

Colorado Bean News

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TECHNOLOGY BYTES

NEW BEAN VARIETY - Look for a new pinto bean release from the northwestern states and USDA in the upcoming months. USWA-19 is a high-yielding pinto which has performed well in Colorado State University trials in recent years, and the northwestern states + USDA will probably release it soon for foundation seed production during 1997. That means that we may see a reasonable quantity of certified seed in the region by 1999. Researchers have proposed that this breeding line be named "BURKE" in honor of a retired USDA scientist, Dr. Douglas W. Burke, who contributed greatly to the development of most of our pinto breeding parents and varieties during the last 30 years.

TEKTRAN - Science Update from the October 1996 Issue of Agricultural Research

For the latest information on new technology from the USDA-ARS, check out their global address:

<http://www.nal.usda.gov/ttic/tektran/tektran.html>

About 13,000 summaries of ARS research findings can now be searched in the agency's TEKTRAN database. TEKTRAN is a new online window to ARS research labs - and to farm, food, environmental, and industrial technologies and products of the future. Browsers can conduct a full-text search of the summaries, including titles, keywords, and author information. They can also search by categories such as nutrition, germplasm, pests, and soil management.

The Internet version of TEKTRAN was developed by the Technology Transfer Information Center (TTIC) of ARS' National Agricultural Library in cooperation with ARS' Office of Technology Transfer (OTT) and National Program Staff.

B I C REPORTS - 40 Years of the Bean Improvement Cooperative Reports in Digital Format

In partnership with the Bean Improvement Cooperative (BIC), the National Agricultural Library (NAL) has digitized text from the past 39 annual BIC reports and plans to digitize the 40th volume in early 1997. Using Standardized General Markup Language (SGML), the BIC journals will become a World Wide Web resource, easily accessible and readily searchable.

At this point, only one document at a time can be searched. Once we have a site search engine, all of the BIC journals will be simultaneously searchable. Although we aim to have a finished product by June 30, 1997, it may take a follow up to create a journal database tagged as extensively as we would like. Look for more information on WWW access to the BIC later in 1997.

MAILING LABEL UPDATE
Please send changes to:
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NEW MANAGEMENT FOR THE CDBAC

The Colorado Department of Agriculture would like to share the following information with the dry bean industry in Colorado and elsewhere. Due to Bill's retirement, the CDA solicited applications for management of the Colorado dry bean checkoff committee from a number of interested and well-qualified individuals and firms. The CDA is pleased to announce that Robert Schork will serve as manager of the CDBAC effective January 1, 1997.

THANK YOU!

To Bill Hutchings for his enthusiasm, support, friendship, leadership and vision since the formation of the Colorado Dry Bean Administrative Committee. Bill and his sons in the Denver Grain Inspection have been a liaison for the Colorado dry bean industry, the CDBAC, and Colorado State University over the years as we collectively addressed research, promotion and educational challenges and opportunities.

THANK YOU for helping nurture our organization and industry at the state, regional and national levels. Best wishes to Bill as he enjoys his well-deserved retirement.

WELCOME!

To Robert Schork, a Certified Public Accountant and Certified Data Processor. Robert has an extensive background in accounting, data processing and law, as well as serving as a consultant to trade groups and small businesses. His responsibilities for the CDBAC will include receiving assessments, accounting, setting up board meetings, and responding to telephone inquiries and requests.

For information about CDBAC programs, producers are encouraged to call the manager of the CDBAC, the board member representing their district, or the Market Order Representative (Helen Davis) at the Colorado Department of Agriculture.

The new address of the Colorado Dry Bean Administrative Committee is as follows:

Robert Schork, Manager,
 Colorado Dry Bean Administrative Committee
 1155 So. Havana Street, Suite 11-368
 Aurora, CO 80012

Telephone: 303-639-9600
 800-318-8049
 Fax: 303-639-9600

National Dry Bean Council

Background Information:

The National Dry Bean Council (NDBC) is a private trade association in the United States which represents growers and shippers of U. S. edible dry beans. The NDBC works closely with both the U. S. exporting and foreign importing trades to promote areas of mutual interest in the use, consumption and marketing of edible dry beans worldwide.

