Colorado State University Cooperative Extension

Putting Knowledge to Work

May 2003

As the premier outreach unit of Colorado State University, Cooperative Extension takes our land-grant responsibility seriously--that of providing research-based information and practical educational to Coloradans where they live. Colorado citizens look to Cooperative Extension for information they can trust, the essential element of Extension education. Just as Colorado State University creates, delivers, and instills in its students, a wealth of "knowledge to go places," Cooperative Extension takes that knowledge from the campus and around the country and focuses on "putting knowledge to work." We do that through effective partnerships within the university and among local communities, organizations and individuals. Important to our knowledge delivery is our connection to the Agricultural Experiment Station, five colleges, 15 departments, and a number of institutes and centers at Colorado State University, including the Center for Rural Assistance, Family and Youth Institute, Public Policy Institute, and the Rocky Mountain Institute for Biosecurity Research. Vital also to our outreach mission and funding are our collaborations with Colorado's counties, and our state and federal government partners.

Our reputation for "trustworthy information" stands out--based on our successful work with communities, families and youth over the past 89 years. Our successes, strong community connections and local visibility have allowed people to discover Cooperative Extension. We continually work to provide the one-on-one contact and local involvement that is a hallmark of Cooperative Extension work, while adding the efficiencies that technology provides to help deliver our educational information to Colorado citizens. Our Web site www.ext.colostate.edu provides access to Extension's electronic resources, and we recently created "AnswerLink" www.answerlink.info, an Internet service available 24-7, to provide a more efficient, effective way to respond to the myriad of questions that come to our local and state offices. It features both a "Frequently Asked Question" and an "Ask the Expert" component and provides a ready supply of information to Coloradans on virtually any topic that is within our basic mission.

As we look to the future and contemplate new and effective strategies for "putting knowledge to work," I like to think about our challenges in terms of relevance and excellence. Critical questions for us to answer are: "What should we be doing?" "Who should we be serving?" "How can we do it better?" Continually redefining the answers is important in order for us to define our strengths, communicate our priorities, market our accomplishments, and be accountable for the public investment in us. This *2002 Annual Report--Putting Knowledge to Work* showcases a diverse sample of the strengths, priorities and accomplishments of Cooperative Extension faculty and staff. I look forward to any opportunity to discuss Cooperative Extension programs with you.

Milan A. Rewerts, Director

Putting Knowledge to Work

Colorado State University Cooperative Extension

Colorado State University Cooperative Extension programs are helping Coloradans

- ***understand and cope with the risks of living in a semi-arid environment;***
- ***learn water conservation techniques to maximize water efficiency in homes, gardens, farms and communities;***
- ***address drought-related issues and develop crises management plans.***

The Costs...

• Lack of adequate precipitation in Colorado for the last three years has affected agriculture, tourism, recreation and homeowners, and has caused water shortages that greatly impact cities, industries, and small rural communities.

• Urban horticulture is a $2.2 billion industry in Colorado with approximately 40,000 employees. Turf industry reports show that 50% of seasonal employees and laborers have lost their jobs due to drought-related problems. In Denver, the value of tree loss alone is expected to exceed $500 million.

• Fires burned an unprecedented 500,000 acres of forest and range lands in Colorado in 2002, at a cost in excess of $180 million.

• Drought conditions have taken a toll on agriculture--winter wheat production was down 42% in 2002; cattle herds are being sold at unprecedented rates; profitability of Colorado farms and ranches is greatly impacted by poor crop yields, breeding failures, death losses and increased expenses.

Addressing Colorado Drought Challenges

Colorado has been gripped by severe drought for the last three years, resulting in widespread economic and environmental impacts. The lack of adequate precipitation in Colorado has affected agriculture, tourism, recreation, the green industry, and has caused water shortages that impact cities, industries, and small rural communities. All sectors of the state have felt the direct or indirect impacts of the drought. The situation was so serious that the federal government designated Colorado a drought disaster area on May 30, 2002. Tourism, typically an $8.5 billion industry in Colorado, has been hit particularly hard, reporting a 20% decline in total revenues. The rafting sector, for example, reported a 50% decline in total business. Municipalities throughout Colorado are imposing watering restrictions to conserve dwindling reservoir supplies, at a yet unknown cost to citizens. Small towns across the state that depend upon agriculture and tourism are reporting reduced retail sales, and thus reduced sales tax revenues. Overall, drought and forest fires have significantly impacted an already weak economy and the resulting budget shortfalls have reduced the ability of state agencies to respond to citizen needs.

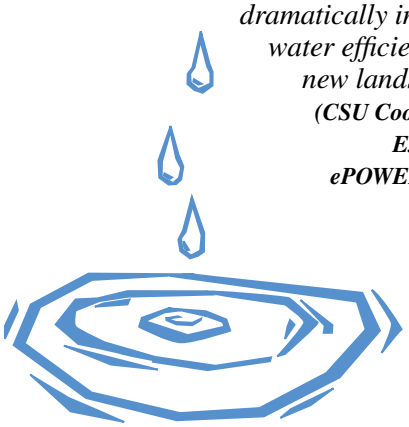
Three years of below average rainfall, coupled with three years of above average temperatures, have taken a toll on agriculture, especially on range and forest lands. The profitability of farms and ranches in Colorado have been greatly impacted by reduced incomes due to drought related problems including poor crop yields, reduced range quality, breeding failures and death losses, and increased expenses associated with purchasing additional feed and pasture. Questions are being raised about the sustainability of farm and ranch businesses due to loss of livestock herds, availability and cost of replacement breeding animals, and other economic considerations. Bankruptcies, farm sales, and permanent damage to pasture and range lands may become realities.

Colorado State University Cooperative Extension programs help citizens learn how to live in a semi-arid environment and cope with the challenges of drought.

Extension's Response...

The current drought has forced Colorado Springs Utilities and other El Paso County water suppliers to implement watering restrictions for commercial and residential water customers, with restrictions estimated to be in effect through 2008. By providing research-based information to city & county elected officials, Cooperative Extension helped structure restrictions that conserve water but minimize impact to planted landscapes. For example, the City of Manitou Springs voted to allow limited winter watering of landscape plantings specifically to preserve health and vigor of historic and significant trees and shrubs and decrease growing-season water usage. The Colorado Springs City Council watering ordinances included soil preparation requirements for all new sod and seeding projects that will dramatically increase water efficiency for new landscapes.

(CSU Cooperative Extension ePOWER, 2003)



- Colorado State University Cooperative Extension responded to critical education needs during a time of extreme drought, including reallocating human resources; organizing a Drought Response Team; holding meetings to address local drought-related issues; creating a rapid-response Web site for up-to-date information; coordinating program efforts; and providing assistance to the Governor's Water Availability Task Force.
- Targeted information to help farmers, ranchers, horticulturalists, homeowners and policy makers understand water use and water needs is provided via Web sites, meetings and outreach activities with state and USDA agency partners.
- Workshops for irrigators, ranchers, homeowners, Green Industry personnel, dryland farmers, and small acreage owners have shared current information, water conservation measures, strategies to survive the drought, and discussions regarding water use and water policy.
- Workshops for horticulturalists and landscape contractors have included information on selection of drought-tolerant landscaping plant materials and water-conservation practices to encourage low water-use landscapes; Master Gardeners are updated frequently on water conservation techniques and drought information.
- Daily and weekly evapotranspiration (ET) data is provided to irrigators and homeowners through an agency-coordinated media campaign to encourage conservation, enhance water-use efficiency for the 2003 growing season, and affect changes in consumer behavior.
- A youth education effort—"You Plus Two," is designed to encourage 4-Hers and other school-age youth to work with families, friends, teachers and parents on techniques to reduce water use and fire risks.

