

FROM THE GROUND UP

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AGRONOMY NEWS

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FIRST CERTIFIED CROP ADVISER EXAM COMPLETED

The Adams County Fairgrounds was the site for the first Certified Crop Adviser (CCA) exam held in Colorado. One hundred fifty five registrants took the National exam during the morning of February 3, and 159 registrants took the state exam in the afternoon. All applicants will be notified of their test scores in about 6 weeks. **All applicants are reminded that they must complete their application papers and return them to the American Society of Agronomy by July 1, 1995 so their exam scores will count.** Certification can be completed for those who pass both exams.

Applicants at the Colorado test site included fertilizer and chemical salespersons, crop consultants, co-op field staff, and Natural Resources Conservation Service (formerly SCS)

personnel. Two Cooperative Extension field staff members also took the exam. Comments on the exams ranged from tough but fair to very difficult. The National exam generally was considered to be easier than the State exam. Participants must receive a score of approximately 75% to 80% to pass these exams. Cooperative Extension personnel are reminded that the American Society of Agronomy has waived the \$100 registration fee for government employees for the next two National exams. The next CCA exam will be given on the first Friday in February (February 2, 1996).

Four training events were held at various organizations and were sponsored by various organizations during the six-week period prior to the

exam. Training was mainly in preparation for the National exam. Next year we plan to organize training for the State exam as well.

Those who passed both exams and have completed the certification process during this spring will need to begin earning Continuing Education Units (CEUs) per each year after July 1, 1995 (40 CEUs required during a 2-year period). We anticipate that many Cooperative Extension programs currently offered in the subject areas of soil fertility, soil and water management, pest management, and crop production will be used for these CEUs. About half of the required CEUs must be pre-approved by the state CCA Board. Let us know if you are planning programs that you think will be appropriate for CCA credits so that they can be considered for approval.
 □Mortvedt, Waskom, and Apley

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**LICENSED PESTICIDE APPLICATOR
 PRE-TEST SEMINAR**

A pre-test training seminar for individuals planning to take the commercial pesticide applicator examinations will be held on February 27, 1995 at the Madison Hotel in Fort Morgan. This seminar has also been approved for Continuing Education Units (CEUs) by the Colorado Department of Agriculture. The cost is \$25.00 and will cover breaks, lunch, and meeting materials. The following agenda lists the times and CEUs approved. Feel free to attend just the sections that you need. To preregister, contact Kathryn Apley at 303-491-6027. This seminar is sponsored by R.M.P.F. & A.C. Association, Colorado Co-op Council, Colorado Grain and Feed Association, and CSU Cooperative Extension.

<u>Time</u>	<u>Session and CEU Category</u>
8:30-9:00	Registration
9:00-10:15	General, Use of Pesticides - 1 credit <i>Kathryn Apley</i>
10:15-10:30	Break
10:30-Noon	Agricultural Weed Control, Category 103 - 1 credit <i>Kathryn Apley</i>
Noon-1:00 pm	Lunch
1:00 pm-2:30 pm	Agricultural Insect Control, Category 101 - 1 credit <i>Frank Peairs</i>
2:30-2:45 pm	Break
2:45-4:15 pm	Two Concurrent Sessions
Session 1:	Agricultural Plant Disease Control, Category 102 - 1 credit <i>Bill Brown</i>
Session 2:	Stored Commodities Treatment, Category 305 - 1 credit <i>Bruce Bosley</i>

Speakers:
 Kathryn Apley, CSU Extension Specialist Environmental & Pesticide Education
 Bruce Bosley, CSU Extension Agronomist, Morgan County
 Bill Brown, CSU Extension Specialist for Plant Pathology
 Frank Peairs, CSU Extension Specialist for Field Crops
 □Apley

BEST MANAGEMENT PRACTICES

A series of bulletins summarizing BMPs for Colorado agriculture have been compiled by Soil & Crop Sciences faculty and are now available free-of-charge to the public. The purpose of these publications is to acquaint producers with research based practices that may help protect water quality. I will be providing all Extension and NRCS offices with a complete set of these publications later this month. They also will be sent to ag chemical dealers in Colorado. If you would like a limited number of additional copies for producers in your area, contact Gail McKee in the Cooperative Extension Resource Center at 303-491-6198.

Bob Croissant's retirement party will be held at the Longs Peak Room at Lory Student Center. The festivities will be from 3-5 p.m. on March 24, 1995. Come help us celebrate and honor Bob!