The NDBC is an umbrella organization comprised of the following 11 state and regional groups which represent thousands of individual growers and shippers:

- California Dry Bean Advisory Board
- California Bean Shippers Association
- Colorado Dry Bean Administrative Committee
- Idaho Bean Commission
- Nebraska Dry Bean Commission
- New York State Bean Shippers Association
- North Central Bean Dealers Association
- Northarvest Bean Growers Association
- Rocky Mountain Bean Dealers Association
- Washington Bean Dealers Association
- Western Bean Dealers Association

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While NDBC is privately funded, it works closely with the U. S. D. A. in overseas markets, and often co-sponsors activities with the U. S. Government. Including hosting trade missions from foreign countries to visit U. S. production and processing facilities, participating in trade shows worldwide, coordinating trade missions of U. S. exporters and growers to visit overseas markets, and producing educational and promotional literature about the U. S. dry bean industry.

NDBC also publishes some foreign language newsletters and other publications designed to help local importers, packagers and canners better understand and maintain contact with the U. S. dry bean exporting trade.

NDBC has its headquarter's offices in the Washington, DC area. In some markets, such as Spain and France, NDBC also has in-country representatives to facilitate activities and dialog between the U. S. and overseas trade. NDBC is a resource for information on U. S. exporters, overseas importers, U. S. dry bean varieties, the role of U. S. grown beans in international food relief efforts and other trade policy issues.

For more information, please contact:
National Dry Bean Council (NDBC)
6707 Old Dominion Drive, Suite 315
McLean, VA 22101

Telephone: 703-556-9305
Fax: 703-556-9301
E-mail: NDBC@internetMCI.COM

Educational Information:

The NDBC distributes an informational bulletin on dry bean varieties and uses, and the following information on bean types grown in Colorado was extracted from one of the NDBC bulletins that promotes beans to Food Assistance Programs:

- Black beans (Turtle Bean, Frijoles Negros) are preferred in Central and Latin America, the Caribbean, and upscale restaurants in North America. Cooking methods include: in Brazil as Feijoada (thinly sliced meats served with black beans & other side dishes - rice, kale, collards, orange slices, hot peppers); in Mexico as bean burritos and refried beans; in Cuba as black bean soup, Morros y Cristianos (black beans & white rice); in Costa Rica as Gallo Pinto (fried black beans & rice = national breakfast).
- Great Northern beans are used in baked bean dishes, as a substitute for any white bean.
- Kidney beans are used in dishes like Chili Con Carne which stand up to robust taste.
- Pinto beans (Rattlesnake beans, Red Mexican beans, Mexican strawberries) are served with rice or in soups, stews, refried beans, Chili Con Carne.
- Pink beans are used in any dish calling for pintos; soups, stews, refried beans, Chili Con Carne.
- Red beans are preferred in Central and South America; are used in Mexican and southwestern U. S. cuisine; can replace kidneys, used in Chili Con Carne, red beans & rice, Creole/Carribbean cuisine.

U. S. DRY BEAN CROP OUTLOOK

Excerpts from BEAN MARKET NEWS
 Source: Economic Research Service, USDA, Nov. 1996

During the 1996/97 season, the U.S. dry edible bean market will be characterized by a 13 % smaller crop, reduced stocks, and higher prices. Total 1996 dry bean production is estimated at 27 million cwt. Lower production of navy, pinto, and black beans is likely and will outweigh larger output of great northern and red kidney beans. North Dakota is again the leading producer of dry beans with 26% of the crop. Looking ahead, with reduced output and lower stocks this year, prices are expected to rise through 1997 and signal increased area and production in 1997.

The United States is the 5th leading producer of dry edible beans in the world (behind China, India, Brazil, and Mexico), and U.S. harvested area for dry beans has been slowly trending upward for the past 15 years. In 1996, area for harvest was down 10% from a year ago due to low market prices for most major bean classes the previous season, poor weather in some places, and very strong prices for crops like corn and soybeans, which compete with dry beans for area.

As a net exporter of dry edible beans, the U.S. is a major player in the world dry bean market, ranking 2nd in terms of export volume behind China. The top U.S. markets include the United Kingdom, Japan, Algeria and Mexico. Based on total dry bean movement during the first 3 quarters of 1996, plus the

prospects for declining supplies and higher prices for the rest of the year, dry bean export volume is likely to remain at or below year-earlier levels for the next several months.