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Colorado State University Cooperative Extension programs are helping Coloradans

- ***improve nutrition habits and reduce disease risks,***
- ***focus on healthy nutrition and lifestyle habits that help maintain optimum body weight,***
- ***reduce dietary fat, prevent high blood pressure and reduce risk for heart disease.***

The Costs...

- *About 61.8 million Americans live with some form of cardiovascular disease; it's the No.-1 killer of men and women, 950,000 deaths every year. In 2003 Americans will pay about $352 billion for cardiovascular-related medical costs and disability. Economic costs of a stroke range from $90,000 to $228,000 over a patient's lifespan.*
- *An estimated 800,000 Coloradans have some form of heart disease, stroke or related risk factor. Heart disease–the No-1cause of death, and stroke--the No-3 killer, account for nearly 40% of deaths in the state each year–more deaths than AIDS, cancer and injuries combined. Estimated expenditures related to coronary heart disease in Colorado total $2.5 billion per year, or over $6.9 million each day.*
- *Data show that more than 50% of U.S. adults are overweight and 1 in 5 are obese; overweight and obesity contribute to diabetes, cholesterol disorders and high blood pressure. Each year an estimated 300,000 U.S. adults die of causes related to obesity with an annual cost of more than $99 billion.*
- *Diabetes impacts 17 million Americans. In Colorado, the number of adult cases rose by 50% between 1994 & 2000 affecting both sexes, all ages & all ethnic groups.*

Improving Colorado's Nutrition & Health

Nutrition plays a vital role in overall health. In fact, research has found that diet is associated with the leading causes of death, many of which are preventable--heart disease, diabetes, obesity, and several types of cancer. Cardiovascular diseases and cancer together account for almost two-thirds of all deaths in the United States. Many Americans are still challenged by how to plan a nutritious diet and create a healthy lifestyle. They continue to consume more than the recommended levels of fat and less than the suggested amounts of fruits and vegetables. Recent data indicate only 26% of Colorado adults and 32% of high school students consume the recommended level of five or more fruits and vegetables a day. A large percentage of the U.S. population also continues to have difficulty balancing energy intakes with expenditures. The importance of physical activity in achieving energy balance is highlighted in the Surgeon General's Report on Physical Activity and Health, yet the Centers for Disease Control estimate that 21.3% of Coloradans are sedentary and have no leisure-time physical activity.

Most health and disease risk factors can be changed, treated or modified to lower risk through dietary or lifestyle modifications. But despite the importance of diet and exercise, many Americans fail to achieve dietary practices that lower the risk of disease. Cooperative Extension puts a high priority on nutrition education for all populations to improve diet and health, and prevent disease.

Colorado State University Cooperative Extension puts a high priority on nutrition education that helps citizens lower risk for disease and improve lifestyle habits.

The Payoff...

Healthy food habits prevent heart disease and stroke, and reduce health care costs. Every person who prevents heart disease and avoids coronary bypass surgery through changed nutrition and dietary habits saves approximately $50,000 in hospital & surgery costs. To treat heart disease, more than a half million coronary bypass operations are performed in the U.S. each year at a cost of $10-$25 billion. The key to reducing heart failure is reducing risk through lifestyle modifications--stopping smoking, eating a low-fat, low-cholesterol diet, being physically active--and using effective medications. For every 100 people who make dietary changes through Extension education to prevent heart disease and coronary surgery, the savings in health care costs could be $5,000,000.

(American Heart Association, 2002; Agency for Healthcare Research & Quality, 2002)

- Data from the National Health Interview Survey show that more than 50% of U.S. adults are overweight and 1 in 5 adults are obese. Overweight and obesity are risk factors for a variety of chronic health conditions, including cardiovascular disease, hypertension and diabetes. Cooperative Extension programs that focus on "Healthy Hearts" teach consumers improved nutrition habits including how to reduce saturated fat in the diet—an intervention that the American Dietetic Association said could prevent thousands of cases of coronary heart disease and save billions of dollars in health costs. Last year, 84% of the 4,268 participants in Extension nutrition programs reported an increase in knowledge of nutrition and disease prevention; recent data showed 61% of those surveyed increased consumption of fruits and vegetables, 56% reported eating less dietary fat, and 26% reported reduced high blood pressure.
- A diabetes epidemic in Colorado has created challenges for patients to receive the support and education they need to manage their disease. Cooperative Extension collaborated with the Colorado Department of Public Health & Environment--Diabetes Control Program to offer Dining With Diabetes to help diabetics and their families learn ways to control blood sugar through diet and exercise. Results from 14 communities showed improvements in knowledge, attitudes and behavior in pre- and post-tests including a 15% increase in overall knowledge of healthful food choices, a 10% increase in self-confidence to control carbohydrates, and increases in knowledge of how to use food labels, modify recipes and prepare healthy meals. One 300-pound disabled participant reported a drop in blood sugar from 150 to 80 after diet changes—significant progress toward managing his diabetes. A community-wide program in Gunnison County also offered glucose screening, blood pressure checks and referrals to health care providers.

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- ***learn best management practices for turfgrass,***
- ***use established techniques that produce turf using maximum water efficiency,***
- ***reduce costs of inputs and minimize impacts on the environment.***

The Costs...

- *It is estimated that 35% to 60% of the water used in western U.S. metropolitan areas during the summer is applied to landscaped areas, including turfgrass.*
- *Homeowners who strive for the perfect lawn have been accused of using four to six times more pesticide per acre than farmers do, and may use twice as much water as the turf needs to survive.*
- *An estimated 17% of household waste in many landfills is landscape-related; as landfills get filled, more states are banning landscape waste, including grass clippings, from household garbage.*
- *Improper turf management decisions can be expensive and may negatively impact air, soil and water quality.*

Challenges of Sustainable Turf Management

The Colorado State University Cooperative Extension sustainable turfgrass management program works across Colorado to identify methods that help all producers and managers of turf—both lay and professional—produce aesthetically pleasing, functionally safe, economically viable, and environmentally friendly turfgrass. Improper management decisions can be expensive and may negatively impact air, soil and water quality, so the program involves strategies to help turf managers select species, varieties, cultural practices, and pest management approaches that reduce costs of purchased inputs, minimize impacts on the immediate and off-site environment, and provide a sustained level of quality and/or profit from turf management. It integrates knowledge about all elements—water, pesticides, fertilizers, wastes, energy, economics, etc.—into systems that can easily and economically be used at all levels of turfgrass production and management.

Colorado State University Cooperative Extension programs help professionals and homeowners use research-based, best management horticultural practices.

Turfgrass Water Conservation Efforts

The production and management of turf in Colorado requires some level of irrigation during the establishment and subsequent culture of that turf. The manner in which this is done ultimately affects turf quality, but also has potential ramifications for water and soil quality and may create important economic problems for the water user. Colorado's arid and semi-arid conditions under which turfgrass is cultured necessitates the application of approximately 50% of total urban water use to maintain adequate quality on the most commonly planted grass species, such as Kentucky bluegrass. This highly visible use–and often misapplication and waste–of water for landscape maintenance creates a target for those who maintain that it's a "non-essential use" of water. Others view the use of fertilizers and pesticides on turf areas to be problems for the natural environment, although the mass of available research tends to disprove this. Eliminating turf from landscapes would be neither practical nor popular, so it is important to determine how to manage turfgrass areas most effectively.

