

Changes Accelerate in the 1960s

For generations of thrifty, hard-working farmers, freedom from debt was a goal to be kept in mind at all times. In a perilous world, farmers placed a high value on security — and for them security meant money in the bank, owning a good farm free and clear, and being certain they would never again need to worry about mortgage payments or notes coming due. Undoubtedly, the traditional dream concerning a debt-free existence persisted in the 1960s. Farm families could try to attain this happy state of affairs, but the economic trends of the times were moving agriculture in an entirely different direction. For most agricultural producers of the 1960s, economic security as a practical matter had to be viewed in terms of managing enterprises for maximum profitability, having a satisfactory cash-flow situation, and maintaining a manageable debt-asset ratio.

Following World War II, farm debt grew in this country. To take advantage of new technologies, farmers purchased new machinery and acquired additional acreage. They increased the size of their operations at a time when the prices of land, machinery, and other inputs were accelerating. By necessity, farmers had to finance their farming operations with large amounts of credit — and their credit needs increased year after year.

Traditionally, land and labor were the major inputs in farming operations. Borrowed capital increased in importance after farmers became large-scale purchasers of tractor fuel, agricultural chemicals, specialized equipment, and other standbys of modern-day agriculture. From 1944 to the mid-1960s, there was a three-fold increase in the amount of farm assets a farmer needed to have in order to produce \$1 of net farm income. Here are the figures for that period:

1944	–	\$4.73 in assets needed to produce \$1 net income
1954	–	\$8.26
1963	–	\$14.13
1967	–	\$16.00

Like other business entrepreneurs, farmers must spend money in order to make money. Since World War II, farmers have had to make increasingly large investment outlays in order to maintain their net incomes. This can be

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seen by computing cash expenditures as a percentage of cash farm income. These are the percentages for the 1944-1967 period:

1944 51 percent

1954 68 percent

1963 79 percent

1967 80 percent

Farmers Must Have Management Skills

Agricultural technology continued to advance in the 1960s. Whether measured on a per-acre or per-worker basis, agricultural productivity reached new highs. At the same time, the use of purchased capital per farm, per acre, or per farm worker also followed an upward trend. To participate fully in the modern, highly productive, capital-intensive agricultural system of the 1960s, farmers often had to assume large debt loads. Mastery of financial management techniques could become very important in these circumstances. In fact, to successfully manage a farm in the 1960s, a farmer needed a top-notch business executive's skills in cost accounting, decision-making, and all-around administration.

The UI College of Agriculture had among its clientele farmers who were extremely knowledgeable — even sophisticated. They asked searching questions and wanted answers that clearly spelled out bottom-line, dollars-and-cents implications. In the changing agricultural scene of the 1960s, the partnership between the state's farmers and the College of Agriculture entered a new phase. The personnel of the college were, to an increasing extent, serving as consultants and information resources to farmers who already possessed a great deal of specialized, technological information — and who were eager to gain more knowledge.

The Idaho Farm of the 1960s

Idaho farms in 1960 were more mechanized than ever before. Between 1954 and 1959, the number of tractors increased by 35 percent, field forage harvesters by 50 percent, and pick-up balers by 100 percent. One out of every three farms had combines and balers.

C. O. Youngstrom, associate director of the UI Agricultural Extension Service, said the 1959 census showed Idaho farms had an average value of \$48,000. In 1949, the average value had been \$31,600. It was \$22,400 in 1939 and only \$7,700 in 1920.

The average Idaho farm included 457 acres in 1959. This was one-fifth larger than in 1954 and two and one-half times the average acreage in 1920. The average farm in 1954 had 184 acres of cropland.

Charles G. Painter, UI Extension soils specialist, said Idaho farmers invested \$11 million in fertilizers in 1959 and got an average return of \$3 for every \$1 invested. Returns would have been considerably higher if soil testing had been more generally used as the basis for fertilizer programs, Painter said.