Dry edible bean use peaked during World War II at 11 pounds per person before beginning a long-term decline that bottomed out in the early 1980's. Despite increasing in 1995, per capita use of dry beans appears to have reached a plateau in the last few years. Average per capita use appears to have flattened out since 1993 at 7.5 pounds. With large supplies and lower prices in 1995, per capita dry bean use is estimated to have risen about 8% to 7.9 pounds. However, use will likely decline in 1996 with reduced output and higher prices. Pinto beans continue to account for the largest share of dry bean use - about 40%.

A cursory analysis of domestic dry bean sales suggests that somewhere around ¾ of dry edible beans are sold through retail channels, with the remainder moving through the food service industry. In 1995, supermarket sales of canned (except soups) and dry-bagged beans totaled about \$ 925 million and would likely exceed \$ 1 billion with soups included. The data suggest that the equivalent of about 15 million cwt of dry edible beans were sold through supermarkets, of which 2.5 million cwt were in dry-bagged form.

USDA Crop Report

Excerpts from the Colorado Agricultural Statistics Service, Lance A. Fretwell (1/97)

U. S. A. Production by Market Class (cwt)			
Class	1994	1995	1996
Pinto	12,741,000	11,349,000	11,912,000
Navy	5,291,000	7,319,000	5,846,000
Great Northern	1,645,000	2,176,000	2,220,000
Light Red Kidney	1,347,000	1,316,000	1,004,000
Dark Red Kidney	1,461,000	925,000	942,000
Black	1,462,000	2,305,000	1,368,000
Cranberry	419,000	575,000	501,000
Blackeye Pea	842,000	1,091,000	576,000
Garbanzo	328,000	473,000	507,000
Pink	815,000	652,000	535,000
Small Red	773,000	745,000	405,000
Small White	164,000	163,000	113,000

CSU - BEANCOFT 1996

Collaborative On-Farm Tests of Pinto Bean Varieties

As part of what may have been the largest dry bean variety testing effort ever undertaken in the region, thirty-one tests were conducted in northeastern Colorado and western Nebraska during the 1996 growing season to assess the performance of new pinto bean varieties under farm conditions. The main objective was to help bean producers make better variety decisions based on unbiased and reliable variety performance information obtained under commercial field conditions. The second objective was to encourage cooperation among bean seed companies, bean processing companies, university personnel, and bean producers for testing appropriate technologies, including new varieties.

Jerry Johnson, CSU extension specialist; Howard Schwartz, CSU extension pathologist, and Mark Brick, CSU bean breeder; organized the trials in Colorado while David Nuland headed up the effort in Nebraska. The success of these collaborative on-farm tests of bean varieties, acronym BEANCOFT, depended on Colorado State University Cooperative Extension agents Ron Meyer, Bruce Bosley, Jerry Alldredge, Jim Zizz, and Gary Lancaster who identified and worked with bean producer collaborators to conduct these single-replicate tests in long, side-by-side, strips. In Colorado, we are thankful for the efforts of the seven 1996 BEANCOFT collaborating growers: Steve Scott (Burlington); Rod Rehnquist (Julesburg); Jim Lenz (Wray); Dallas Shafer (Holyoke); Steve Bruntz (Wiggins);

Leonard Ditter (Lucerne); and Mark Spaier (Johnstown). Jerry Haynes of Jacks Bean in Holyoke was also very instrumental in BEANCOFT success.


Three bean seed companies each donated 900 lbs of seed for testing in seven Colorado locations, twenty-one Nebraska farms, and Wyoming location. The five varieties were also included in the Colorado small-plot bean varieties trials which accounted for three of the nine Colorado results. Seed for the Idaho Seed Bean Company variety, Apache, an early-maturing, rust-resistant variety was donated by Jacks Bean. Asgrow Seed Company donated the seed of Vision, a full-season, rust-resistant variety. Rogers Brothers furnished the seed of RNK 179, a full-season variety resistant to bacterial brown spot. Seed of Chase and Bill Z, two public varieties, was provided by University of Nebraska researchers. Chase is a full-season, rust-resistant variety that has performed well in Colorado performance trials. Bill Z is a pinto bean industry standard, susceptible to many prevalent strains of rust.

Results and Discussion

Two general observations characterized the BEANCOFT results: 1) varieties responded differently at each location, and 2) there was little difference among variety yields averaged over locations. Grain yields are reported in pounds per acre adjusted to 14% moisture content.