The Payoff...

The 'Green Industry' is the fastest growing sector of Colorado's agricultural community and currently accounts for annual gross sales of $1.5-2.0 billion.
(Colorado Green Industry Study, 1998)

Colorado's economy gains from the estimated $600 million that homeowners spend annually on their lawns, and the additional $150 million that is spent to keep Colorado's 30,000 acres of golf courses in top condition.
(CSU Horticulture & Landscape Architecture Department, 2002)

- Research has shown that grass clippings effectively and quickly return nutrients to turfgrass soils, reducing annual nitrogen requirements (from fertilizer) by as much as 30% to 50%. Clipping return does not contribute significantly to thatch accumulation, nor does it affect turf irrigation requirements. The majority of homeowners in Colorado now recycle grass clippings back onto their lawns.
- Colorado State University Cooperative Extension has found that polyacrylamide gels (popularly called "polymers" or "hydrogels") as soil amendments do not reduce turfgrass water use rates or irrigation requirements and therefore practitioners in the golf, sports turf, lawn care, and landscape industries are encouraged to use soil amendments, such as organic matter, that are proven to be beneficial. A recent recommendation against hydrogel use saved an individual client approximately $25,000 on a large landscape project.
- Colorado State University's participation in the National Turfgrass Evaluation Program has helped specialists identify turf species and cultivars that allow homeowners and professional turfgrass managers to reduce water use as well as other inputs (fertilization, mowing). The use of Mid-Atlantic Kentucky bluegrass cultivars in sod production is now standard in Colorado because they form deeper root systems than other bluegrass varieties and may require 10% to 20% less frequent irrigation than other bluegrass varieties.
- Research has shown perennial ryegrass to be more winter hardy (especially in Colorado) than recognized by the national turf community. Ryegrass was not widely used on golf courses prior to 1990, but it is now widely planted on new and existing golf courses and on high-quality sports turf throughout the state.

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- ***understand and meet the challenges of today's agriculture;***
- ***learn best management practices that maximize ranch and farm profits and minimize environmental impacts;***
- ***sustain agricultural systems that are both profitable and enhance the state's diverse natural resources.***

The Costs...

- *Colorado's human population has increased dramatically since 1980 and as a result, rural land is under increasing pressure from urban development and is being converted to residential, business, transportation and other uses.*
- *Drought impacts on the state's agricultural industry have been substantial—20% of Colorado's breeding cows have been sold off, with the January 2002 inventory value for livestock in Colorado at $2.22 billion, a loss of approximately 8% from 2001. Data suggest that feedlots have experienced an especially tough time, showing lots of red ink.*
- *It is estimated that 15% more agricultural producers obtained off-farm employment in 2002, and 15% of farmers (about 4,000) will exit agriculture after this year.*
- *An indirect measure of the poor economic health of the area's agricultural industry is the record number of farm liquidation sales reported by local farm auctioneers and the long waiting lists for others wanting their equipment sold off.*

Sustaining Colorado's Agriculture and Natural Resource Systems

Currently, both Colorado's agricultural and natural resource systems are faced with economic and environmental challenges that threaten their long-term sustainability, their economic significance and their ecological stability. Today's producers face serious farming challenges—uncertain markets; increasing farm debts, expenses and equipment costs; loss of family farms; and consumer concerns about food safety, environmental impacts and declining rural communities. Meeting the challenge of helping producers remain profitable—a requirement for agriculture sustainability—by reducing production costs and exploring creative opportunities while minimizing environmental impacts provides plenty of educational opportunities.

Colorado State University Cooperative Extension participates with the U.S. Department of Agriculture in the "Sustainable Agriculture Research and Education" program to increase knowledge about--and help farmers and ranchers adopt--sustainable crop and livestock practices. A primary goal of the program is to improve profitability, protect natural resources and foster more viable communities through sustainable agriculture systems such as soil and pest management, efficient land use, integrated crop and livestock systems, innovative marketing practices, and value-added strategies. Another goal is to increase the level of environmental awareness and stewardship among agricultural and non-agricultural clientele, and find common ground on which agricultural and environmental interests can agree—to help resolve present and future agriculture/ natural resource and environmental management issues.

Colorado State University Cooperative Extension educational programs help farmers and ranchers remain profitable while adopting environmentally-sensitive agricultural systems.

The Payoff...

Traditional and non-traditional agricultural businesses in Colorado directly support over 105,000 jobs and generate sales of almost $10 billion annually; every job in agriculture indirectly generates nearly two more jobs elsewhere in the economy, and every dollar of agricultural product sold yields another dollar of sales to other businesses.
(Colorado Agricultural Statistics Service, 2002)

The responsibility of agriculture and natural resource managers to preserve the environment is important; 51% of Colorado's land base represents an annual agricultural production value of $4.3billion dollars; an additional 36.3% of the total land base in Colorado is represented by public lands on which agricultural producers assist in providing a significant amount of natural resource management.
(Extension Sustainable Ag Plan of Work, 2003)

- Cooperative Extension programs have shown that agricultural producers who effectively manage their farm risk and increase their operational resiliency are consistently more profitable than average and are better able to preserve their farm's integrity and enhance the land's environmental sustainability. Extension efforts have helped 56% of participating agricultural producers & land managers increase knowledge about integrating production practices with environmentally sound decision-making; 72% have enhanced profitability through development of risk management tools.
- Colorado and Nebraska farmers and ranchers who attended a "Human Side of Farming" Conference were introduced to ideas for land preservation, alternative crop and livestock enterprises, new marketing strategies for traditional crops, and ways to bring youth back into agriculture; 77% reported knowledge increases and 75% planned to use the ideas in their operations.
- Up to 80% of Colorado producers and industry consultants attending alfalfa and corn management clinics reported that they increased knowledge and skills about management practices and would make changes in their operations based on what they learned; some participants reported average benefits of $10 to $25 per acre from improved knowledge and skills, with expected cost-benefit totals of $620,000 for 13,000 alfalfa acres, and $178,000 for 125,000 corn acres.
- Applied research has helped Colorado's eastern plains farmers develop a more intensive rotation system for dryland crops that reduce tillage practices and increase total crop yield and profits resulting in an increase of $15 million per year to the Colorado economy. In addition, reduced wind and water erosion, and weed, soil and crop disease benefits provide a net positive effect on the environment.

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- ***understand the risks of foodborne illness,***
- ***learn prevention techniques to avoid food safety problems,***
- ***reduce health costs associated with foodborne illness.***

The Costs...

- *An estimated 76 million persons contract foodborne illnesses each year in the United States, and complications arising from foodborne illness such as dehydration, pneumonia, kidney failure and miscarriage, result in more than 5,000 deaths annually.*
- *The annual economic and social consequences of foodborne disease in relation to health care costs and loss of work productivity is quite large—yearly cost of lost productivity is estimated at between $20 and $40 billion in the U.S. and $292 to $584 million in Colorado.*
- *Hospitalizations due to foodborne illnesses are estimated to cost over $3 billion each year in the United States and more than $43 million in Colorado.*

Addressing Colorado Food Safety Issues

According to the Healthy People 2000 Initiative, foodborne illness in the United States is a major economic burden and cause of human suffering and death. While foodborne illnesses are often temporary, they can also result in more serious illnesses requiring hospitalization, or in long-term disability and death. The Centers for Disease Control and Prevention estimates that one in four Americans become infected with some form of foodborne illness each year, and that annually foodborne contaminants cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the U.S. These estimates make the assumption that because most cases of foodborne illness are mild and/or short-lived and are difficult to trace back to a particular food, only 1% to 5% of actual cases are reported each year and even fewer are investigated.