**Extension
Agents Are
Troubleshooters**

While conducting educational programs around the state, UI Extension Service agents and specialists often were asked to deal with perplexing problems and difficult situations. At that point, the UI educators became troubleshooters. The problem that Extension agents of eastern Idaho were confronted with in 1967 was the malting barley trade's immediate need for more barley. Drought had reduced barley yields in many barley-producing regions, and malting barley brokers and shippers



UI entomologist William F. Barr inspects a tray of long-horned beetles.

Historical Photograph Collection, UI Library, 2-219-2

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asked the University of Idaho to locate suitable lots of barley of acceptable malting quality.

Extension agents in Madison, Fremont, Teton, Jefferson, and Bonneville counties contacted farmers and located 500,000 bushels of malting barley that had been grown for other purposes. By selling their grain to malting barley brokers, the growers earned premiums of \$8 to \$15 per ton. Howard Roylance, Extension agronomist, worked with the agents to organize an information program concerning procedures farmers should follow to grow malting barley. Growers were invited to special barley schools. The next year, growers in the area produced two million bushels of malting barley.

Improving Idaho's Beef Cattle

Cattlemen were invited to participate in a beef cattle improvement program sponsored by the UI Extension Service. The program began in 1960 with one herd involved. By 1969, more than 200 herds from all areas of the state were enrolled. By keeping production records, cattlemen were able to identify the genetically superior animals within their herds. Computerized processing of records was available. Morris Hemstrom, Extension livestock specialist, said: "The beef cattle improvement program will have a marked impact on the economy of the beef industry. This program offers cattlemen the most practical method of increasing returns without increasing investment."

To help potato growers learn how different varieties of potatoes performed in their areas, a program of off-station testing was initiated by Richard Ohms, Extension potato specialist. In each of the major production areas of southern Idaho, new potato varieties were grown in demonstration plots on the farms of cooperating growers. The varieties tested under actual grower conditions in these demonstrations during the 1960s included Early Gem, Russet Burbank, Norgold, and Shoshoni.

Wheat growers in northern Idaho changed their seeding dates in order to control soil-borne diseases. Harry Fenwick, Extension plant pathologist, encouraged them to change after he completed an area-wide study which showed that cereal crops planted in early autumn had a high incidence of disease. Fenwick reported in 1969: "Approximately 90 percent of the wheat growers in northern Idaho are seeding three to five weeks later than they were in 1956 and 1957, with a subsequent reduction in the soil-borne diseases."

A statewide mastitis control program, beginning in 1962, improved the health of dairy cattle and reduced dairy producers' economic losses from unmarketable milk. George Cleveland, Extension dairyman, held training

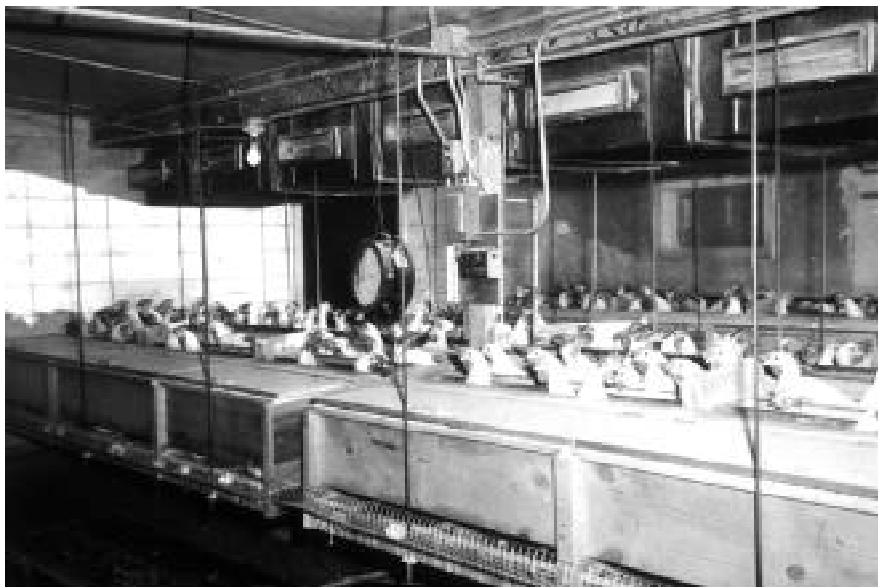
workshops throughout the state for Extension agents, equipment dealers, processor fieldmen, and veterinarians. “A lot of people worked together on this project started by the Extension Service. The loss in milk has been reduced 82 percent by good mastitis management practices,” Cleveland said in 1969.

