APPENDIX A

Colorado State University Cooperative Extension
Annual Forum Program
(attached to hard copy of report)

APPENDIX B

Public Attitudes About Agriculture In Colorado
Executive Summary
(attached to hard copy of report)
(For full report, go to www.ext.colostate.edu/staffres/agreport01.pdf)

APPENDIX C

Plan for Agriculture At Colorado State University 2002-2007
(attached to hard copy of report)
(For full copy, go to http://www.ext.colostate.edu/staffres/agplan02-07.pdf **)**

APPENDIX D

Agency Initiative: Invasive Plant Species

APPENDIX E

e Power Plan of Work Search Results: Collaborating States

APPENDIX F

e Power Plan of Work Search Results: Ag Experiment Station Projects

APPENDIX D
Agency Initiative: Invasive Plant Species – Public and Private Lands.

Background. Introduction of non native plants, including weeds, began when settlers first broke the soil to grow domestic plants for food and fiber and when native grasses were replaced with new and different grasses. The settlers inadvertently also brought weeds; transportation of food and other products helped spread invasive species. Some invasive weeds are even being sold on the Internet now as "new ornamentals" and propagated by well meaning but uninformed citizens.

Farmers and ranchers have been the main line of defense; the impact on production and costs can severely affect their economic survival. The department of transportation, and state and county entities recognize the problem and are part of control and eradication efforts, but their efforts have been inadequate invasive species are still estimated to increase at a rate of 8% per year!

Area of Colorado impacted. Of Colorado's 63 counties, all but 12 are heavily impacted by invasive, non native weeds.

Education and research initiative. The two basic objectives of this initiative are to 1) improve understanding by both public and private landholders of the nature and magnitude of the weed problem and how to recognize invasive plant species, and 2) prevent and control invasive weeds. The best way to manage invasive weeds is to recognize potential problem weeds early, control them before they reproduce and spread, and monitor sites
to maintain follow up control.

Control methods for invasive weeds depend on the use objectives for the land. Integrated weed management approaches have proven to be most effective. Additional research is needed on herbicides; cultural control methods, including grazing management, fertility management, prescribed burns, and re-vegetation programs; physical and mechanical methods, including mowing, tillage, and pulling; and biological control methods,
including the use of host specific insects and plant pathogens.

Justification and budget. Invasive plant species are among the greatest threats to croplands, rangelands, aquatic areas, and wild lands. Weeds degrade the productivity and biological diversity of all ecosystems. They have severe economic impacts on every county in Colorado, from irrigated farms to the dry land plains and mountain rangelands and streams. In some areas, 50% of rangeland is made unusable by invasive and/or noxious weeds. The negative economic impact is the result of lost farm and grazing lands,
increased use of chemical control, degraded water quality, and increased fuel and equipment costs for mechanical weed control. The direct cost to Colorado agriculture is estimated to be 12.5% of production expenditures, about $500 million, not including expenditures by the DOT or counties or for nonagricultural control of weeds.

It is estimated that a two pronged approach, education and research, will require a minimum of $200,000 for research.

APPENDIX E
e Power Plan of Work Search Results: Collaborating States
Search Date: April 1, 2002 Print Date April 1, 2002

17 Plans of Work were found that matched your search criteria. You may review any Plan of Work by clicking on its title.

No Region Selected

Veterinary Extension

Edited by Cleon Kimberling

Last edited on 3/20/2002
States Involved

Wyoming
Utah
Colorado
Nebraska

Campus

"Living on the Land"-small acreage curriculum

Edited by Bob Hamblen

Last edited on 1/11/2002
States involved:

Colorado
Oregon
Neveda
Idaho
Washington
Utah
Montana
California

Certified Greenhouse Professional Program

Edited by Laura Pottorff

Last edited on 10/10/2001
States involved :