The hazard of foodborne illness originating from mishandled food is an issue in any location where food is available to consumers. It is especially important when problem food is served to people with the highest risk--including pregnant women, young children, the elderly, and people with chronic disease and HIV. Food poisoning is usually a preventable disease and in most instances can be avoided simply by applying well-established hygienic standards in the production, preparation, holding and serving of food. Effective food safety education must increase knowledge as well as raise consumer awareness about food safety risks—then motivate consumers to change their food-related behaviors—primarily hand washing, adequate cooking of food, avoiding cross-contamination, and washing fresh fruits and vegetables to reduce microbial risks.

Colorado State University Cooperative Extension food safety education is focused on reaching those who prepare or serve food to others as well as those at high-risk for foodborne illness.

The Payoff...

ServSafe training teams are typically responsible for a class of 30 food handlers, who in turn can be responsible for serving or preparing as many as 7,000 to 10,000 meals per day in restaurants, food establishments, nursing homes, senior centers, day care homes, jails, prisons and catering businesses.
(CSU Food Science & Human Nutrition Department, 2002)

In Larimer County, CO, the local health department has estimated health care costs per hospitalized foodborne illness case at between $7,000 and $23,000. Last year, 33 Master Food Preservers in Larimer County fielded 861 consumer questions related to food safety and food preservation; with a conservative estimate, these volunteers could have saved more than $600,000 in health care costs by preventing just 10% of potential foodborne illnesses.
(Larimer County Health Department; CSU Cooperative Extension ePOWER, 2003)

A 23% drop in bacterial foodborne illnesses has been reported since 1996, due to enhanced surveillance, new control measures to prevent foodborne diseases, promotion of good agricultural practices for fresh produce…and extensive food safety education.
(Centers for Disease Control and Prevention, 2002)

- Colorado State University Cooperative Extension offers food safety education through ServSafe™, a certification program developed by the National Restaurant Association. Eight training teams who serve twenty Colorado counties have trained 1,157 restaurant managers/owners and food handlers from nursing homes, grocery stores, jails and prisons, catering businesses, service clubs and senior meal sites. Documented changes in food safety behavior showed 84% to 95% planned to adopt at least one or more recommended food handling practices, and knowledge increased 30%.
- Following a suspected link between two cases of E. coli 01557:H7 infection in children who consumed watermelon with unwashed rinds at a local Farmers' Market, the Larimer County Department of Health & Environment immediately required vendors to stop providing free food samples. Cooperative Extension in collaboration with county health officials provided training for more than 200 farmers, market managers, vendors and health department officials; 90% increased their knowledge of good agricultural practices and safe produce sampling guidelines; 83% said they planned to make changes in food-handling procedures, including installation of hand-washing stations, sanitizing knives and cutting boards, and pre-washing produce prior to market. A six-month follow-up with growers and vendors indicated that most made the recommended changes or chose not to offer samples at farmers' markets.
- A survey of restaurant managers in Colorado, Wyoming and Montana found a strong preference for hiring workers with training in safe food-handling procedures; the majority of managers also indicated a willingness to pay for training, and reward trained employees with higher starting salaries, increased wages and promotions.

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- ***learn best management practices for sustaining landscapes that reduce water and chemical use, and lower maintenance costs.***

The Costs...

• Estimates are that 35% to 60% of the water used in western U.S. urban areas during the summer is applied to landscapes.

• Studies also show that 27% of pesticide use in the U.S. is in urban areas—by a population that is mostly untrained and unregulated in that use. On a per-acre basis, that's more pesticides than are used in rural agricultural areas.

• Three years of below-average precipitation and above-average temperatures have caused drought conditions and fires in Colorado, initiating community water restrictions and water conservation efforts across the state.

Using Native Plants to Meet "Growing" Challenges and Sustain Area Landscapes

The demand for practical landscape information from both commercial and home horticulture audiences continues to increase as Colorado's population grows and home ownership expands. New residents find that the landscape experiences they bring from elsewhere don't always apply to Colorado's weather, high altitude, soil, growing conditions, and available water supplies.

Continually increasing requests for altitude- and site-specific horticultural information, combined with drought challenges and water restrictions, have prompted Cooperative Extension offices throughout Colorado's population-intensive Front Range to focus on creative landscaping education efforts.

In Jefferson County, a fast-growing foothills and mountain suburb of Denver, with approximately 200,000 households, the Extension Native Plant Masters Program has focused horticultural education on sustainable landscapes using site-appropriate native plants that can reduce the need for water, pesticides and maintenance. The program is designed to increase the skills of public-land-agency staff and volunteers, who in turn educate homeowners. The goal of the Native Plant Masters program is to educate the public about the biological and human values of Colorado plants to foster stewardship and sustainable use of plant resources. Since inception of the program, the 124 graduates have taught more than 43,400 others the importance of using native plants in landscapes to increase landscape plant diversity, reduce or control noxious weeds, improve water conservation efforts, and reduce reliance on pesticide options to control insects and plant diseases.

Colorado State University Cooperative Extension educates Native Plant Masters in use of site-appropriate native plants that sustain landscapes and reduce need for water and chemicals.

The Payoff...

Native Plant Master training has helped homeowners and public-land-agency staff and volunteers reduce or control noxious weeds, improve water conservation efforts, and reduce use of pesticides in landscapes by replacing pest-prone plants with alternative native species that contain natural adaptations against insects and diseases; 68% of participants included native plants in 47,169 acres of public-land or private-property landscapes; 83% controlled noxious weeds on 66,228 acres of property they owned or managed. ***(Jefferson County Sustainable Landscape Plan of Work, ePOWER, 2003)***

- Cooperative Extension's Native Plant Masters Program in Jefferson County is a collaborative effort with Colorado State Parks, the Lookout Mountain Nature Center and the Colorado Mountain Club, and includes participants from 21 natural resources agencies who encourage use of native plants in landscapes to increase landscape plant diversity, and reduce reliance on pesticide options to control landscape insects, diseases or weeds.
- In-depth Native Plant Masters field training for public-land-agency staff and volunteers is through a "train-the-trainer" approach that requires participants who complete the training to commit to educating public audiences and sharing information; 85% of those trained reported they used information gained from the program to educate others about the impact of weeds on native plants, and about the value of using native plants for landscaping including their value in water conservation efforts.
- The 124 Native Plant Masters trained to date have logged more than 43,400 educational contacts as part of their commitment to share information. In classes taught by these Native Plant Masters, 90% of participating homeowners reported that they plan to include native plants in a sustainable landscape on their own properties.
- Native Plant Masters reported using the information they gained in a variety of educational settings, including K-12 classrooms, hikes sponsored by parks and recreation departments, mountain club programs, and local policy discussions. One Native Plant Master—a water district staff member—developed a plan to offer rebates to homeowners who use native plants in xeriscape landscapes; another used the information in curricula developed for other naturalists.

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- ***increase awareness about and understanding of emerging animal health threats;***
- ***learn techniques to reduce livestock health risks and care for animals;***
- ***develop animal disease control and management plans.***

The Costs...

