



UI Extension Trends 2005:

Agriculture and Natural Resources

Idaho the Land of Milk...and Potatoes

Over the past few years, Idaho’s agricultural sector has shifted from crops to livestock—primarily milk and dairy production.

“There’s been a seismic shift in the economy,” said UI Extension Economist Garth Taylor. The huge growth in the livestock sector has come “on the back of milk,” he said.

According to estimates in a year-end UI College and Agricultural and Life Sciences report co-written by Taylor, Ben Eborn, Wilson Gray, and Paul Patterson, the money brought in by milk production in Idaho has more than doubled since 1995. Receipts increased by 33 percent in 2004 alone, and income from milk now makes up a full 30 percent of the state’s total agricultural receipts, estimated at \$4.4 billion in 2004.

Conversely, the state’s potato receipts fell by more than \$170 million over the same period. In 1995, cash receipts from potatoes made up 20 percent of the total agricultural income of the state. At the end of 2004, that percentage was estimated to have fallen to 10 percent.

Despite a 10 percent drop in receipts from 2003, potatoes still are the biggest crop in the state, bringing in \$505 million in 2004. Barley saw a 24 percent increase in receipts in 2003 to 2004.

Taylor said Idaho’s “comparative advantage” against other dairy-producing states including California, Washington, and even Wisconsin, has allowed the state to become a huge player in the nation’s dairy industry. Factors that help give Idaho an advantage range from inexpensive, higher quality feed and water to the high desert dry weather and the “wide-open spaces” that allow producers to function with a lower capital investment per

cow. To sustain this viable economic engine for Idaho, UI will continue to help dairymen address environmental and social concerns.

The shift has created “a whole different kind of agriculture and a different type of economy,” Taylor said.

Because the state has such a wide variety of crops and products, Idaho’s overall agricultural economy can weather price fluctuations, changing consumer tastes, and other negatives better than other industries such as mining or computer chip manufacturing, Taylor said.

Idaho’s “comparative advantage”...has allowed the state to become a huge player in the nation’s dairy industry.

An individual farmer might sell out, for example, but the land most often will remain in production under a new owner, and associated businesses such as fertilizer dealers and pesticide applicators are for the most part unaffected.

Similar balancing occurs within industries, creating statewide stability, Taylor said. For example, the dairy producer might make less, but the hay producer might make more; the price of milk might go up, but the cost of cheese might go down.

Last year was the fourth straight year livestock revenues had outpaced those of crops. Before 2000, crop revenue had surpassed livestock income every year since 1979. Taylor said the recent data show a far different picture of agriculture than the general public might expect.

“Despite all the pressures, we’re bigger than ever,” he said. “We’re certainly not a dinosaur.”

• Contact Taylor at 885-7533 or gtaylor@uidaho.edu and see the entire ag report at www.ag.uidaho.edu/aers/

Estimated 2004 cash receipts from Idaho’s top agricultural products

1. Milk	\$1.33 billion
2. Cattle and calves	\$1.15 billion
3. Potatoes	\$505 million
4. Wheat	\$350 million
5. Hay	\$260 million
6. Sugarbeets	\$209 million
7. Barley	\$183 million

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Ground Water Monitoring Reduces Nitrate Levels and Improves SW Idaho Crop Yields

Sugarbeet and onion farmers in southwestern Idaho are learning that improving their delivery system can produce far-reaching benefits. But it's not the delivery of products to market, rather the delivery of water to the crops that has farmers re-evaluating their methods.

Research initially intended to improve crop quality by helping producers better manage the application of irrigation water may lead to two other important benefits—(1) a reduction in nitrate contaminants in ground water and (2) better crop yields.

Steve Reddy and colleague Jerry Neufeld, UI Extension educators from Washington and Canyon counties, applied for a critical issues grant from the University of Idaho in 2000 to address crop degradation resulting from over-irrigation. Many sugarbeet and onion growers in Washington County choose furrow irrigation—gravity flow of water siphoned from a primary ditch. The process is inexpensive, but unless monitored carefully, it also is inefficient.