Colorado
Wyoming
Utah

Colorado Center for Rural Assistance–Capacity-Building

Edited by Sheila Knop

Last edited on 2/19/2002
States involved: Arizona
New Mexico
Utah

Colorado Engaging Communities in Transition

Edited by Sheila Knop

Last edited on 2/19/2002
States involved: Arizona
New Mexico
Utah

Colorado Row & Vegetable Crop Foliar Disease Management

Edited by Howard Schwartz

Last edited on 1/19/2001
States involved: Colorado (bean & sugar beet)
Nebraska
Wyoming

Commercial Greenhouse Crops

Edited by Steve Newman

Last edited on 10/23/2000
States involved: Colorado
Wyoming

DELETE--Certified Greenhouse Professional Program

Edited by Chris Freeman

Last edited on 2/5/2002
Colorado
Wyoming
Utah

Landhelp

Edited by Delwin Benson

Last edited on 8/17/2001
States involved: Colorado
New Mexico
Arizona
Wyoming

Prairie Dog Conservation and Management

Edited by William Andelt

Last edited on 4/18/2001
States involved: Colorado
Arizona
Wyoming
New Mexico
Nebraska
Kansas
Montana
South Dakota
North Dakota
Oklahoma
Texas

Preserve Warhill Germplasm

Edited by Cleon Kimberling

Last edited on 2/20/2002
States involved: Wyoming
Nebraska
Colorado

Row crop weed management

Edited by Philip Westra

Last edited on 3/20/2001
States involved: Colorado

Turf Production and Management in Colorado

Edited by Tony Koski

Last edited on 2/25/2002
States involved: Wyoming

Northeast

Implementing IRM in Weld Co

Edited by Daniel Kniffen

Last edited on 12/21/2000
States involved: Colorado
Wyoming

Western

4-H/Youth Life Skills Development in LaPlata and Archuleta Counties

Edited by Robert Salzer

Last edited on 3/18/2002
States involved: New Mexico

Enhancing Knowledge of La Plata County Residents as to Interrelation of Nutrition, Food Safety and Health

Edited by Karen Wendy Rice

Last edited on 2/14/2002
States involved: Colorado
New Mexico

Sustainable Agriculture Using Alternative Methods in LaPlata & Archuleta Counties & San Juan County New Mexico

Edited by Kevin Mallow

Last edited on 1/28/2002
States involved: Colorado
New Mexico

APPENDIX F
e Power Search Results: Ag Experiment Station Projects
Search date: April 1, 2002 Print date: April 1, 2002

20 Plans of Work were found that matched your search criteria. You may review any Plan of Work by clicking on its title.

No Region Selected

Improving Certified Seed Potato Production and Management

Edited by Robert Davidson

Last edited on 2/7/2002

Colorado's potato industry is very progressive and rapidly growing. The certified seed potato industry is no exception. Annually, new cultivars, production techniques and equipment are adopted. Additionally, new disease and pest problems, cultivar concerns and grower production problems are seen. Between managing the old problems and identifying and managing the new ones, and working with new technology, the growers and the certification program are constantly being challenged. Because of this, a comprehensive research and extension program focusing on these issues is not only expected, but a necessity, to maintain an active, healthy seed industry. Thus, seed related research that is feasible and problem oriented is ongoing. Extension efforts will focus on integrating management strategies for disease and pest problems that will mitigate or eliminate their threat. Grower contacts and meetings to work with new technologies and production techniques will be emphasized. Finally, internal changes in the Potato Certification Service will be stressed which will make the organization more efficient, utilizing the most up-to-date disease testing, tissue-culture production, and inspection techniques in a cost efficient manner.

Sustainable/Organic Integrated Fruit Production for Colorado

Edited by Harold Larsen

Last edited on 2/13/2002

Commercial fruit production is an important part of the agricultural industry in the Tri-River Area (Delta, Mesa, and Montrose Counties) of western Colorado. Extension and Research Center staff will provide workshops, talks at industry meetings, test plots, on-site visits, and distribution of information via the bimonthly Fruit Growers Newsletter and the voice-messaging Code-A-Phone system. The Extension and Research Center team will develop

and provide educational programs based upon grower needs and will respond in a timely manner to grower concerns and opportunities. Topics to be addressed include production techniques, pest (disease, insect, mite, weed, etc.) control, pesticide selection and use, and crop management options. Growers will learn how to select and use options in fruit production that will allow them to sustain production in both conventional and organic production systems.