The titles of the nine bulletins are:

- XCM-171 Best Management Practices for Colorado Agriculture: An Overview
- XCM-172 Best Management Practices for Nitrogen Fertilization
- XCM-173 Best Management Practices for Irrigation Management
- XCM-174 Best Management Practices for Manure Utilization
- XCM-175 Best Management Practices for Phosphorous Fertilization
- XCM-176 Best Management Practices for Crop Pests
- XCM-177 Best Management Practices for Agricultural Pesticide Use
- XCM-178 Best Management Practices for Pesticide and Fertilizer Storage and Handling
- XCM-179 Best Management Practices for Private Well Protection

If you have any comments on the bulletins or suggestions for improvement, please call me at 303-491-6201. □Waskom

HIGHER NITROGEN FERTILIZER PRICES

Prices for nitrogen fertilizers are significantly higher than in recent years. For example, the price of anhydrous ammonia ranges from about \$300 to \$350 per ton, as compared with \$180 to \$200 per ton during the fall of 1993. Prices of nitrogen solutions also have increased. These price increases generally are related to decreased supplies in the United States as well as in other countries. The closure of some production facilities in the former Soviet Union has decreased their exports. An explosion at an ammonia plant near Sioux City, Iowa also has curtailed the nitrogen supply.

Higher nitrogen prices may suggest to some growers that nitrogen fertilizer rates should be decreased. Producers should carefully evaluate their fertilizer program and their irrigation management before cutting nitrogen application rates. Optimum economic crop yields require adequate supplies of all the required plant nutrients. Decreases in nitrogen rates below the optimum can decrease income beyond the savings obtained by using lower nitrogen rates.

Optimum nitrogen rates should be based on realistic expected crop yields adjusted for residual nitrates in the soil, as well as nitrates in irrigation water. In addition, nitrogen credits from manure applications, incorporated legumes, and mineralization of soil organic matter should be subtracted from the calculated nitrogen rate to arrive at the optimum fertilizer application rate. Many Colorado producers also can greatly increase nitrogen fertilizer efficiency by more careful irrigation management and the use of split

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application of nitrogen fertilizers.

Higher nitrogen prices also increase emphasis on the value of taking soil tests for nitrates in soils. The money invested in these soil tests may save thousands of dollars in nitrogen fertilizer costs by giving proper credit for residual soil nitrates, which may result in lower nitrogen rates. This also may be the year to take subsoil nitrate tests for the same reason. □Mortvedt

GARBANZO BEANS, A POTENTIAL NEW CROP FOR COLORADO

Garbanzo beans (*Cicer arietinum* L.), also called chickpeas, are a pulse crop grown in the U.S. for domestic consumption. Garbanzo beans are classified into two groups including the small seeded "Desi" type and the large seeded "Kabuli" type. The small seeded type is used in soups and cooked products and the large seeded type is very popular in salad bars. The small seeded type are lower in price and are largely imported from Mexico. The large seeded garbanzos are produced in California and the Pacific Northwest; however, large quantities are also imported from Mexico to meet the increasing demand for domestic consumption. Currently the market price for the large seeded Kabuli type is in the mid \$30/cwt range.

Garbanzo bean is a spring seeded drought tolerant crop that grows upright 13 to 24 inches tall. It produces numerous pods that contain one to two seeds each. Yield levels in the Pacific Northwest are in excess of 2,000 lbs/acre. In Colorado, garbanzo beans have not been widely grown, but preliminary observations at Ft. Collins and the Southwestern Colorado Research Center in Yellow Jacket

suggest that nonirrigated yields range from 500 to 1,000 lbs/acre while irrigated yields can exceed 2,000 lbs/acre.

Garbanzos should be planted in solid stands (6 to 12 inch row spacing) in April or early May when the soil temperature approaches 45°. Delayed planting will result in the crop being exposed to high temperatures during the critical flower and pod fill stages. The recommended seeding rate is 60 to 120 lbs/acre, with the lower rate for dryer soil conditions.

The crop is susceptible to several diseases, including seedling damping off caused by soilborne *Pythium*, *Fusarium* wilt and root rot and *Ascochyta* blight. *Pythium* can be controlled by fungicides applied to the seed at planting but *Fusarium* is more difficult to control. *Fusarium* has been a serious problem in California and the Palouse region of the Pacific Northwest. Problems with *Fusarium* usually do not occur in the first few years of production, but tend to develop over time. *Ascochyta* blight caused by the fungus *Ascochyta rabiei* is a very serious disease and problem with *Aschochyta* also tends to develop over time. Symptoms are elliptical-shaped lesions occurring on the stem, leaves and pods, and is spread through infected debris. New varieties resistant to *Ascochyta* blight have been released by Washington State University.

Garbanzo beans do not require large amounts of nitrogen for optimum yield since they can fix a portion of their nitrogen need by N-fixation. The seed should be inoculated with an appropriate strain of *Rhizobium* inoculant prior to planting. Twenty to 40 pound of nitrogen at planting is usually adequate for the crop.

Phosphorous should be applied to soils which test less than 4 ppm in P (sodium bicarbonate extraction), with application rates of 40 and 60 lbs/acre for soil test in the 2 to 4 and 0 to 2 ppm range, respectively.