In southeastern Idaho, cattlemen cooperated in constructing nine dipping installations at convenient locations. Twenty thousand head of beef cattle were treated annually at the dipping vats. Ed Duren, Extension area livestock specialist, originated the project in order to provide convenient, economical control of livestock insect pests. “Relatively pest-free cattle develop long hair coats, maintain a good body condition, and utilize feed more efficiently,” Duren said.

Explaining Skills of Farm Management

To obtain pointers on the use of sound management practices, farmers could contact Virgil Kennedy, Extension farm management specialist. Kennedy regularly conducted training sessions for farmers and county agents. After learning how to analyze costs and returns of a farm enterprise, farmers and agents gained experience in predict-

ing the economic consequences that would follow if changes were made in the ways resources were used.



UI's solar poultry pen, 1966.

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The banning of DDT as an agricultural chemical brought about a reappraisal of insect control strategies. Roland Portman, Extension entomologist, worked with county agents in testing various insecticides. C. H. Stranahan, Kootenai County agricultural agent, cooperated with Portman in comparing a number of chemicals used to control soil webworms in bluegrass fields.

To help forest trees get a better start in life, UI agricultural engineer Walter L. Moden, Jr., developed a new system of transplanting tree seedlings. He used tubes of soil. Seedlings grown from seed in a soil tube were more likely to survive the shock of transplanting than were bare root seedlings, Moden said.

Appraising Women's Special Needs

The time had come to meet the special educational needs of women in today's society, said Mrs. Howard Hechtner of Lapwai, president of the Idaho Home Demonstration Council. She told the Council's 1963 annual meeting:

“Today the most common pattern of a woman's life is that a girl completes her education, works for a few years (or marries immediately) and then devotes her time to raising her family. Then, sometime in her forties perhaps, she sees she has a second lifetime ahead of her. This has tremendous implications for the continuing education of women. We need more and better programs to enable women to resume their education at a time when they are no longer needed full time at home.”

Hilda Frederick, Extension home management specialist, saw employment opportunities for women increasing in education, health care, and social services. “We will likely see greater use of sub-professional aides in these fields. In health care, the work force will expand greatly. Hospitals, clinics and health centers will use sub-professional aides to a far greater degree than they do today. With proper training, many young and middle-aged women might find work.”

Home economics and 4-H programs of the UI Extension Service involved thousands of women and young people. Membership in 4-H exceeded the 20,000-mark in the 1960s. More than 4,000 volunteer leaders helped 4-H members with their projects. About 20,000 women were active in educational programs organized by UI Extension home economists.

Marion Hepworth, Extension state home demonstration leader from 1924 to 1951, played a leading role in organizing the Idaho Home Demonstration Council in 1950. Seventeen years later, the Council was thriving, with a total

membership of 13,000. The organization approved a change in name — to Idaho Extension Home Demonstration Council. At its 1967 convention, the Council held five seminars — on family life, citizenship and civil defense, health, international relations, and safety. Mrs. J. E. Shepherd of Eagle served as president.

Tiny Insects Attack Skeleton Weed

To stop the spread of skeleton weed on Idaho rangeland, UI scientists imported thousands of tiny insects called skeleton weed midges. Most of the midges were released in canyons of the Payette River. “The steep terrain in the canyons makes chemical control of skeleton weed dangerous and expensive,” said William Barr, UI professor of entomology. He said a rust disease that attacks skeleton weed would be released also and the two biological controls should work well in tandem.