UI Extension research seeks answer: Is furrow irrigation efficient in Washington County?

Reddy introduced a monitoring system to Ernie Chandler's sugarbeet field near Weiser in 2000. Soil moisture sensors placed at depths of one, two, and three feet and at two locations along an irrigated furrow were connected to a data-logger monitoring box. Information shows in the form of graphs on a small screen, indicating the penetration level of irrigation water. Without such information, growers don't know how much water is available deep in the soil profile and, therefore, have difficulty determining the most efficient and effective use of irrigation water.

Onion Yield Increases by 30 Percent

"The best management practice that we're trying to emphasize for growers is to meet the water requirements of crops more efficiently. In the past, they didn't have the tools. We found that most producers had an irrigation schedule, but not a system—schedules that were based on past experience, not on actual measurements," Reddy said.

One grower achieved a significant increase in onion production—as much as 30 percent—partly the result of electronically monitoring irrigation. "Furrow-irrigation onion growers could see increased yields of 10 percent or more," Reddy said.

At the same time, Neufeld is using irrigation monitoring to help producers in Canyon County achieve better production while using less water.

"What we are trying to do is introduce technology that gives growers more information so they can determine when to irrigate," Neufeld said. "We want to provide information to help them so they can base their irrigation decisions on the needs of the crop and the available water in the soil as opposed to some pre-set irrigation schedule.

"What we know in Canyon County is that sugarbeets are generally being over-irrigated... (This project) has been very successful in that we were able to demonstrate in the growers' fields that by using this technology we can maintain the quality and tonnage while using less water."

Improving Ground Water Quality

Perhaps even more important than improved production and limiting disease-related crop losses are the positive effects that judicious irrigation practices can have on ground water quality. Applying too much water is considered a significant factor in the rising level of nitrates in the shallow water table in Canyon and Washington counties. The Department of Environmental Quality and Department of Water Resources have detected elevated levels of nitrates in wells used for domestic water—sometimes more than twice the amount considered acceptable.

"Nitrates have been accumulating in ground water over the years, some of which is due to excessive irrigation," Reddy explains. "Nitrogen will go wherever the water goes. It doesn't bind with the soil like a lot of other nutrients, so it moves with the water. If you're percolating water down to 10 feet, you can assume that nitrogen will be there too."

Monitoring the penetration of water in the soil and limiting it to a depth that is most appropriate for the crops will help limit the loss of nutrients—including nitrogen—and make the nutrients more readily available to crops. In addition to changing irrigation practices, Reddy and Neufeld encourage growers to split nitrogen fertilizer applications between early and late growing seasons. They also encourage rotating crops and the use of cover crops that will use residual nitrogen before it leaches deeper into the soil.

"Nitrogen contamination has steadily occurred over many years, so we expect that same progression—over several years—to show results in reduced nitrogen levels," Reddy explains.

• Contact Reddy at 414-0415 or sreddy@uidaho.edu and Neufeld at 459-6003 or jerry@uidaho.edu

Studies Involving Cooperator Reveal Water Management Answers to Root Rot

When asked five years ago if he would consider participating in a new technology-based study of irrigation methods, Ernie Chandler readily agreed. The Weiser-area farmer had noticed a loss of sugarbeet productivity because of rhizoctonia (root rot). Perhaps the new monitoring system recommended by Washington County Extension Educator Steve Reddy would provide answers.

“Realistically, we were trying to get better quality, to reduce the rhizoctonia in the field before the beets could be harvested,” Chandler said. “That usually is a result of over-watering. I would have thought that we were pretty close on watering, but since the project over the last four or five years, we found that we were applying too much water, especially in the middle of the season. We went from a 24-hour set to 12-hour sets and spread the sets out in the middle of the season.”