Technology Assessment, Applied Research and Information Delivery for Potato Production in Colorado

Edited by Richard Zink

Last edited on 8/16/2001

Colorado's potato industry is likely the most progressive and rapidly growing in North America. Each year new varieties, production techniques and equipment are adopted. While potatoes respond to such changes, old production limiting factors seldom go away. Many of these factors are of disease origin and have complicated etiologies. Moreover, they are often unique to Colorado and require site-specific solutions. Consequently a focused, ongoing effort to understand and solve production-limiting factors is essential in order to sustain Colorado's potato industry. Our potato growers are well aware of this situation, willing to fund research and expect CSU staff to respond accordingly. To this end the following steps will be taken: Develop research proposals that are feasible given current restrictions on time, funds, labor and facilities; pursue areas of research based on real industry needs and personal expertise; and develop meaningful reports that provide growers with useful information. Research and resulting information will have a state wide focus and be delivered through a state wide extension program.

Campus

Alfalfa Variety Testing and Extension Education for Colorado

Edited by Jerry Johnson

Last edited on 4/17/2001

Alfalfa extension education programs are conducted by five different extension/research groups and focused around alfalfa variety trial locations: Wiggins (NE), Yellow Jacket (SW), Rocky Ford (Ark Valley), San Luis Valley, and Fruita (Western slope).

Colorado Environmental Pesticide Education Program

Edited by Sandra McDonald

Last edited on 9/26/2001

The Colorado Environmental and Pesticide Education Program (CEPEP) is a part of the Department of Bioagricultural Sciences and Pest Management in the College of Agriculture at Colorado State University. CEPEP has a unique, interdisciplinary purpose relative to pesticide issues through working relationships, liaisons, and communications with federal, state, and industrial representatives. CEPEP has four primary areas of emphasis – Pesticide Applicator Training (PAT), Pesticide Use and Needs Assessment, Minor Crop Pest Managment with IR-4 (Interregional Research Project #4), and Pesticide Information Transfer.

Colorado Field Crop Entomology

Edited by Frank Peairs

Last edited on 2/26/2002

Provides management information on insect and mite pests of Colorado field crops, including wheat, corn, alfalfa, sunflower, dry bean and millet. Emphasizes up-to-date information and applied research on key pests such as Russian wheat aphid, Banks grass mite and alfalfa weevil. Additional emphasis is placed on timely response to new or rare pest occurrences.

Colorado Integrated Resource Management—Western Center

Edited by Jack Whittier

Last edited on 2/6/2002

To improve the sustainability and profitability of livestock production systems in forage-based, natural resource environments through integrated research and education programs.

Colorado Row & Vegetable Crop Foliar Disease Management

Edited by Howard Schwartz

Last edited on 1/19/2001

My research and extension focus is to study the biology of priority fungal and bacterial pathogens which cause economic losses to commercial row and vegetable crops such as dry bean, onion and potato in Colorado. A component of our program has been to apply modern technology (GPS hardware and GIS

software) to improve disease survey efficiency and accuracy. We have established a statewide network of remote electronic weather stations (in collaboration with the Colorado Climate Center and USDA/ARS) to monitor weather variables that influence crop and pest development and disease forecasting. My project has also emphasized technology transfer of Integrated Pest Management principles and practices via traditional means (newsletters, bulletins, videotapes, meetings, field days) and innovative approaches (DTN satellite, internet, CD-rom) to provide research, teaching and extension personnel with interactive, timely and effective resources to address the needs and concerns of clientele in Colorado and the surrounding region.