UI plant pathologists L. L. Dean and L. LaFerriere helped the state’s bean seed industry organize a strict control program to check infestations of halo blight. Laboratory techniques for quick, positive identification of the halo blight pathogen were developed by another UI plant pathologist, James W. Guthrie. The disease was detected in many bean fields in 1963, 1964, and 1965, causing seed producers great anxiety. By 1968, halo blight was under



Karl H. W. Klages
Historical Photograph Collection, UI Library, 3-1790a

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control and Idaho's bean seed industry had reestablished its worldwide reputation for being an excellent source of disease-free bean seed. Fields that were found to be infected with halo blight were plowed under. Growers contributed to a fund used to partially recompense farmers for the destruction of infested bean crops. Extension agent Wilmer G. Priest helped growers organize their halo blight compensation fund.

UI Emphasizes Food Processing

Courses in food processing and food chemistry were included in a new food science curriculum offered by the UI College of Agriculture. Don A. Marshall, associate dean of the college, said the new curriculum would help students prepare for a variety of career opportunities in the food industry. The program, initiated in 1965, was directed by a five-man faculty committee under the chairmanship of John L. Barnhart, dairy scientist. Other members were bacteriologist Guy R. Anderson, animal scientist Leon E. Orme, poultry scientist Charles F. Petersen, and biochemist Paul Muneta.

When shopping for groceries, consumers should not have to choose between good nutrition and convenience, said Mary V. Zaehring, head of the UI Department of Home Economics Research. She said that processing methods should be improved in order to preserve the nutrients in food products. Processors should fortify processed foods, replacing vitamins or other nutrients lost during processing, Zaehring emphasized. She said processors perform a good service by adding ascorbic acid (vitamin C) to canned juices.

Construction of a \$475,000 UI Dairy Science Center was completed in 1964. Located about a mile north of the campus, the center included modern facilities for the UI dairy operation plus classrooms and research laboratories. "We have done research work in many areas of dairying but we've always been limited by our facilities. We will be able to undertake many more phases of dairy research in the new center," said Richard H. Ross, head of the Department of Dairy Science.

A. Larry Branen, a junior in the College of Agriculture, was awarded a \$500 scholarship by the Pacific Dairy and Poultry Association in 1966. Richard H. Ross, UI dairy scientist, said Branen competed for the award with top students in the western United States and western Canada. Branen's home was in Wilder. He later became dean of the College of Agriculture.

**4-H Program
Benefits
Youth**

Idaho 4-H girls were participating in a new type of clothing style review. Instead of modeling their garments before adult judges, the girls were joining other contestants in a self-evaluation exercise. Esther Nystrom, Extension clothing specialist, said the new approach made the dress review competition more educational. “People grow most when they have a maximum of self-evaluation.”

Looking back on nine years of participation in 4-H, Thelma Anderson in 1962 said she had taken 16 projects and “my projects have really helped me grow up.” The Jefferson County 4-H’er added:

“The most gratifying experience I’ve had in 4-H was when my family was host to a Venezuelan exchange student, Luis Icarri. He stayed with us two weeks. One of the worst experiences I had while in 4-H was at 4-H camp when I was about 12 or 13. Some of the girls in my cabin had been fighting, and finally I asked them if they hadn’t anything better to do. Well, I about started another American Revolution — and I was the British! They yelled at me until I left the cabin in a hurry. I was ready to leave camp and go home. I sat outside on the steps and cried and felt sorry for myself until Maurice Johnson, our county agent then, came by. He talked to me for a while and then asked me if running away was the 4-H way to solve a problem? Didn’t it mean anything to me to be in 4-H? Then he said, ‘Just remember, Thelma, 4-H doesn’t force you to do anything. It just opens up doors to opportunities, and you have to decide if it’s worthwhile to look behind those doors.’ Well, I have stayed in 4-H nine years. Do you think 4-H has meant anything to me?”