The study was based on electronically monitoring the moisture content of soil at one, two, and three-foot levels. Two groups of three sensors were inserted into the soil along his irrigated furrows. Sensors were connected to a monitor box at the end of the row, providing visual graphs of water penetration along the furrows. Equipment was provided as part of a University of Idaho

critical issues grant. Since the initial study, Chandler has invested in four or five of his own monitoring systems.

He also discovered that sugarbeets require more of a straight line—consistent irrigation throughout the season without significant fluctua-

tions, tapering off toward the end to increase sugar levels. “I believe the yields are better and the quality is better as a result of changing the irrigation patterns,” Chandler said.

The study was expanded in 2001 to include Chandler’s onion fields, which require a different irrigation approach. Tests revealed that he tended to under-irrigate in the middle of the season and apply too much water toward the end. “With the monitors, we could see that we could actually cut watering at the end of the season.

“We want to optimize our water use to provide the greatest benefit for our crop. This (study) has definitely been beneficial,” Chandler said. While it has helped reduce sugarbeet rot, perhaps the greatest benefit won’t be realized until this summer, when water supplies are expected to be significantly reduced by a long, dry winter. “I think it (monitoring) will be even more valuable in a year like we’re going to have this year, where we have to stretch our water a little farther.”

“We want to optimize our water use to provide the greatest benefit for our crop.”



An irrigation monitor box collects water penetration data.

Chandler, who studied agriculture at the University of Idaho in the 1980s, has more than a passing interest in the effect irrigation has on nitrate movement and ground water. His domestic water supply is a 50-foot well in the Weiser Flats. Water quality tests indicate nitrate levels of 15 parts per million in his well; the commonly accepted health threshold is 10 parts per million. He is participating in a federal nitrate water quality program to identify the source of the nitrates and possible corrective actions.

While irrigation practices may account for part of the high nitrate levels in ground water, Chandler is not convinced it’s the sole source. He believes there are other significant factors. The jury still is out on how much irrigation contributes to the problem, he says.

Cow-Calf Handbook Begins 25th Year

Now into its 25th year of production, the *Cow-Calf Management Guide & Cattle Producer’s Library* is a resource used mainly by extension educators (34 percent) and producers (49 percent). Among producers about 60 percent have up to 200 beef cows, according to a recent survey. Nearly 11,000 copies of the now 937-page loose-leaf binder have been circulated since the first edition was released in November 1980.

Conceptualized by a core of western extension beef specialists, including Idaho’s J D Mankin and Ed Duren, the *Cow-Calf Handbook* has been one of the most referenced publications by livestock producers throughout the 12 western states. Since the Second Edition “yellow book” was released in October 1992, annual revisions have been mailed to hundreds of continuing subscribers.

“A wide variety of beef cattle producers use the handbook,” said Benton Glaze, UI Extension beef specialist in Twin Falls. “Full-time and part-time, large-scale and small-scale, commercial and seedstock producers all tout the usefulness of the handbook,” according to a survey of 2004 subscribers.

Sections most read among the 12 available are fact sheets on nutrition (81 percent), animal health (74 percent), and reproduction (65 percent). About 55 percent of the respondents refer to the fact sheets at least monthly and also use the entire handbook.

• See information about the *Cow-Calf Handbook* at <http://www.avs.uidaho.edu/wbrc/index.html> or by calling the UI Department of Animal and Veterinary Science at 885-6345.

ACIF Is Path to New Careers for Many Farm/Ranch Families

Life changes are a common occurrence for the hundreds of participants in one successful University of Idaho Extension program. Alternative Careers for Idaho Farmers (ACIF), which began in late 2001 and will receive renewed grant funding through mid-2006, has served more than 600 farm and ranch families.

An incredible 95 percent return from a late 2004 program evaluation survey reinforces the impact ACIF has had on people. “We develop close, personal relationships with our clients,” said Nance Ceccarelli, program director. “This population is pretty cooperative when asked to do something,” she added to explain why 570 replies were received for 599 surveys.