Colorado Sheep and Wool

Edited by Steve LeValley

Last edited on 10/5/2001

The Colorado Sheep and Wool program is structured to provide timely researched based information to adult and youth sheep producers of Colorado and surrounding states.
Information provided will enhance and optimize production capabilities through all segments of the sheep industry.

Colorado Water Outreach Program

Edited by Reagan Waskom

Last edited on 2/7/2002

Adequate supplies of clean water are essential to the health and well-being of Colorado citizens, agriculture,
industry, wildlife and the economic vitality of our State. Colorado State University Cooperative Extension provides
research based information and educational programs on water quality, water quantity, water policy, and natural
resource issues related to water use. A team of Specialists from campus and the regions are working together as the State Water Outreach Team to address the water information needs of Colorado.
Special programs include: Agricultural chemicals and ground water protection, Non-point source pollution information and education, Gunnison Basin Selenium Task Force, and a regional (6 state) effort on agricultural non-point source pollution.

Key words: water, water quality, water conservation,

water quality monitoring, watershed, wells, non-point source pollution, irrigation, total maximum daily loads (TMDL),best management practices (BMP), ground water, CAFO

Crops Testing in Colorado

Edited by Jerry Johnson

Last edited on 3/15/2002

Test winter wheat varieties, corn (dryland and irrigated grain as well as silage) hybrids, sunflower hybrids, dry bean varieties, alfalfa varieties, soybean varieties, and winter canola varieties throughout eastern Colorado and coordinate variety testing throughout the state. Winter wheat varieties are tested in 12 eastern Colorado locations, there are 11 dryland and irrigated grain corn test locations in eastern Colorado.

Horticulture & the Green Industry

Edited by James Klett

Last edited on 2/7/2002

In 1993, Colorado Green Industry sales totaled 1.37 billion with a payroll exceeding $555 million and employed over 25,500 jobs in Colorado. This represents about 25% of all of Agriculture in the State of Colorado. Programs are supporting the ever-growing Green Industry in the State of Colorado. It is thought that the Green Industry is now the second largest segment of Agriculture in the State of Colorado.

Project is also helping train Master Gardeners, Green Industry and the general public with same material taught to industry and agreed upon by both Cooperative Extension and Green Industry of Colorado. This is done in many ways including: teaching yearly at ProGreen Expo, Turf and Landscape Field Day, Horticulture Short Course, Planttalk Colorado®, training to specific commodity and professional groups, Turf Conference, Colorado Garden and Home Show, Home and Patio Show, fact sheets, Green Scene Newsletter, technical bulletins, etc.

PLAN PENDING--Information Technology for Colorado Agriculture and Natural Resource Management

Edited by Paul Ayers

Last edited on 2/6/2002

This program on Information Technology for Colorado Agriculture and Natural Resource Management provides education and support in the area of information technologies applied to Colorado agricultural- and natural-resource management situations. This includes the use of global positioning systems (GPS), global information systems (GIS) and precision farming systems (variable-rate application). (9/2000-9/2003)

Precision Agriculture

Edited by Raj Khosla

Last edited on 3/20/2002

My research and extension focus is to study and develop precision agriculture strategies using GPS and GIS that are compatible with farming practices in the irrigated western Great Plains region of Colorado. By doing this I hope to increase farm profitability and enhance environmental protection. This will be done by defining zones within a field that have similar soil characteristics and managing these zones specifically to maximize yield, and minimize inputs. This approach will be compared to more traditional methods of applying fertilizers, pesticides, and weed control. I believe that the management zone approach will prove to be more economical and sustainable, and will lower the potential for environmental degradation. Different methods of defining management zones within a field will also be compared. Three fields located in eastern Colorado have been chosen to develop this approach. My project will also work to provide training in the design and implementation of these new approaches, practices and technology to growers and extension personnel. Technology transfer is a large portion of this research and will be conducted through bulletins, field days, newsletters, meetings, the Internet, and other methods.