Floyd W. Frank, University of Idaho research veterinarian, was appointed head of the Department of Veterinary Science in 1967. For the previous 12 years he had been veterinarian-in-charge at the Caldwell Veterinary Research Laboratory. He had conducted research on ovine vibriosis, tularemia of sheep, ovine viral abortion, and other animal health problems. He succeeded Lloyd H. Scrivner as department head.

In 1966 Grant Hall, Extension agent in Canyon County was appointed a district agent with headquarters in Boise. He succeeded James L. Graves, who had moved to Moscow to become supervisor of agents in northern Idaho. The UI Extension Service had two other district agents — Tom J. Chester in Pocatello and L. M. Williams in Boise.

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**Viewing
Potato Research
Needs**

Idaho's potato research program should be strengthened, Dean James E. Kraus said in 1967. Additional personnel and resources were needed for the Extension educational program serving the potato industry, Kraus said. He presented this review of UI contributions to potato research:

"The first actual fund appropriated for potato research was made by the Idaho legislature in 1941. The amount was \$20,000 for a two-year period. I was the first scientist to be employed to conduct that program and was the only one working on it for a period of about four years.

"The funds were increased over the years to include programs in potato production, potato diseases, nematode control, irrigation, fertilizers, potato breeding, establishment of a foundation seed program, potato storage, market and potato quality, economics of marketing, production and regional competition, insect control, and others.

"While many of these programs have been supported only in a modest way financially, they have been supported sufficiently to have paid off manifold. Over these 25 years, we have had excellent support financially and otherwise by the growers, by the Potato and Onion Commission, by the Potato Processors



Agricultural engineering students record snowfall measurements for erosion study.

Historical Photograph Collection, UI Library, I 903-9

Association, by the Growers and Shippers Association, and by the USDA.”

Kraus listed these major research accomplishments:

- “We developed for the first time the basic concept of what causes the formation of knobs on Russet potato tubers and what causes malformed tubers.”
- “With the assistance of the growers in Bingham and Power counties, we essentially solved the problem of stem nematodes which for a while threatened the whole industry.”
- “Under the leadership of Dr. John McLean, for the first time methods were developed whereby actual crosses could be made between the Russet Burbank variety and other potato varieties. This is the foundation of our current breeding program at Aberdeen.”
- “Research done by Walter Sparks at Aberdeen has revolutionized the concepts of temperature, air movement, and other factors as related to potato storage.”
- “Basic work is being done by Dr. Guy Bishop on leaf roll in potato seed.”
- “Our foundation seed program is looked upon with envy by other states and is the basis for our present seed quality in Idaho.”

Pioneering research in many areas would be needed to provide answers to unsolved problems concerning potato breeding, pathology, insect pests, fertilizers, storage, and potato quality, Kraus said.

A new potato research facility at the Aberdeen Agricultural Experiment Station was completed in 1966. Named in honor of Joe Marshall, a potato grower who was widely known as “Idaho’s Potato King,” the building included laboratories, growth chambers, and controlled environment storage. The Joe Marshall Potato Research Center cost \$375,000, with the State of Idaho providing \$200,000. The remainder came from gifts by the potato industry. UI President Ernest Hartung and UI Board of Regents secretary Eldon W. Smith of Rexburg took part in the dedication ceremony.

Jay Garner, Extension agricultural agent in Fremont County, in 1967 had the opportunity to move to Blackfoot as Extension potato specialist for southeastern Idaho, “The other Extension agents in the area wanted me in there for that program,” he said in the 1980s.

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“Also the industry had asked for that kind of help. The potato growers, the potato processors, shippers, the Potato Commission — they had told the university they wanted somebody in there whose specialty was potatoes. They wanted help right then. They didn’t want to have to wait and get help second-hand. As the UI potato program developed, the industry people provided a lot of resources for us. The work in bruise prevention and soil temperature monitoring couldn’t have succeeded without the industry people’s help. They did a lot of that checking of temperature each morning at 7 a.m.”