A significant achievement documented by the survey is that 90 percent of the completed ACIF clients are employed in the career area in which they were trained. This exceeds even the most strict standards set by the U.S. Department of Labor. The DOL has oversight responsibility for the pilot project. ACIF is funded by the U.S. Congress to the state of Idaho. The Idaho congressional delegation, with leadership from Idaho Senator Larry Craig, is the driving force ensuring that Idaho farm and ranch families are able to access and participate in career transition and retraining programs.



Nance Ceccarelli has directed the UI's ACIF program since its inception.

ACIF is officially defined as “a program for Idaho farm and ranch families who are so severely affected by low commodity prices that they must consider other careers or adopt cost-saving agricultural practices.”

Funds are allocated to qualified applicants for training in new vocations, to resume postponed education, and to support on-the-job guidance in off-farm employment. Incumbent farmers may receive assistance to attend classes and workshops, to implement new technology, and to develop more competitive and economically sustainable strategies for existing farm and ranch enterprises.

ACIF has staff in Moscow, a full-time program coordinator, Brad Jahn in Boise, and has recently added positions in American Falls and Twin Falls. ACIF spends about 15 percent of all funds on five positions—mostly part-time—and program administration. Therefore, 85 percent of all funds go directly to client support.

The original team contacted more than 150 individuals who had expressed interest even before the program began. The team qualified applicants, worked with clients to create personal development plans, and provided assistance almost immediately to more than 120 participants on the initial list.



Fresh egg concession is self-serve in Amy McBryde's neighborhood.

Academy Classes Lead to Poultry Business and Head Teaching Position

One ACIF “graduate” is Amy McBryde of rural Valley County. She participated in the Lost River Grazing Academy using ACIF assistance after “I had moved back to the family ranch and saw that there were many options available, if I just knew what to do.”

McBryde attended academy classes taught by Chad Cheyney and Jim Hawkins, UI Extension educators, at the UI Research, Extension and Education Center at Salmon. She learned about managing both the natural and economic resources of a grazing enterprise. When Amy applied that knowledge to her own operation, she concluded that “I can make more money raising chickens in eight weeks than off of raising beef in two years.”

Her neighbor transports eggs and meat chickens, sometimes on a snowmobile over impassable roads, to a store on the highway. McBryde also sells poultry products “out on the road ‘self serve’ style, out of a cooler under a ‘fresh eggs’ sign. Everyone leaves their money in a can—very honest. I can't keep up with the demand.”

ACIF also paid for books and testing so McBryde could complete her teaching credentials. Now she is head teacher in a two-room school in the high mountain valley, which is more than an hour's drive south and west of Cascade. Ola Elementary is the same school where her mother was head teacher 20 years ago. “I never would have dreamed I'd be there.”

Ceccarelli said, over time, “a few staffing changes have occurred. The current team works regularly with 160 to 200 active individuals. From day one, the ACIF program encourages a ‘peer’ relationship among clients that helps them make their career transitions.”

• Learn more about ACIF at <http://acif.ag.uidaho.edu>, or contact program headquarters at 885-9707 or acif@uidaho.edu

ACIF Introduces Incumbent to Precision Farming

Robert Blair, an incumbent client who farms with his mother (and managing partner) near Kendrick, took farm business management classes from Boise State University at Lewis-Clark State College. Robert also is involved in a self-directed precision agriculture project taught through the College of Southern Idaho (CSI) with support from UI Extension educators, chemical companies, and farm machinery businesses. The fourth generation farmer grows alfalfa “using technology to enhance conventional farming and traditional thinking.”

“using technology to enhance conventional farming and traditional thinking.”

“His precision ag training applies to the more than 4,000 acres of crops in a multi-million dollar family farm business,” said Nance Ceccarelli, ACIF director.