Figure 1 graphically depicts the average yield of the five varieties over all 31 BEANCOFT tests. The least significant difference (LSD) is generally used to decide if yields are significantly different from one variety to another. If the difference in yield between two varieties is greater than the LSD value, they are judged to be significantly different from one another. Chase, RNK 179, and Vision, were significantly higher yielding than Apache and Bill Z. Nevertheless, there was much variation among varieties from location to location. This comparison of average yields using LSDs is not very useful for making future predictions.

A probability approach to the analysis is more revealing because it combines the average yield with a measure of variability in yield from location to location (standard deviation of each variety) to obtain an estimate of future variety performance based on the probability of obtaining different yield levels. The results of this approach when applied to the yield data for all 31 locations are shown in Table 1. In low yielding environments, RNK 179 has the highest probability, 97.5% chance, of yielding 1500 lb/ac or more. In the same environments, Apache has the lowest probability, 91%, of yielding 1500 lb/ac or more. A change in probability rank becomes obvious at different yield levels. For example, Chase has the highest probability of producing 2400 lb/ac or more, and Bill Z



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1996 MEXICO BEAN SURVEY

In mid-November, a Colorado team of bean experts (Max Hinrichs - Finora Co. in Englewood, Randy Mathews - Agland in Eaton, Rod Hutchings - Colorado Dry Bean Administrative Committee in Aurora, and Mark Brick - Colorado State University in Fort Collins) toured northern Mexico bean production areas for the Rocky Mountain Bean Dealers

Secondly, regions in southern Mexico produce beans that are marketed locally and influence total commercial market demand. This amount appears to be small, but with high corn prices farmers will be tempted to shift acreage from beans to other crops such as corn or wheat.



Association to estimate the quantity and quality of the summer dry bean crop in the states of Chihuahua, Durango and Zacatecas. These 3 states will again produce about 70% (7.7 million cwt) of Mexico's total annual dry bean crop. Bean production for the summer crop appears to be excellent with good quality.



Another consideration that would suggest there will be a greater shortage of beans in Mexico than the Team's estimate, is the low estimate they were given for domestic consumption. Government officials have used the 1.2 million metric ton/year (26.455 million cwt) domestic consumption figure for over five years without adjusting for population increase.

The Bean Survey Team has projected the summer crop to be at 17.595 million cwt, the largest crop in recent history. Officials estimate that another 7.7 million cwt will be produced in the winter crop for a total production of 25.3 million cwt.



The increase in population coupled with the devaluation of the peso in recent years, has reduced the buying power of the average wage earner in Mexico and increased the demand for nutritious inexpensive food. The Team was told that pasta

With an estimate of 1 million cwt seed carryover for planting in 1997, 24.3 million cwt will be available for consumption. Using consumption figures for the past 5 - 8 years, domestic consumption is projected at 26.455 million cwt; suggesting there may be a 2.144 million cwt shortfall for 1996-97.

has been used by many to provide a cheap source of protein in the human diet in Mexico, but cultural practices dictate that beans will remain the most important and cheapest source of nutritious food in Mexico.



However, the team cautioned that we must consider several other factors that influence the consumption

and production of beans in Mexico. First, summer production of beans also occurs in the state of San Luis Potosi and other regions in the highlands of Mexico that are not included in these figures.



Continued from page 5
 the lowest probability. At the 3000 lb/ac level, Vision has the highest probability. To use this approach for variety selection, bean producers are encouraged to find the yield level that best approximates their long-term average yield and to compare variety probabilities at that level, keeping in mind that these comparisons are based only on yield and may neglect important quality or local environmental or disease considerations.

In conclusion, all of the varieties entered in BEANCOFT 1996 are good varieties. There were no clear winners and no clear losers because of so much variation in yield among varieties from location to location. BEANCOFT 1996 was a pilot project that was highly rewarding but more expensive and time-consuming than expected. There are no plans to re-conduct BEANCOFT trials until new varieties are developed that warrant this level of effort.

Table 1. Probabilities of obtaining or exceeding yield level by variety.

