types of commodities to 100 countries. The Plant Industries Division certified 154,476,246 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 2002, there were 1,805 licensed nurseries, and of those, 911 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:

<b>Quarantine/Pests</b>	<b>NO. INSPECTIONS</b>	<b>Incidents</b>	<b>Corrective Action</b>	<b>Stop Sales</b>
Certified Seed Potatoes	120	6		
Onion White Rot	154			
European Corn Borer	101			
Japanese Beetle	328			
European Pine Shoot Moth	313	3		
Mint Quarantine	113			
Crop Management Zone	157			
Grape Quarantine	75	3	1	1
Peach Tree Quarantine	47			
Sudden Oak Death	87			
Pine Shoot Beetle	307			
Gypsy Moth	337			
Red Imported Fire Ants	282			
Noxious Weeds	579	38	15	
Idaho Seed Law	276	5		1

<b>Quarantine/Pests</b>	<b>NO. INSPECTIONS</b>	<b>Incidents</b>	<b>Corrective Action</b>	<b>Stop Sales</b>
Nematodes	1	1		
Aphids	770	52	18	
Late Blight	308			
Hops	21			
Retail Potatoes	161	37	3	
General Pests	147	75	14	5
Day Lily Rust	21			
<b>Total Inspections</b>	<b>4,705</b>	<b>220</b>	<b>51</b>	<b>7</b>

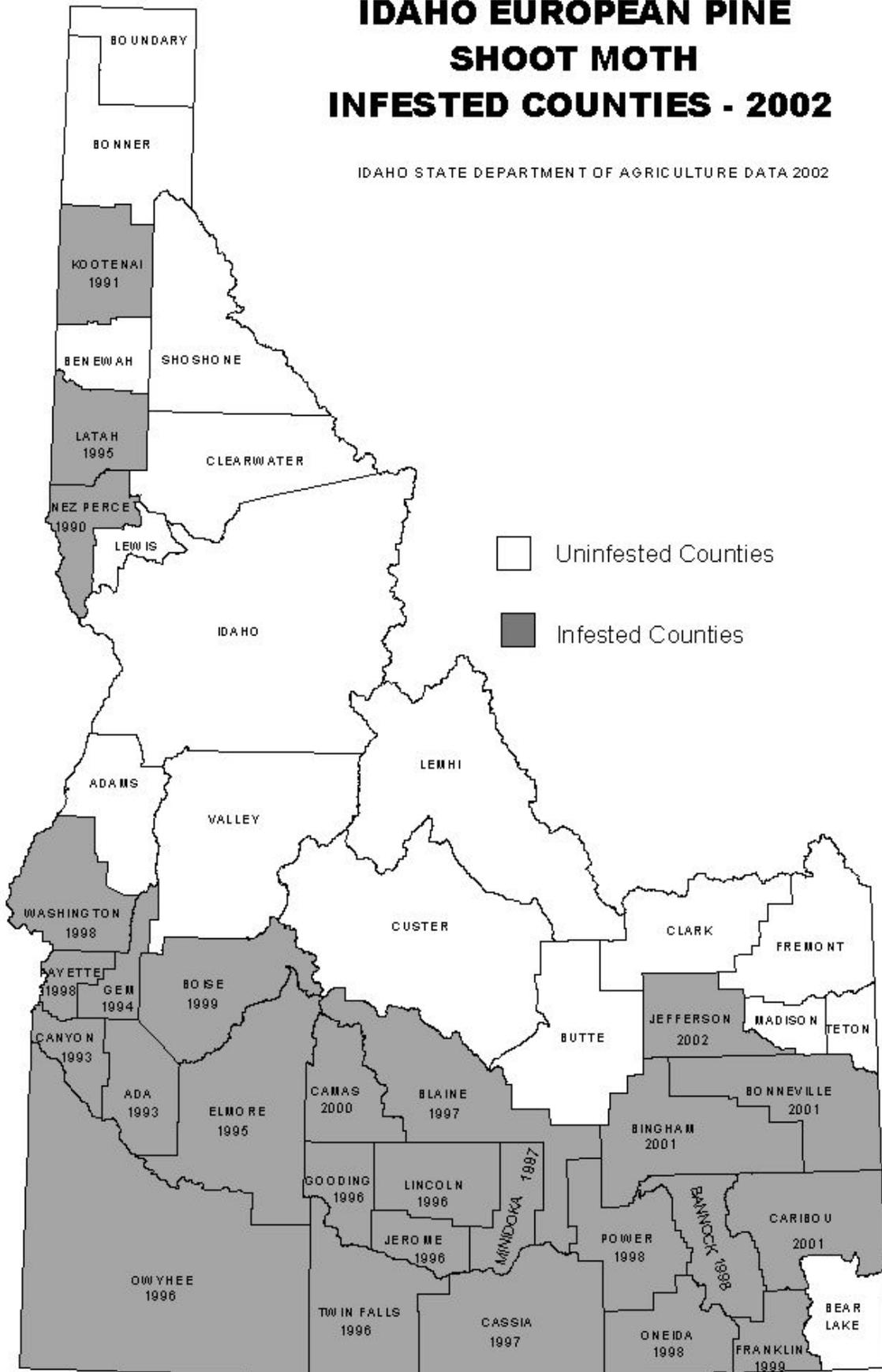
This annual report, previous years' reports, pest distribution maps, laws, rules, press releases and various forms can be found in the publications section on the ISDA World Wide Web Home Page at: [www.agri.state.id.us](http://www.agri.state.id.us).