The precision ag project involves mapping fields and breaking acreage into management zones based on precise measurements of soil temperature and moisture, rainfall, and evaporation rates. Data are collected to track chemical and seed application rates, and to monitor crop production in the various zones.

Farm efficiency is improved when the information is used to adjust fertilizer or chemical application rates, to adjust seeding depth and rate, or—on irrigated farms—to manage water application rates that are specifically suited to micro-site conditions within the fields. The data collected and tools used reduce “human error” and “pinpoint management to each specific plant.”

Blair’s ACIF-supported research is a considerable investment to advance “green seeker” technology that has reduced input costs on his farm and may lead to the adoption of modern farming practices for many others. Blair emphasized the value of ACIF explaining, “I could not do this under normal circumstances.”

The father of two is trying to sustain his farm and “give my kids the same opportunity my father gave to me—a running start when they are able to make that decision” (about whether to stay on the farm).



The daughters of Rusty and Sheryll Sharp learn the “work” part of farming at an early age.

Persistence Pays for Early ACIF Applicants

“It’s wonderful not to have to live in the city,” said Sheryll Sharp, who with her husband were among the earliest successful ACIF beneficiaries. The rural Filer couple received financial help—Sheryll to attend classes offered by Idaho State University at College of Southern Idaho (CSI) and her husband Rusty to earn a commercial truck driving license in order to haul agricultural products. The education led to supplemental incomes that permitted the Sharps to stay on the farm.

The financial support was one thing; the continual encouragement from ACIF staff was another, said Sheryll, who heard about ACIF in its infancy and “kept writing” to Paul McCawley, associate director of UI Extension, before ACIF staffing was in place. Sheryll parlayed an education degree earned over five semesters into afternoon kindergarten and after-school teaching jobs for 15 children in Kimberly. Rusty now hauls compost, sugarbeets, and other farm products for several clients while continuing to farm.

The Sharps rear their three children, all younger than age 10, while growing corn, barley, hay, and beans for seed on about 300 acres and raising 100 feeder cattle. They are fourth generation farmers and ranchers.

Top 10 Selling Publications and Videos, 2004

1. Idaho’s Noxious Weeds (BUL 816, includes control guide, \$5)
 2. Herbicide-Resistant Weeds and Their Management (PNW 437, \$2)
 3. Eurasian Watermilfoil (CIS 1108, \$1)
 4. Pesticide Safety: Worker Protection II (video) (#846, \$35)
 5. Rural Idaho at a Glance (CIS 1114, \$2)
 6. Sampling Procedures to Diagnose Nematode Infestations (CIS 1056, \$1)
 7. Care and Maintenance of Your Home Septic System (CIS 1027, \$1)
 8. Idaho Master Gardener Handbook (\$50)
 9. Potato Production Systems (Soft-bound: \$89.95 + \$7 in the U.S.; Hard-bound: \$109.95 + \$7 in the U.S.)
 10. Grandparents: Raising Our Children’s Children (BUL 823, \$5)
- Order online at <http://info.ag.uidaho.edu/catalog/catalog.html> or call 885-7982, or email calcpubs@uidaho.edu

Growing Master Gardeners for Nearly 30 Years in 32 Idaho Counties

First sown in 1976, the Idaho Master Gardener program has blossomed in 32 of Idaho's 44 counties. It has trained 2,000-plus green-thumbed volunteers, more than 775 of whom are currently active. With their research-based knowledge of water conservation, composting, plant development, and environmentally astute insect, weed, and plant-disease control, they donate 13,640 hours (worth an estimated \$208,000) of volunteer time each year.

When they're not responding to homeowners' queries or operating plant clinics, Idaho's Master Gardeners are installing public landscapes, organizing community gardens, or delivering instruction to garden-center and garden-club audiences and even to children. How's that for a bountiful harvest?

Master Gardeners receive a minimum of 30 hours of classroom training in exchange for at least 30 hours of volunteer time. Some counties require up to 82 hours of training and 60 hours of volunteerism.