- *Colorado continues to face concerns about animal diseases that could affect the state's livestock, wildlife, and in some cases human populations. To date, West Nile virus has caused 4,000 reported illnesses and 274 deaths in humans across the U.S.*
- *Colorado's equine industry contributes $2.6 billion a year to the economy. Diseases affecting horses, including West Nile virus, Eastern and Western equine encephalitis, and other mosquito-borne viruses, are a major concern of horse owners.*
- *Foot and mouth disease is a severe, highly contagious viral disease affecting all cloven-hoofed animals (wild & domestic). A foot and mouth disease epidemic in the United States would affect production of milk, cheese & other dairy products, availability of meat and venison, and the national and world economy. It could devastate Colorado's livestock industry and wildlife populations.*
- *Exotic Newcastle disease is one of the world's most infectious & contagious diseases of birds; affecting domestic chickens, ducks and geese, caged birds, and wildlife including pheasants and songbirds. Nearly 100% of unvaccinated poultry flocks die if they get the disease.*

Addressing Animal Health Issues

There are 30,000 farms and ranches in Colorado on 31.3 million acres of land. Colorado agriculture production from that land amounts to $4.5 billion of which 73% is attributed to livestock. Because profitability in the livestock industry has a direct correlation to animal health, major beef producers, feedlot managers and dairy operators are extremely keen and knowledgeable about animal health and well-being. The majority of small-acreage producers are also interested in the health and well-being of their animals but many lack the experience and knowledge necessary to provide healthy, comfortable environments for the animals under their care. In addition, the growing demand by the public for food safety and quality assurance of the animal products they consume, and the emerging threats to animal health by foreign animal diseases, add to the increasing need for education about zoonotic diseases. Because of the global exchange of commodities and world travel, the Pacific and Atlantic Oceans no longer provide barriers to foreign animal diseases. With Colorado's continuing population growth encouraging the migration of humans to rural environments, more human-animal exposure occurs along with possibility of disease transmission. Constant vigil by state and local veterinarians monitors the potential for diseases in Colorado's livestock population. The first line of defense is educating the producer who sees the animals on a constant basis, and who can report unusual behavior or problems. Although many producers are aware of this correlation, many need help with livestock health programs. Cooperative Extension places a priority on providing up-to-date educational information on animal health issues to producers, land managers, small acreage owners and citizens.

Colorado State University Cooperative Extension programs help citizens reduce health risks to their livestock and domestic animals.

The Payoff...

There are 30,000 farms and ranches in Colorado on 31.3 million acres of land; agriculture production from that land amounts to $4.5 billion, 73% which is attributed to livestock—that's 3.05million head of cattle & calves worth $2.10 billion, 370,000 head of sheep & lambs worth $31.45 million, 780,000 head of hogs & pigs worth $76.44 million, and 4.21 million chickens worth $8.0 million. Colorado ranks as the 4th largest cattle feeder in the country with more than 2 million head of cattle fed annually, and 3rd in the number of market sheep and lambs and is the nation's largest producer of lamb. In addition, statewide, there are approximately 10,000 small-acreage owners each maintaining livestock and other animals on 5 to 40 acres. ***(Colorado Agricultural Statistics, 2002)***

- Colorado State University Cooperative Extension animal scientists and veterinary medicine faculty work closely with the livestock industry to assure a safe consumer product. Much education has been done to increase awareness among producers about preventing antibiotic residues or other adulterants from entering the food chain. Extension education, such as the Meat Quality Assurance Program, targets 4-H youth, family producers, small-acreage owners and others who raise livestock for sale, with information on how to produce wholesome and safe animal products.
- The Colorado Center for Animal Health and Well-Being, a collaboration between the College of Veterinary Medicine & Biomedical Sciences, Cooperative Extension, the Colorado State Diagnostic Laboratory, the Colorado Department of Agriculture, and Colorado State's Integrated Livestock Management program, was organized to monitor animal health, provide public health information and address animal emergencies—from wildfires to disease.
- The U. S. Department of Agriculture, Colorado Department of Agriculture, Cooperative Extension, and large animal veterinarians actively monitor U.S. livestock for foot and mouth disease and have plans in place to take immediate action if the disease is suspected in the animal population. Extension foot and mouth disease crisis-planning efforts included "train-the-trainer" modules for Extension faculty; follow-up seminars for producers, wildlife managers & others; and a statewide informational and media campaign.
- Cooperative Extension offices are serving as drop-off sites for birds to be tested for Exotic Newcastle Disease as part of the Colorado Department of Agriculture's surveillance efforts to stop spread of the contagious and fatal virus that affects all species of birds.

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Colorado State University Cooperative Extension programs are helping Coloradans

- ***increase knowledge and skills related to the challenges of adult development and aging;***
- ***improve the social, economic and physical health of the state's senior population.***

The Costs...

• Financial concerns, health and long-term care emerge as leading issues among Colorado older adults surveyed by AARP; 70% reported being extremely concerned about the security of pensions and benefits; 64% about finding affordable health insurance; 73% were concerned about consumer fraud; 62% said if they need long-term care, they want to remain in their own homes as long as possible.

• Family caregivers are the backbone of the U.S. long-term care system--they provide about 80% of the care for people who need help with daily activities. 45 to 52 million individuals provide informal, unpaid care; one study estimated the value of family caregiving at $196 billion annually if the number of hours of informal caregiving was replaced with paid services.

• Caregiving responsibilities seriously affect the American economy through lost productivity of employed caregivers (mostly women) because of altered work schedules and lost opportunities--40% reported it affected their ability to advance in their job; 29% passed up a promotion, training or assignment; 25% passed up an opportunity for a job transfer or relocation; 22% were not able to acquire new job skills.

Addressing Issues Faced by Colorado's Senior Population and Their Families

During the next 3 to 4 decades, there will be a dramatic increase both in the number of elderly persons and in the proportion of elderly persons in the population. The current proportion of elderly persons, 13%, will rise to perhaps 20% by the year 2030, when the number of elderly is expected to double. Many areas of public life will be greatly affected by the aging of the baby-boom cohorts, the very large numbers of children born between 1946 and 1964, who begin to turn 60 in 2006. These projected demographic changes have given rise to a general concern about the social, economic, and physical "health" of our nation's population. Current concerns about the aging of the population arise from three conditions: 1. the proportion of elderly in the total population; 2. the increasing number of elderly and their requirements for special services (health, recreation, housing, nutrition, etc.) and formal and informal care, as well as their participation in entitlement programs; 3. the implications of an aging society for the whole range of social institutions, from education and family to business and government. Colorado State University Cooperative Extension established a Gerontology Team in 1991 to consider issues and address the needs of Colorado's growing population of older adults. Colorado's 60+ population is among the fastest growing in the nation. In some rural counties, seniors account for 20%-30% of the overall population. Cooperative Extension education is targeted at this growing audience to help meet their needs related to housing, nutrition, health care, financial management, self-sufficiency and long-term care.

Colorado State University Cooperative Extension programs address issues of later life through education targeted at the state's rising senior population.

The Payoff...