Garbanzo beans are well suited to dryland production in eastern and southwestern Colorado since they do not require high levels of soil moisture to produce a crop. They are produced extensively in the Middle East where there is inadequate soil moisture to produce other crops. Unlike dry edible beans, Garbanzo beans can be swathed or combined directly, leaving the crop stubble and residue on the soil surface to minimize soil moisture loss and prevent soil erosion during the winter.

If you are interested in experimenting with the crop, consult a local elevator to ensure that you have a marketing outlet. Seed can be purchased from certified seed processors and dealers in Idaho, Oregon, and Washington or you may obtain a partial list of seed dealers by contacting Mark Brick, 303-491-6551, FAX: 303-491-6551, or e-mail mbrick@ceres.agsci.colostate.edu. For information regarding production of garbanzo beans in southwestern Colorado, you may contact Dr. Abdel Berrada at the Southwestern Colorado Research Center (303-562-4255) near Yellow Jacket, CO.
□Brick

WPS TRAINING - APRIL 3 VIA SATELLITE DOWNLINK

EPA Region 8 (Denver) has given a grant to High Plains Intermountain Center for Agricultural Health and Safety (HICAHS) to put on a six hour satellite training for Colorado and

Wyoming on April 3 starting at 9:00 a.m. This is a train-the-trainer program similar to the WPS programs HICAHS did last year throughout the state. People who attended last year's train-the-trainer programs or who will attend this satellite downlink (April 3) will be qualified to distribute training verification cards when training handlers and workers. If you are a certified pesticide applicator, you can still train worker and handlers, but you do not have EPA's authority to distribute training verification cards. The training verification cards are only necessary for workers and handlers who move from one farm to the next and do not want to be constantly retrained.

For more information, contact Kathryn Apley (303-491-6027).
□Apley

MANAGEMENT STRATEGIES FOR REDUCED IRRIGATION WATER SUPPLIES

We have received several question from agents and producers inquiring about cropping options if surface irrigation water supplies are reduced in 1995. As of this writing there are significant concerns regarding the amount of mountain snowpack and availability of surface irrigation water for northeastern Colorado in the 1995 growing season. On the positive side, February and March are typically high snow fall months and the situation may change entirely by planting. However, if spring mountain precipitation remains low, irrigation planners indicate there won't be enough water to fully irrigate all of the irrigated acres with projected surface water supplies, especially if traditional high water use crops (sugar beets, dry

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beans, corn, vegetables, and alfalfa) are grown on all the acres.

Meanwhile, as an irrigated producer, how should you be proceeding with cropping plans for the 1995 cropping season? We hope these suggestion can offer some advice on how to proceed. First, it is still too early to make any permanent decisions regarding cropping schemes for 1995. One should wait at least until March 1, when state snow pack and water supply reports are updated. If supplies still appear low, that would be the time to implement a modification in your cropping scheme for 1995 and consider diverting some acres to lower water use crops. Obviously, one would want to continue to produce your normal acres of high value vegetable and sugar beet crops, even at the expense of fallowing some cropping acres.

The planting of spring grains such as spring barley, spring wheat, and oats should receive strong consideration at this time, as March 1 to 15 is an ideal planting window for spring grains. The advantage of planting spring grains is that they require only about 60% of the seasonal consumptive water use of a fully irrigated corn. Additionally, these crops mature by July when natural precipitation and irrigation water supplies could be extremely limited. These crops should be easily marketed locally. Spring barley and wheat are at risk of becoming infested with the Russian wheat aphid and one should be prepared to monitor and treat with insecticide, if necessary. Contact your local Extension agent if you have specific questions regarding the culture and management of these crops.

One can reevaluate the water supply situation around April 1 as another state water supply report will be due at this time. If water supplies still appear low,

other options may still be available to producers. For example, this may be an appropriate time to invest in irrigation technologies which improve water conservation and water use efficiency, such as irrigation scheduling devices (tensiometers, resistance blocks, atmometers, etc), surge valves, or low pressure sprinkler equipment. The dollar investment in such equipment is generally recouped in just a couple of seasons and provides numerous benefits and flexibility in water management. If you are still planning to produce corn, you may want to consider choosing a more drought resistant hybrid in anticipation of possibly reduced water supplies. Likewise, you may want to consider adjusting your yield goal downward by reducing plant population and nitrogen fertilization. This reduces the water requirement and economic investment in the crop. One may also utilize a limited irrigation strategy, applying irrigation water only during sensitive developmental stages of growth. Much research has shown that water can be limited for corn during early vegetative growth with minimal impact on yield. Available water supplies can be reserved and applied during silking, flowering, and grain fill to realize the maximum benefit of limited water supply. For alfalfa, full irrigation of the first cutting should receive the highest priority. One will have the highest yield and water use efficiency by irrigating for a good first cutting.

We hope these suggestions will help in planning for the 1995 growing season. If you have specific questions about these comments, please don't hesitate to contact us (303-491-6201).

□Shanahan and Cardon

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Sincerely,



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