To demonstrate how costly weeds can be, Elmore County agricultural agent Herb Edwards and Extension agronomist Robert E. Higgins grew potatoes in weed-infested plots and carefully measured the yields. They found that field bindweed reduced not only the yield but also the quality of the potato crop, causing a loss of \$82.50 per acre in fields that were severely infested. Russian knapweed caused a per-acre loss of \$163.75, while Canada thistle would cost the grower \$361.25 per acre in reduced yields.

Green peach aphids were spreading leaf roll virus in Caribou County potato fields, UI entomologist Guy W. Bishop determined. He went to the county to find out what could be done to clean up the virus problem that was threatening to put seed potato producers out of business. Because there were few apricot or peach trees in the county, Bishop could not understand why there were so many green peach aphids. Without the protection of host trees, the aphids should not be able to survive the cold winter. Bishop discovered the aphids were overwintering in nurseries — and they were present in large numbers on the bedding plants local people set out in the spring. With the cooperation of nurseries, Bishop was able to check the spread of aphids. The leaf roll virus itself was entering the area in infected potato tubers that local residents planted in their gardens. When home gardeners were given certified virus-free seed potatoes, a major source of the problem was eliminated.

Desert Gives Way to Potato Crops

Newly irrigated areas of southern Idaho were growing good crops of potatoes. In Lincoln County, former desert land became productive after deep wells were drilled. Ivan Hopkins, UI Extension agent, said 9,000 acres in the Senter Lake region of eastern Lincoln County were being irrigated by deep wells.

New land sometimes became badly infected with the soil organism that causes potato scab. In some regions, after a few years of potato production, the scab problem became so severe that potatoes were left in the ground unharvested. Ross Watson, UI plant pathologist, defined the problem in this

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way: “Without water, desert soils are notoriously low in plant populations and have sparse microbe populations. These desert soils are relatively sterile.” Potato scab pathogens multiplied rapidly in new land because they were not checked by other soil organisms. Watson found that the build-up of potato scab pathogens and other harmful soil organisms could be prevented by good crop rotations and proper fertilizer management.

Competition for water resources would become intense in the future, with “have-not” states striving to obtain water from “have” states, predicted William E. Folz, head of the UI Department of Agricultural Economics. Speaking at the 1965 Western Interstate Water Conference, Folz said plans for development of water resources should be made on the basis of social values as well as economic considerations.

“The history of water resource programs reveals that they have as major objectives certain income redistribution goals, which at least at the time they were enacted reflect society’s desires with respect to them. The irrigation program was an extension of the homestead land policy to make farms available to American citizens.”



Horticulturist George W. Woodbury pictured in a greenhouse in 1961.

Historical Photograph Collection, UI Library, 1-210-31

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Folz expressed the hope that “some organization of well informed and technically competent individuals can get together and evaluate project plans, ascertain that reasonably acceptable alternative plans have been given fair consideration, and compromise conflicting interests and competing goals and objectives.”

Important Events in Home Economics

Gladys T. Bellinger became head of the Department of Home Economics in 1960. She had a leading role in the development of the curriculum for a new bachelor's degree program in child development. She helped to organize a nursery school in Lapwai and in the summer of 1966 served as consultant for the Head Start program in Lapwai.

In 1967, Bellinger conducted a training program on campus for Head Start personnel from western Montana, northern Utah, and Idaho.

Mary Hall, a 1908 graduate of the University of Idaho, married Calvin B. Niccols, a successful hydraulics engineer. For many years, Mrs. Niccols contributed generously to the UI Alumni Fund. After her death in 1962, the university received an endowment of \$433,034 from Mrs. Niccols' estate. She had specified that the interest from the Mary Hall Niccols Trust Fund was “to be used for scholarships for young women in home economics at the University of Idaho.” Mrs. Niccols may have set up the scholarship fund as a means of repaying the generosity of others. During her student days at UI, she was the appreciative recipient of a \$100 scholarship.

Potatoes remained in good condition after 18 months of storage in experiments conducted at Aberdeen by Walter C. Sparks, UI horticulturist. Sparks was testing the use of chemical sprout inhibitors. “The inhibitors should only be used as a supplement to good storage practices,” Sparks said. Used in that way, the chemical treatments protected the quality of potatoes during prolonged storage.