Cooperative Extension programs are designed to provide education to Colorado's seniors and their families who provide care. The average caregiver is a 46-year-old woman who is married and employed outside the home; more than one in five say they take care of someone with mental confusion, dementia, Alzheimer's disease, or forgetfulness. Providing financial management education to families is important to the 22% of persons aged 45 to 55 who are caring for or financially supporting older relatives. Also because more than one in 10 grandparents at some point raise a grandchild for six months or longer, and more than half of grandparent caregivers are aged 60 and older, Cooperative Extension is meeting the educational needs of these audiences with programs and resources such as "Grandparents Raising Grandchildren," "When Dependency Increases," "Healthy Aging" columns, "A Delicate Balance," Senior Nutrition newsletters, "Who Gets Grandma's Yellow Pie Plate?" "Growing Older and Smarter," and Financial Security in Later Life.

(National Alliance for Caregiving, 1997;AARP, 2002; CSU Cooperative Extension Gerontology Team Report, 2001)

- Colorado State University Cooperative Extension offered "Healthwise for Life" to more than 5,000 older adults in 23 counties to help them improve communication with health professionals and increase awareness about heath issues. Of 800 participants surveyed, 40% reported saving up to $100 per year; 26% reported saving between $100 to $1,000 a year; 48% reported an improved quality of life; 39% said they had fewer doctor visits; and 42% said they took a more active role in their personal health care--because of the information they received from Healthwise.
- Gerontology team members assisted in presenting a "Seniors Against Fraud & Abuse" Conference, with a follow-up survey to evaluate change in participant's behavior. Of those respondents, 56% learned to check phone bills to avoid slamming, 38% adopted new behaviors to discourage telemarketers, and 31% knew to call the District Attorney's Office for suspected fraud.
- A video titled "A Delicate Balance" was created to show the positive aspects of caregiving in rural Colorado. Programs around the topic were presented to more than 300 families and additional agency personnel and caregivers. A survey of participants showed 97% increased information on consequences of caregiving stress, 88% increased knowledge about caregiving resources, and 86% understood the importance of caregivers also meeting their own needs. The video received national recognition from the National Extension Association of Family & Consumer Sciences, and the Telly Award for outstanding non-network video production.
- Last year, Cooperative Extension educational programs in family and consumer sciences provided education for families and caregivers that showed 96% improved their communication skills, 91% increased their knowledge of adult developmental stages and changes associated with aging; and 86% reported making better decisions.

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Colorado State University Cooperative Extension programs are helping Colorado youth

- ***build a solid foundation of knowledge through hands-on projects, educational activities and community service experiences;***
- ***increase their problem-solving abilities, resiliency and asset factors;***
- ***resist participation in negative behaviors;***
- ***develop life skills that help them become capable and competent adults.***

The Costs...

• *Many young people practice behaviors that place them at risk for serious injury, sexually transmitted diseases, other health problems and even premature death, according to data from the Youth Risk Behavior Surveillance System, a comprehensive nationwide survey of high school student health behaviors. Findings include:*
– 73% of all deaths among school-age youth and young adults result from four causes– motor vehicle crashes, other unintentional injuries, homicide, and suicide;
– 50.8% had at least one drink of alcohol the past month;
– 48.4% had sexual intercourse during their lifetime;
– 36.6% were in a physical fight during the past year;
– 36.4% smoked cigarettes the past month;
– 32.9% of students had property (car, clothing, or books) stolen or deliberately damaged on school property;
– 18.3% carried a weapon the past month.

• *Key findings from a recent survey by the Colorado Trust revealed that Colorado youth are concerned about emotional violence– teasing that is beyond playful, cruel gossip, bullying, and rejection by peers that can lead to physical violence.*

Strengthening Youth Through 100 Years of 4-H Youth Development

Assisting young people as they prepare for the future continues to be the central mission of Colorado State University Cooperative Extension's 4-H Youth Development Program. Involvement in 4-H helps youth build a solid foundation of knowledge and life skills. The 4-H Program offers a wealth of opportunities for young people to learn decision making, leadership and communication skills, interpersonal relations, mental and physical health, wholesome attitudes, career interests, and the ability to understand and relate to others. 4-Hers also learn responsibility, resiliency, self confidence, citizenship, community service and good work habits.

The 4-H Youth Development Program is based on the foundation that youth are a vital resource• that they comprise our most important building block for the future. The American workforce, economy, social structure, education, justice, and democratic government all depend on the next generation of educated, concerned and involved youth. Cooperative Extension agents, specialists and volunteers encourage the growth and achievement of young people through a hands-on, learn-by-doing philosophy. The Colorado 4-H Youth Development Program reaches more than 100,000 youth each year and involves parents, caregivers and more than 10,000 adult and youth volunteers who dedicate their time and knowledge to 4-H kids through organized clubs, individual projects, camps, school enrichment activities, after-school and special-interest programs, and international experiences.

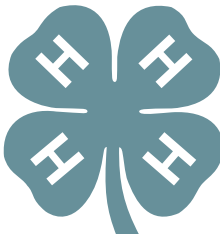
In 4-H, youth are valued for their knowledge, ideas and as a resource for the future. 4-H helps kids learn how to do something as well as how to be something.

Two recent studies confirm that kids who participate in 4-H and similar out-of-school programs tend to be better off than those who don't. 4-H appears to outpace most other youth programs in the effect it has on helping children develop assets considered essential for lifetime success. Both studies revealed that youth who stay involved in 4-H or similar programs have the highest educational aspirations and school grades, a stronger obligation to serve their community, higher levels of interaction with adults, greater self-esteem and decision-making skills, and a greater ability to make friends. They also are at a lower risk for delinquent behaviors such as drinking or smoking cigarettes, stealing or shop lifting, damaging property, carrying a gun, and using drugs.

(Cornell University, 1999; Montana State University, 2001)

A U.S. government report showed a return of $6 to $8 for every $1 spent on prevention programs to keep youth on track. Last year, the Colorado 4-H Youth Development Program reached 114,806 youth from age 5 through 18 with research-based, developmentally appropriate prevention programs, and support from 10,189 caring adult volunteers.

(U.S. House of Representatives Select Committee on Children Youth and Families, 1997; CSU Cooperative Extension Blue Ribbon Enrollment Program, 2003)



The Payoff...

The mission of the Cooperative Extension 4-H Youth Development Program is to build lifelong skills that develop young people's potential through safe, supportive environments that focus on critical elements that researchers identify as essential to positive youth development. Data from both a National 4-H Impact Assessment Project that surveyed youth and adults in 4-H, and Colorado youth program evaluations reveal information on positive youth outcomes.

- A positive relationship with a caring adult: Nationally there was strong agreement by both youth (90%) and adults (98%) that 4-H adult volunteers made young people feel good about themselves. Colorado data show 80% of participating youth had positive interaction with interested adults to implement a project.
- Safe physical and emotional environment: 98% of adults and 94% of youth surveyed agreed that in 4-H, youth feel safe to try new things and do 4-H activities.
- Opportunities to master skills & content, and be an active, engaged learner: 88% of youth surveyed nationally felt encouraged to try new and different things; 84% felt that 4-H helped them solve problems on their own. Colorado data show 86% of 4-H youth surveyed were able to carry out a plan to solve a problem, and 92% used learned information to complete a project.
- Opportunities to practice service for others: 98% of adults and 91% of youth agreed that they helped each other work as a team to do community work. State data showed that 12,103 Colorado 4-Hers worked on community service and volunteer efforts last year.
- Opportunities for self-determination, decision making and goal setting: 90% of kids surveyed nationally agreed that "4-H teaches me to help other people" and "be responsible for my actions." In Colorado, 96% of surveyed youth learned how to set goals; 90% actually demonstrated goal setting and critical thinking skills.
- A positive connection with the future: 90% of Colorado youth surveyed reported they experienced success and new life experiences, and 80% reported taking care to avoid dangerous, risky or harmful situations.
- An inclusive atmosphere: 90% of kids nationally agreed that 4-H helps them accept differences in others. 82% of Colorado 4-Hers surveyed reported they accepted differences, and managed conflict positively.