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

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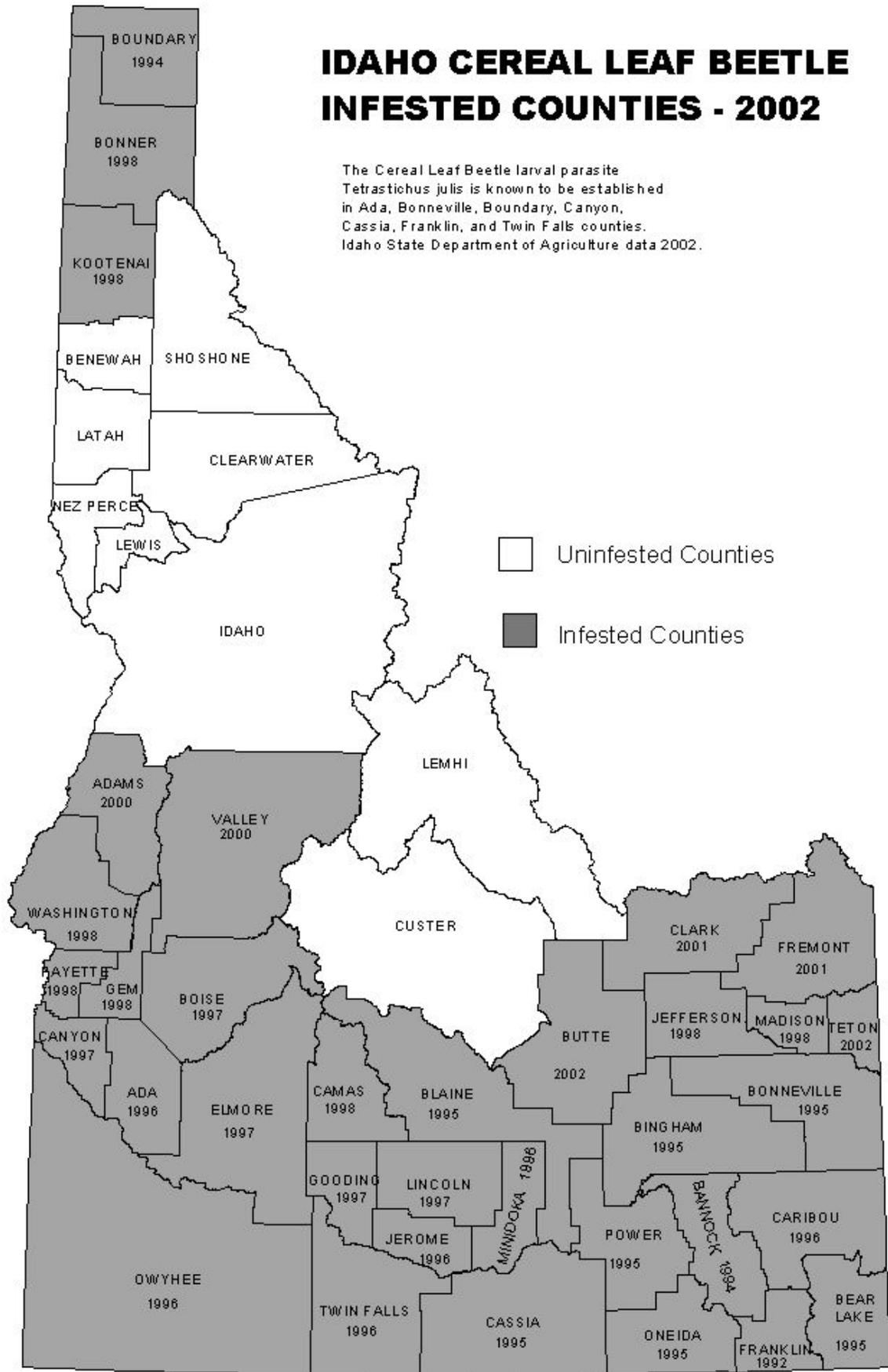
# IDAHO EUROPEAN PINE SHOOT MOTH INFESTED COUNTIES - 2002