In eight south-central Idaho counties, the hours contributed by Master Gardeners add up to a three-quarter time employee, says UI Extension Educator JoAnn Robbins. "I couldn't begin to do my job without them."

Robbins asks her Master Gardeners to focus on education. "I want them to be teaching someone something—or at the very least to be learning something themselves."

Organized a Garden Tour

When Julie Merrick of Shoshone signed up for the Master Gardener program, she chose as her volunteer project organizing a garden tour for her Lincoln County town. She persuaded 12 residents to open their gardens to a public tour, but she added an important twist: each garden highlighted specific horticultural concepts—perhaps grape pruning, vegetable production, or growing annual flowers from seed—and Merrick developed handouts for each one.

"If you train more people in the Master Gardener program,



Ada County Master Gardener program assistant Lenise Heath and LaVar Grover, advanced MG'er, prune roses.

then you have more local resources—people who can help each other," Merrick says.

In northern Idaho's St. Maries, Sharon Jensen is one of nearly two-dozen Benewah County Master Gardeners who come to the assistance of local seniors. "We have a number of older folks in our community who are struggling with some things in their gardens that they are no longer able to go out and do," Jensen says.

"We get a group together and we really work magic with whatever task the elderly person wants done. It gives a lot of satisfaction to everyone concerned—and it just pulls at my heart strings." When the project is pruning a neglected fruit orchard, it also provides unusual opportunities for learning.

Women's Prison Inmates Plant a Garden

At the South Boise Women's Correctional Center, Advanced Master Gardener Claude O'Tyson leads a three-year-old program in gardening education. In spring 2004, he and a half-dozen other Advanced Master Gardeners from Ada County taught 30 of the facility's 130 women the principles of gardening, then guided the women's efforts in the prison's garden and landscape.

"Growing vegetables, fruit, landscape plants, or anything at all exposes us to one of the awesome joys of nature," says O'Tyson. "It provides a positive influence that blends people who garden together into a family."

New Publications, Videos in 2004

The following are new publications and videos prepared by scientists in the UI College of Agricultural and Life Sciences. You can order copies online at <http://info.ag.uidaho.edu/catalog/catalog.html> or call 885-7982, or email calspubs@uidaho.edu

Publications—Family

Credit Cents: Making Sense of Credit and Debt, BUL 841, online only

Grandparents Raising Grandchildren (English) brochures, as a set of 11, \$11, or \$1 each, [(S) Spanish, set of six, \$5, or \$1 each]:

Childcare Issues (S)
Choosing a Parenting Style
Communication Is Important (S)
Emotional Ups & Downs (S)
Helping Grandchildren Do Well in School (S)
Neglect and Abuse (S)
No More Fights About Food
Setting Limits
Teaching Money Skills
The Teenage Years!
Time for You Is Important (S)

UI Dairy Classes Presented to 260 Hispanics—in Their Own Language!

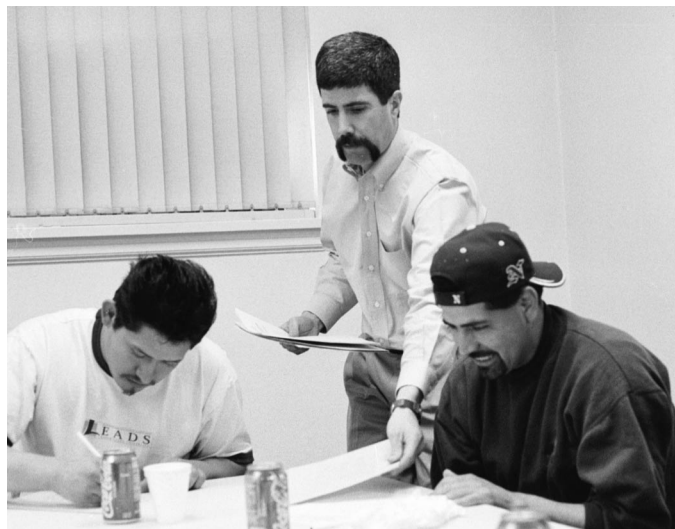
On Idaho dairies, 9 of 10 workers are Hispanic but dairy owners and managers typically speak little Spanish. Rather than explaining what their workers should do, the English-speaking owners or managers roll up their sleeves and show them. But that's not enough. "Employees need to learn in their native language so they can ask questions in their native language," says Joe Dalton, UI Extension dairy specialist in Caldwell. "While you can watch someone do it, there is a reason why a cow is pre-dipped, then stripped, then dried. If you don't understand why, you're missing something."