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Colorado State University Cooperative Extension and Agricultural Experiment Station collaborations are helping Coloradans

- ***reap the benefits of improved agricultural productivity supported by Land Grant University research and education;***
- ***benefit from Colorado's contribution to the nation's high-quality, low- cost food and fiber supply.***

The Costs...

- *Staying in business as a rancher or farmer is a challenge at best...the startup costs of land, buildings and farm equipment are staggering...nearly $820,000 for an average farm in northeast Colorado; coupled with average annual production costs of $280,000, narrow profit margins, and higher-paying jobs elsewhere, young people are discouraged from returning to family farms.*
- *Data show that 15% more agricultural producers obtained off-farm employment in 2002; one third of farm operators are estimated to have worked two hundred days or more off the farm--a 22% increase from the mid '70s.*
- *Predictions are that 15% of Colorado farmers (approximately 4,000) will exit agriculture this year due in part to low profit margins, other economic considerations...and aging farmers—nearly 30% are 65-years-old or older, and the average age of farm operators increases each year—last data show it's about 55 years of age.*

Supporting Colorado Agriculture Through the Extension-Experiment Station Partnership

Coloradoans have much to be proud of when it comes to agriculture. The state ranks 17th nationally in cash receipts and is a top five producer of potatoes, sunflowers, winter wheat, carrots, lettuce, onions, cattle on feed, fed cattle, and sheep. Agricultural businesses directly support over 105,000 jobs and generate sales of almost $10 billion annually. Every job in agriculture indirectly generates nearly two more jobs elsewhere in the economy, and every dollar of agricultural product sold yields another dollar of sales to other businesses.

In the last 50 years farmers and ranchers in the United States have increased productivity by almost 2% every year. Remarkably, these advances were achieved with no increase in the real cost of inputs. As a consequence, the U. S. now produces two and a half times more food and fiber while spending slightly less on land, labor, and physical inputs than it did fifty years ago. Most of this prosperity is due to research and development. Colorado State University's partnership between the Agricultural Experiment Station and Cooperative Extension is an investment in research and education that assists producers in managing crops and livestock and the pests and diseases that challenge them, and developing improved management strategies, viable markets and value-added products in order to maximize return on their efforts.

The Payoff...

Traditional and non-traditional agricultural businesses in Colorado directly support over 105,000 jobs and generate sales of almost $10 billion annually; every job in agriculture indirectly generates nearly two more jobs elsewhere in the economy, and every dollar of agricultural product sold yields another dollar of sales to other businesses.
(Colorado Agricultural Statistics Service, 2002)

National studies have shown that investments in agricultural research and extension programs pay off—returns have been shown to range from 30% to 90% for research and 23% to 45% for extension.
(US Economic Research Service, 1998)

Increased agricultural productivity—thanks to America's land grant university research and development—has reduced food expenditures for American consumers to only 11% of their income, allowing them more discretionary income for non-agricultural purchases than people in most other countries.
(US Economic Research Service, 2001)

The Colorado Agricultural Experiment Station-College of Agricultural Sciences-Cooperative Extension partnership has provided support to the state's agricultural industry since the early years of Colorado State University. This joint research, teaching and outreach education effort has resulted in such agricultural developments as:

- Improved crop varieties—More than half of the wheat grown in Colorado is from varieties developed by CSU that provide higher yields and pest resistance; Russian wheat aphid resistant wheat contributes about $8.8 million per year to the agricultural economy by preventing yield losses and eliminating insecticide sprays. Colorado ranks second in the nation for fresh market potatoes—77,000 acres that produce 30 million 100-pound bags each year with a market value of $117 million; CSU potato cultivars are estimated to enhance that value by $11-12 million annually due to improved yield and quality.
- New farming practices—Education and research efforts have reduced tillage procedures, increased surge irrigation, reduced erosion and enhanced water absorption in the Arkansas River Valley, efforts that help farmers cut costs through more efficient irrigation and reduced sediment and salt returned to the river.
- New tools and technologies—Field studies using "precision agriculture" technologies such as yield monitors, remote sensing, global positioning systems, and geographic information systems have helped producers improve soil composition, water application, weed, insect & plant disease management, and increase yields.
- Solutions to problems--University research and education are working to provide solutions to broad issues such as water quantity & quality, food safety, management of natural resources, and sustaining agriculture.

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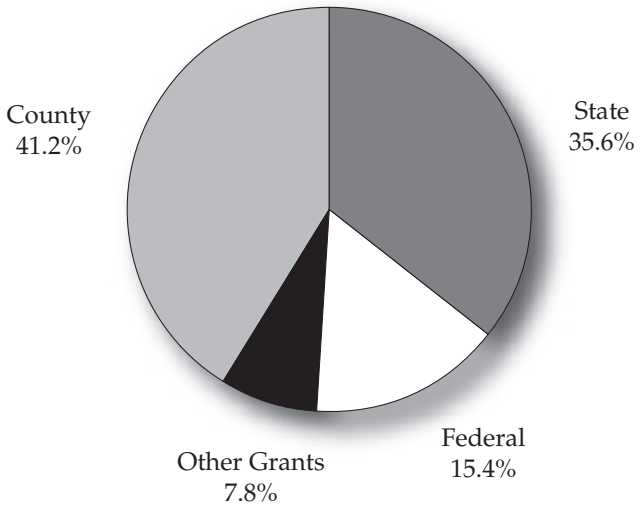
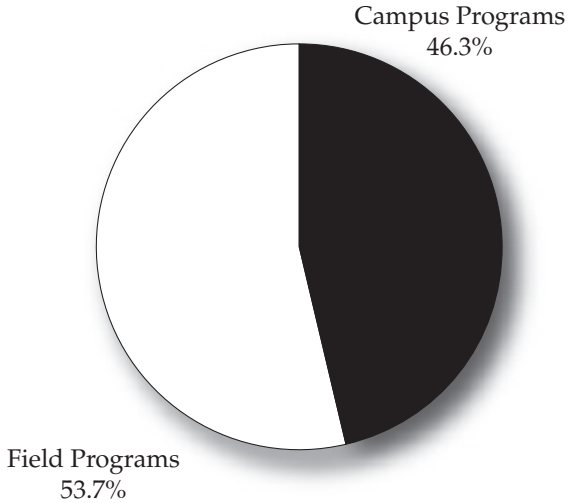
2002-2003