UI agricultural scientists discovered that application of lime cured a mysterious “sickness” of alfalfa in northern Idaho. Declining yields had been noted in many fields. Although bacteria or other organisms had been suspected as the cause of the sickness, the researchers said the alfalfa was not infected. The research team included Roger W. Harder, soil scientist, G. R. Anderson, bacteriologist, and C. T. Brackney, superintendent of the Sandpoint Experiment Station.

Morrill Act and the Growth of Science

The Morrill Act, approved by Congress and signed by President Lincoln in 1862, created America's land-grant institutions of higher education. By encouraging the development of state universities with strong programs of studies related to agriculture and engineering, the Morrill Act speeded the development of science and technology in this country. In 1962, there was a nationwide observance of the Land-grant College Centennial. Roland Portman, UI Extension entomologist and chairman of the Centennial program committee in Idaho, said: "The value of land-grant research contributions exceeds many times the total amount expended on these colleges since they came into being."

"Slick spots" are areas of poor soil structure that look slick and shiny when they are wet. Water does not penetrate easily into these areas and crop production is low. After studying unproductive slick spot soil areas in southwestern Idaho, two UI soil scientists found a way of bringing the problem soils into full production. Maynard A. Fosberg and Glenn C. Lewis said deep plowing to a depth of 20 inches brought about chemical changes in the soil and increased water penetration. Approximately two million acres in Idaho were affected with slick spots, Lewis and Fosberg said. They conducted their research in the Black Canyon Irrigation Project.

Breeding Virus-resistant Vegetables

Table beets, Swiss chard, and tomatoes resistant to curly top virus disease were developed by UI plant pathologist W. R. Simpson. Working at the Parma Experiment Station, Simpson developed the new varieties and tested them under severe curly top conditions. Curly top disease affects beets and other susceptible plants throughout the West and it is found in most of southern Idaho.

Two new, early-maturing, virus-resistant Red Mexican bean varieties were released by the Idaho Experiment Station. A. M. Finley, head of the UI Department of Plant Pathology, said the UI-36 and UI-37 varieties had resistance to bean mosaic and curly top virus. L. L. Dean, UI plant pathologist, and Marshall LeBaron, superintendent of the Twin Falls Experiment Station, developed the bean varieties in cooperation with the USDA.

Rations containing no hay or other roughages were tested in steer-feeding trials conducted in the summer of 1960 at the Caldwell Experiment Station. Thomas B. Keith, UI animal nutritionist, formulated rations that contained concentrates produced in Idaho — chiefly barley, corn, and dried molasses

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beet pulp. Steers were fattened successfully on the all-concentrate rations, said J. J. Dahmen, station superintendent. "We don't know how steers would do in winter without roughage. There is a heat increment in roughage."

The state's orchardists built cold storage and controlled atmosphere facilities in the early 1960s. "Idaho now has storage capacity for nearly a million boxes of apples," Extension horticulturist Tony Horn said in 1965. Semi-dwarf apple trees were becoming popular because they made spraying, pruning, and harvesting easier. "New sorting machines have been installed in Idaho. Much of the bruising of apples has been eliminated," Horn said.

Pea and Lentil Exports Increase

The Idaho Association of Pea and Lentil Producers was organized in 1962. Eugene Thompson of Moscow was president and Homer Futter, UI Extension agent in Latah County, was secretary. In 1965, as a result of efforts made by producers, Idaho and Washington each formed a Dry Pea and Lentil Commission. Exports of lentils were increasing. In the early 1960s, about 15 countries were buying United States lentils. By 1965, lentils were exported to 35 countries. Dry pea exports in the early 1960s averaged about 1.8 million bags per year. In the early 1950s, only 500,000 bags of dry peas were exported annually.