That's why UI Extension dairy specialists and county extension educators have developed Spanish-language milking schools and delivered 14 of them to 260 Hispanic dairy workers since 2001. In 2004 alone, they conducted five in-classroom schools—in Caldwell, Twin Falls, and Firth—and nine on-farm trainings, reaching about 150 participants. A pre- and post-test administered to a sample of 43 students in 2004 found that the average score improved from 55.3 to 82.6 percent.

"When you train workers, the dairy sees a direct benefit."

"They ask us many, many questions. They have questions all of the time because they can't communicate and neither can the owner," says Dalton.

UI Extension Dairy Specialist Mireille Chahine, based in Twin Falls, held four of the milkers' schools in southcentral and eastern Idaho and delivered on-site trainings to 60 workers. Her instruction—like that of Dalton and UI Extension Educator Scott Jensen—goes well beyond how one attaches a milking machine. She discusses udder anatomy, mastitis, antibiotic residue prevention, and even the



Joe Dalton believes effective learning occurs when UI Extension courses are taught in the students' native language.

role of the dairy industry in Idaho's economy. Throughout the training, Chahine explains the effects that milkers themselves can have on milk letdown, milk quality, and food safety.

In follow-ups with two dairies, Chahine found that the milkers' increased knowledge of proper milking procedures and milk quality decreased the incidence of subclinical and clinical mastitis and improved the dairies' bottom line. "When you train workers, the dairy sees a direct benefit," she says.

Before long, the UI Extension dairy group will add other classes to its Hispanic-worker training: artificial insemination, calf-rearing, and managing dairy cattle for beef production. "All of the employees that come want to know if the UI is going to offer more programs in Spanish," says Dalton. "That is a common question. We don't want to ignore the fastest-growing population in Idaho."

Delivering dairy workshops in Spanish "provides a lot of satisfaction for the people who go through the training and for the people who give the training," says Chahine. "When there is a need for education, then it is the job of UI Extension to fill it."

• Contact Dalton at 454-7633 or jdalton@uidaho.edu, Chahine at 736-3609 or mchahine@uidaho.edu, or Jensen at 896-4104 or scottj@uidaho.edu

Publications—Miscellaneous

Guide to Building County Input-Output Models, BUL 835, \$2

Tree Growth, Forest Management, and Their Implications for Wood Quality, PNW 576, \$2.50, also online

Watering Home Lawns and Landscapes, CIS 1098, \$2.50

Publications—Agriculture

Growing Kiwifruit, PNW 507, \$3.50, also online

Idaho Crop Profiles: Dry Beans, CIS 1092, \$3

Jointed Goatgrass Introduction, EB 1931, free, also online

Management Strategies for Preventing Herbicide-Resistant Grass Weeds in Clearfield Wheat Systems, PNW 572, \$2, also online

Nutrients Plants Require for Growth, CIS 1124, online only

Plantback Restrictions for Herbicides Used in the Dryland Wheat Production Areas of the Pacific Northwest, PNW 571, \$4, also online

Southern Idaho Dryland Winter Wheat Production Guide, BUL 827, free

Southern Idaho Fertilizer Guide: Irrigated Alfalfa Seed, CIS 1116, online only

Publications—Agriculture (Potatoes)

Nutrient Management Guidelines for Russet Burbank Potatoes, BUL 840, \$2.50, also online

Organic and Alternative Methods for Potato Sprout Control in Storage, CIS 1120, \$3, also online

continued page 8

Bluegrass Research Comes into Its Own

The search continues at the University of Idaho for a viable alternative to the practice of burning Kentucky bluegrass post-harvest residue. That effort was given a big push with the hiring of John Holman and the creation of a program dedicated solely to the issue.