Cooperative Extension Funding



Total Funding = $25,496,359

Appropriated Budget

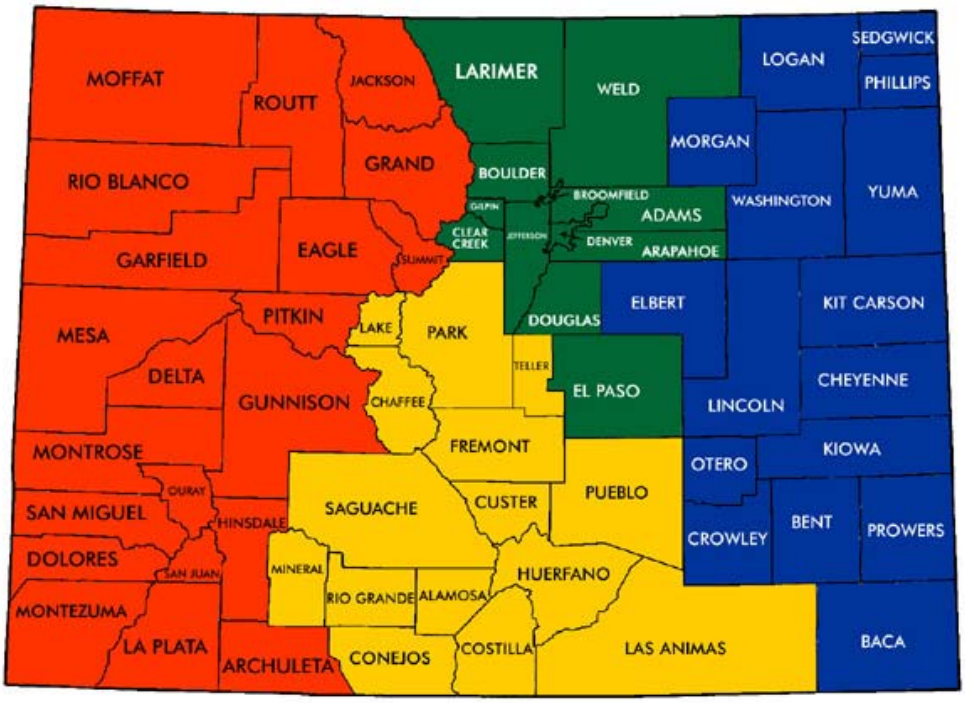


Appropriated Budget = $11,496,359

Cooperative Extension is the off-campus educational arm of Colorado State University. The Cooperative Extension system, a nationwide educational network, is a partnership of county, state and federal governments working cooperatively with the private sector. The Federal Smith-Lever Act established state Extension Services as a third program branch, along with resident instruction and research, of the land-grant universities in each state. Cooperative Extension agents and specialists are faculty of Colorado State University. They work with local constituents throughout Colorado in planning, developing and implementing the educational programs of Cooperative Extension. Volunteers also have an important role in the delivery of Extension programs. Cooperative Extension programs serve Coloradans wherever they live.

Funding for Cooperative Extension is provided from multiple sources: federal, state, county and non-tax monies. Federal funds are allocated to the states on the basis of law and formula. Additionally, some federal funds are earmarked to meet special national priority needs. Cooperative Extension receives state funds from Colorado State University's allocation through the Colorado Commission on Higher Education as part of the state's higher education budget. County commissioners appropriate annual budget funds to support the operation of the Cooperative Extension office in their county. Some funds are received from non-tax sources such as program grants and cost recovery fees.

COOPERATIVE EXTENSION REGIONS



Cooperative Extension Introduces Two New County Offices in 2002

Colorado State University Cooperative Extension added two new locations to its statewide educational network last year with the opening of offices in Broomfield and Gilpin counties in the Front Range Region.

Broomfield County

Broomfield is not only the newest location for Cooperative Extension, it's also the newest county in the state. After existing for years with residents split among Adams, Boulder, Jefferson and Weld counties, the City of Broomfield became a county with statewide voter approval in the 2000 election. While putting in place the programs and services the State of Colorado requires of counties was a top priority, creating a Cooperative Extension office for its 45,000 residents was also high on the list for Broomfield officials, said Pat Springer, a member of the Health & Human Services Task Force for the newly formed county. She said providing gardening information and helping people deal with drought are the top priorities this year.

Carol Bylsma (seated right), director of the Cooperative Extension office in Broomfield County, reviews a county open-space plan with some Master Gardener volunteers.

"We're hopeful we'll add the full scope of Cooperative Extension programming over time, and we're delighted that County Director Carol Bylsma will be able to wear many hats as we work toward that goal," Springer said.

The first tasks for Bylsma include coordinating training and service for Broomfield's first class of Master Gardener volunteers and working with the Parks and Recreation Department to design and install a Xeriscape demonstration garden at the new City and County Building. Bylsma also is working to establish 4-H and Wildlife Master volunteer programs in her county. The Cooperative Extension office in Broomfield County is located with Broomfield Health & Human Services at #6 Garden Center.

- *The City and County of Broomfield became Colorado's 64th county and 2nd combined city and county on November 15, 2001. The previous city/county created was Denver in 1902; the last county was Alamosa created in 1913. Broomfield has approximately 43,000 residents.*
- *In true western pioneer spirit, citizens of Broomfield successfully created a new government structure that detached them from the four counties of which they were a part – Adams, Boulder, Jefferson and Weld.*
- *The 37 square mile county is a mix of residential, industrial, commercial and open space uses. The county currently has 1,700 acres of open space with a plan to set aside 9,700 acres.*
- *Broomfield has a broad employer base with jobs ranging from retail at Flatirons Mall to manufacturing at Hunter Douglas and Geneva Pharmaceuticals. Numerous high-tech communications businesses have their corporate homes there, including Ball Aerospace, Level 3 and Sun Microsystems.*
- *Broomfield has preserved a silo as a historic landmark and will have Colorado's first Xeriscaped cemetery.*

Gilpin County

Gilpin County has a long history in Colorado. The discovery of gold in 1859 prompted the county's early growth. The original stake became known as the "richest square mile on earth." The county retains a strong sense of its origin and history through its architecture, museums and mines. Gilpin County is home to 4,500 permanent residents and its quality natural resources, state and national forest recreation, and low-stakes gambling industry attract many thousands of visitors each year. More recent growth and development in the communities of Central City and Blackhawk led to increased demand for services including Cooperative Extension programs.

Irene Shonle (center), director of the Cooperative Extension office in Gilpin County, meets with members of the county Open Space Committee.

"We're really pleased to have the Cooperative Extension office open and to have Irene Shonle as director," said Gilpin County Commissioner Craig Nicholson. "We worked for several years to make this happen."

Shonle's first priorities are to provide programs and information about small acreage management and noxious weed issues, to train Master Gardener volunteers, and to recruit new 4-H members and volunteer leaders. Gilpin County has two traditional 4-H clubs in place – the Gilpin Gallopers and Mountain Mutts, and more will be added. Keeping noxious weeds such as leafy spurge, yellow toadflax and Canada thistle in check is also a high priority for Director Shonle. "Gilpin County does not have a huge weed problem and we want to keep it that way," she said. The Cooperative Extension office in Gilpin County is currently located in the Justice Center on Highway 46.

- *Gilpin County is located about one hour west of the Denver metro area on the eastern slope of the Rocky Mountains. The county is approximately 150 square miles in size.*
- *Central City became the county seat when Gilpin County was organized in 1861. The Territorial Legislature granted a city charter to the City of Central in March 1864 – twelve years before Colorado became a state in 1876.*
- *Elevation ranges from 6,960 to 13,294 feet. Most of the land is forested below the tree line and about 52 percent is state or national forest.*
- *Golden Gate State Park and access to the Arapahoe and Roosevelt National Forests bring many visitors to the area.*
- *Tourism is Gilpin County's main job base. Many of the residents commute out of the county for work, while an even larger number of people commute into the county daily to work at, or enjoy, a thriving low-stakes gambling industry.*
- *Gilpin County considers itself rural and endeavors to retain that environment. Their county fair boasts the world's only team "sheep dressing" event.*