IDAHO STATE DEPARTMENT OF AGRICULTURE DATA 2002



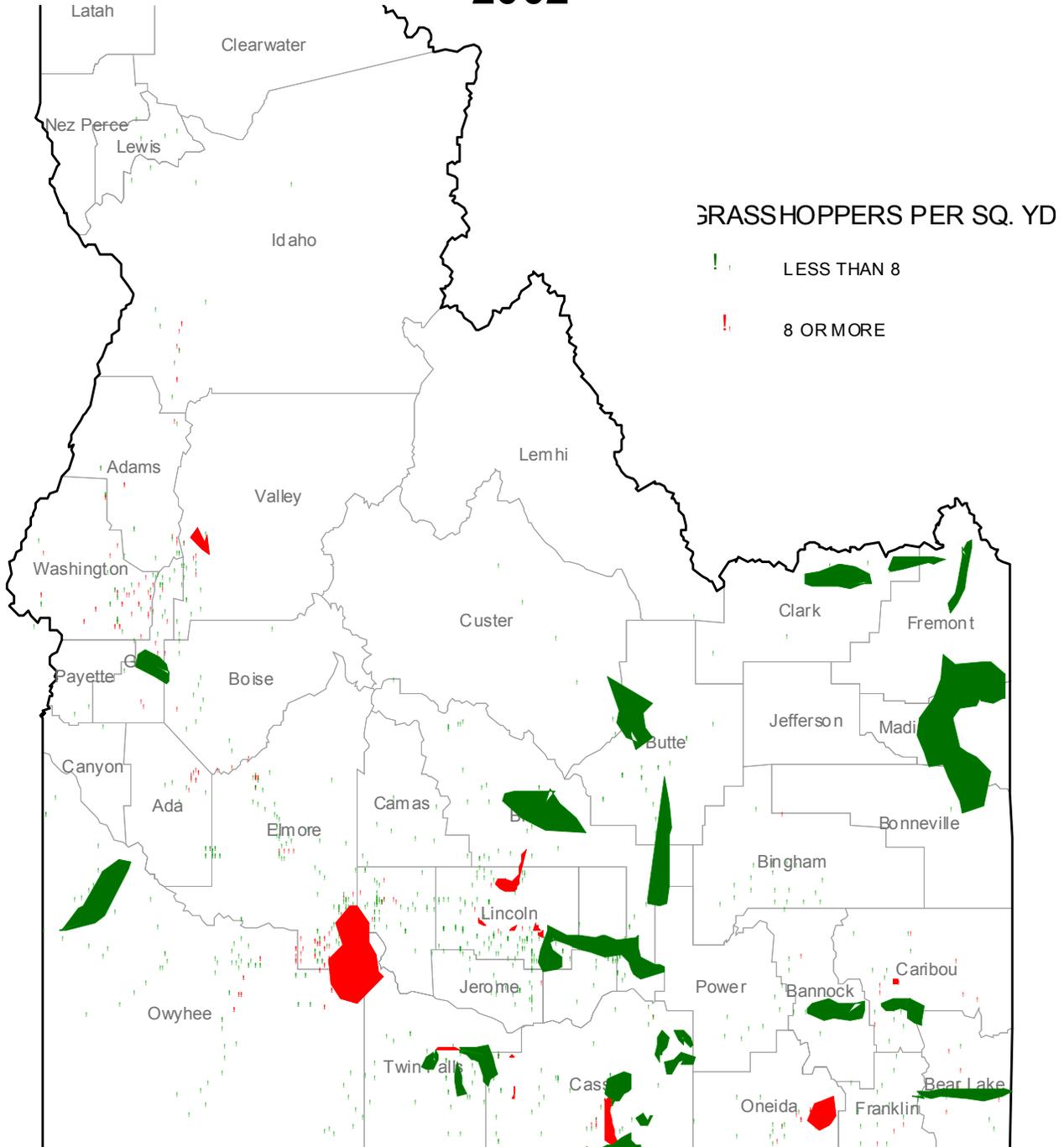
# IDAHO CEREAL LEAF BEETLE INFESTED COUNTIES - 2002

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 State Department of Agriculture data 2002.



# IDAHO GRASSHOPPER SURVEY RESULTS

## 2002



# IDAHO MORMON CRICKET SURVEY RESULTS

## 2002