Holman, who works in the plant science division of the University of Idaho Department of Plant, Soil and Entomological Sciences, partners with Donn Thill's program, professor of weed science. Holman was hired in 2002 with the help of a \$100,000 grant to the UI from the Idaho Department of Agriculture.

Holman has developed a Web site (<http://www.ag.uidaho.edu/bluegrass/agweb.ag.uidaho.edu/bluegrass/index.asp>), listserv, extension publications, and field days to help spread the word about the latest research on the topic.

The online site, which includes a database that allows users to access more than 200 publications on all aspects of Kentucky bluegrass, won the American Society of Agronomy Educators Certificate of Excellence at the group's meeting last fall in Seattle. It was developed with the help of Don Pierce, Chrissie Hardy, and Todd Young of UI's Educational Communications.

Field Days and Publications

Holman also has focused on developing field days for growers. Two UI Extension publications related to bluegrass production will be released in 2005, on how agronomic practices are influenced by bluegrass residue management and on the effect of residue management on bluegrass physiology and seed production.

Holman and Thill said that nearly every department in the UI College of Agricultural and Life Sciences is involved in bluegrass research.

A field day is planned for June 2 at the Chris Ramsey farm in Kootenai County. Another is set for June 9 at Hatter Creek Ranch near Potlatch. This will be the third year of research at the Potlatch farm, where the study involves using cattle to graze the residue, and the fourth year at the Ramsey farm evaluating reduced burn production.

"You have to do these things long term," Thill said.

The research plots for the bluegrass research are much larger than a typical plot, Thill and Holman said, a necessity for getting accurate and usable information.

The research is done with "growers' equipment at a growers' scale," Thill said. "These growers we work with are great partners and help ensure our research will be feasible for the producer to implement," Holman added.

Field burning was phased out in Washington at the end of the 1990s. In Idaho, growers' ability to burn rests with the Idaho Department of Agriculture. The policy in Idaho is that field burning will be allowed until an economically equal alternative is found.

"We're being given time to develop alternative practices," Thill said, noting there are plenty of good reasons, including



UI's bluegrass research looks for alternatives to controversial field burning.

erosion control, to keep bluegrass in production. "The idea is to find a balance between smoke management and the need to remove that residue."

About 90 percent of the nation's grass seed is grown in the Pacific Northwest.

Holman and Thill say including growers in the research program is vital to its success. From the one-on-one interaction with the growers on the research plots, to comments gathered from online, growers are absolutely key to the program.

"It's truly a partnership with these people," Thill said. "They know they're going to have to do things differently."

• Contact Holman at 885-5041 or jholman@uidaho.edu and Thill at 885-6214 or dthill@uidaho.edu

New Publications, Videos *continued from page 7*

Potato Production with Limited Water Supply, CIS 1122, \$2, also online

Storage Management for Gem Russet Potatoes, CIS 1118, \$3, also online

Storage Management for Summit Russet Potatoes, CIS 1123, \$2.50, also online

Vine Kill and Long-term Storage of Ranger Russet Potatoes, CIS 1119, \$3, also online

Videos

Bug Bombs: Aerial Application of Flea Beetles to Manage Leafy Spurge, #919, \$25

Dollar Decisions, #922, \$25

Meadowlark Farm: A Case Study of a Small-Acreage Farm, #IV-929, \$25

Riley Creek Blueberry Farm, #917, \$25



For more information on UI Extension programs, call 885.5883 or access our web site at www.uidaho.edu/extension