Key Words: Management zone, Farm profitability, Sustainable agriculture, Environmental protection

Salinity Work in Colorado's Lower Arkansas River Basin

Edited by Luis Garcia

Last edited on 2/14/2002

The objective of the project around Salinity Work in Colorado's Lower Arkansas River Basin is to continue detailed data-collection activities at the field scale for soil salinity, depth to groundwater, groundwater quality, rainfall amounts, evapotranspiration, and crop yield in ten fields located in the Lower Arkansas River Basin in southern Colorado. The data collected will be

used to determine the severity of crop losses due to salinity and waterlogging using a Geographic Information Systems (GIS) model that is being completed as part of an Agricultural Experiment Station project. This information will also be used to provide insights into the fields scale process for a sub-regional project that is ongoing, as well as to evaluate the impact of changes in agricultural practices on crop yields and water quality. Workshops will be conducted to disseminate the results. (7/1998-6/2005)

Turf Production and Management in Colorado

Edited by Tony Koski

Last edited on 2/25/2002

Turfgrass production and management at all levels, both lay and professional, requires inputs of water, fertilizer, pesticides, and energy. Improper management decisions can be expensive and may negatively impact air, soil, and water quality.

Sustainable turfgrass management

Sustainable turfgrass management seeks to identify methods that will help all producers and managers of turf, both lay and professional, to produce aesthetically pleasing, functionally safe, economically viable, and environmentally friendly turfgrass. It integrates all elements of management - water, pesticides, fertilizers, wastes, energy, economics, etc. - into systems which can easily and economically be used at all levels of turfgrass production and management. Sustainable turfgrass management involves strategies which help the turf manager to select species and varieties, cultural practices, and pest management approaches which reduce costs of purchased inputs, minimize the impact of the system on the immediate and off-site environment, and provide a sustained level of quality and/or profit from turf management.

Turfgrass water conservation

The production and management of turf in the state of 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.

Northwest

DELETE-Sustainable/Organic Integrated Fruit

Production for Colorado

Edited by Harold Larsen

Last edited on 3/20/2002

Commercial fruit production is an important part of the agricultural industry in the Tri-River Area (Delta, Mesa, and Montrose Counties) of western Colorado. Extension and Research Center staff will provide workshops, talks at industry meetings, test plots, on-site visits, and distribution of information via the bimonthly Fruit Growers Newsletter and the voice-messaging Code-A-Phone system. The Extension and Research Center team will develop and provide educational programs based upon grower needs and will respond in a timely manner to grower concerns and opportunities. Topics to be addressed include production techniques, pest (disease, insect, mite, weed, etc.) control, pesticide selection and use, and crop management options. Growers will learn how to select and use options in fruit production that will allow them to sustain production in both conventional and organic production systems.

Southeast

Commercial Vegetable Crop Production

Edited by Michael Bartolo

Last edited on 2/7/2002

Commercial vegetable crop production in the Arkansas Valley.
Keywords: Vegetable varieties, onions, melons, peppers, tomatoes, plasticulture.

Southeast Regional Range-Livestock

Edited by Tim Steffens

Last edited on 9/17/2001

Southeast Regional Specialist POW for range, grazing management, watershed management, livestock, wildlife and endangered species.

Southeast Water Management

Edited by James Valliant

Last edited on 11/21/2000

"Stretching Our Water" is the theme for demonstration and research on water in the southeast region. Demonstration and development of BMPs promote water use that is most cost effective and will improve the quality of the water in the Arkansas River and/or the groundwater basins. These BMPs would also be designed to control and/or reduce erosion and salts in the soils, surface water and groundwater. Projects also look at new and/or alternate crops and at the use of polyacrylamides to reduce erosion and ditch seepage and to increase water holding capabilities of the soil. Other new technology, including rapid salinity mapping, ionized water, draghoses on center pivot systems and surface and sub-surface drainage, are also being demonstrated.

KEY WORDS: Cost effective, water quality,polyacrylamides, salinity, drainage.