Alfalfa seed growers were receiving help from a pollinating bee new to Idaho — the alfalfa leafcutter bee. The bee had been known to be present in Idaho in 1955, but its importance as a pollinator of alfalfa was not recognized until the alfalfa leafcutter bee population increased rapidly in 1960 and 1961. University of Idaho entomologists studied the bee's habits and advised seed growers to place in or near their fields shelters for the nesting boxes. Caution should be used when applying insecticides in fields where the bees were working, entomologist Norman Waters said.

No "Best" Irrigation for Potatoes

Potatoes grow well with either sprinkler or furrow irrigation, reported Galen McMaster, UI research scientist stationed at Aberdeen. "It makes no difference to a potato plant how the moisture necessary for growth is applied to the root zone," McMaster said. "A saving of water usually can be realized by sprinkler irrigation over furrow because of the higher efficiency of sprinkler irrigation." In his research, McMaster found no significant difference in the incidences of early blight in sprinkler-irrigated and furrow-irrigated potato crops.

Idaho poultry producers were achieving greater labor efficiency through the use of automated equipment, reported Robert E. Black, Extension poultry

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specialist. Poultry scientist Charlie Petersen said producers with small farm flocks could not expect to make much profit. “The trend is — and will continue to be — to larger flocks, whether we like it or not,” Petersen said. “Mass production in agriculture is following the example of other industries. This results in a lower margin of profit per unit (or bird); poultrymen with small flocks are not able to obtain a satisfactory income to justify their labor and investment.”

The cost of controlling weeds should be measured against the benefits the producer is likely to gain, UI agronomist C. I. Seely said. “There is not sufficient data to say just how much annual weed control is economically justified.” A number of cases suggest that kills of 90 percent to 95 percent are generally the most economic although there are cases where kills as low as 65 percent have given the greatest economic return.”

The development of selective herbicides had given a new direction to the age-old war on weeds, said UI weed scientist Lambert C. Erickson. “For many years, the emphasis was on prevention and eradication of weeds. However, the past 20 years can be considered the era of weed control.” Of Idaho’s 5 million acres under cultivation, nearly one-half were treated with



Horticulture students plant flowers in a 1961 class.

Historical Photograph Collection, UI Library, 1-210-22

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herbicides annually, Erickson said. The cost of these treatments: about \$5 million annually.

Tendoy wheat, a hard red winter wheat developed by UI cereal breeder W. K. Pope, was popular among Idaho growers. Yields up to 150 bushels per acre were reported. The first commercial crop was harvested in 1961. That was the year a short-strawed wheat named Gaines was released by Washington, Oregon, and Idaho agricultural experiment stations. A soft white winter wheat, Gaines thrived in 1963 when other soft white wheats were seriously infested by rust. Devere Tovey, Extension agent in Franklin County, said many growers harvested more than 100 bushels of Gaines per acre while fields of rust-susceptible Lemhi wheat gave poor yields. In 1963, Gaines accounted for 41 percent of the Idaho-Oregon-Washington wheat crop.



Garth Sasser and Jerry Nelson test milk in a dairy science laboratory in 1962.

Historical Photograph Collection, UI Library, 1-205-26

**University
Receives
100 Panama
Lambs**

The University of Idaho was presented in 1966 with 100 ewe lambs of the Panama breed — the last Panamas from the Laidlaw and Brockie sheep business in Idaho. Panama sheep are the result of crossing Rambouillet rams and Lincoln ewes. James Laidlaw died in 1950. His partner, Robert Brockie, died in 1963. Fred Laidlaw, son of the Panama breed’s co-founder, maintained the Panama flock at Muldoon for more than a decade, but in 1960 he said he was turning his attention to other livestock interests.

Looking for a practical way to raise orphan lambs, UI researcher Kenneth Fredericksen set up a pilot project at the United States Sheep Experiment Station at Dubois. He developed feeder machines that dispensed a feeding formula to lambs through nipples. “An artificial system of raising lambs has to be economical enough to show a profit, so the method of feeding milk has to require a minimum of labor. Also any milk feed, such as milk replacers, will be expensive, so it’s important that weaning be accomplished as soon as possible,” Fredericksen said.