Yield Level	Apache	Bill Z	Chase	ROG 179	Vision
1500	0.910	0.943	0.974	0.975	0.948
1600	0.881	0.916	0.960	0.960	0.928
1700	0.845	0.879	0.940	0.937	0.901
1800	0.802	0.833	0.913	0.906	0.868
1900	0.754	0.776	0.877	0.865	0.828
2000	0.699	0.710	0.833	0.812	0.781
2100	0.640	0.636	0.779	0.748	0.728
2200	0.577	0.557	0.717	0.675	0.669
2300	0.512	0.475	0.647	0.594	0.605
2400	0.446	0.395	0.572	0.509	0.538
2500	0.383	0.318	0.494	0.423	0.470
2600	0.322	0.249	0.416	0.341	0.403
2700	0.265	0.189	0.342	0.266	0.339
2800	0.214	0.138	0.273	0.200	0.279
2900	0.170	0.098	0.212	0.145	0.225
3000	0.131	0.067	0.160	0.101	0.177

Table 1. Probabilities of obtaining or exceeding a specific yield level by variety.

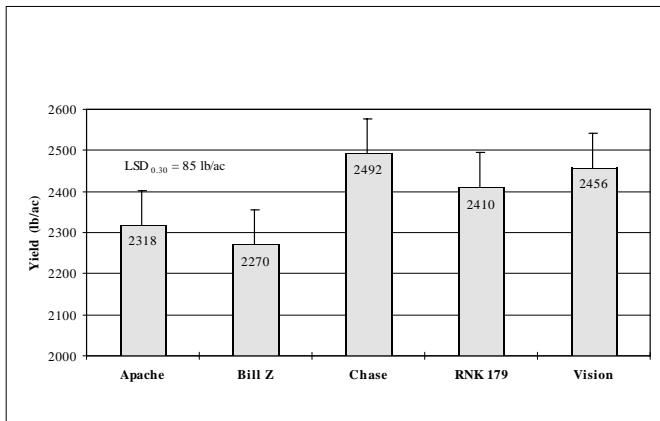


Figure 1. Average yield of five pinto bean varieties over all 31 BEANCOFT locations.



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PLANNING YOUR 1997 BEAN CROP

Mark A. Brick, Colorado State University Bean Breeder

It's not too early to start planning the 1997 bean crop. Now is the time to take soil samples and consider which bean varieties you want to grow next year. With relatively moderate bean prices and high corn and wheat prices, many growers may concentrate on corn and wheat production. However, the long term future of pinto beans looks good for the U.S. producers. Based on USDA statistics, total U.S. dry bean production is down in 1996 compared to 1995 or 1994, while domestic consumption is slightly higher than five years ago, and the export market remains firm.

Sampling the soil to determine the soil pH, salt content, organic matter, phosphorus, potassium, and micronutrient content should be taken from the tillage zone, 8 inches or deeper. Samples for soil N should be taken down to 12 inches in the soil profile.

The appropriate number of samples will depend on the amount of variation in the field. Large fields that are very uniform may need only one or two samples per acre. Combine the samples collected within each field or sampling area, mix thoroughly and submit a representative subsample to a reputable soil testing laboratory. Fields that vary in soil texture, slope or other factors should be partitioned into smaller areas which can be fertilized according to their specific nutrient needs. If a field is partitioned, it is essential to draw a good field map with the areas clearly numbered or labeled to correspond with the soil

samples taken in that portion of the field. Fields with variation should be more extensively sampled than more uniform fields.

Now is a good time to select the varieties to plant in 1997. Results from the Colorado State University Crop Testing Program are available from Cooperative Extension offices, on the Internet, and have been published in the Fall Issue of COLORADO BEAN NEWS. Results from numerous strip trials conducted in eastern Colorado and western Nebraska are summarized in this issue. Among the newer varieties such as Apache, Chase, Vision, Maverick and others, all have some weakness.

Apache appears to be one of the best, combining acceptable maturity, rust resistance and good seed quality; however, it is susceptible to bacterial brown spot and has average yield performance. Chase has high yield potential, rust resistance and broad spectrum disease resistance, but is somewhat late and has poorer seed quality. Vision has high yield potential, rust resistance and excellent upright architecture, but is late maturing. Maverick has upright growth habit, rust resistance, but is somewhat late and has moderate seed quality and yield. A new experimental line from the USDA, USWA 19, appears to have excellent potential because it combines acceptable maturity, good seed quality and high yield potential, but seed supplies will not be available in 1997. Some of the established varieties such as Bill Z, UI 126 and others still perform better than the newer varieties if a good integrated pest management program is utilized during the production cycle.

Walton 1/4 page Blue/Green



Chickpea Variety Performance at Ft. Collins

By Mark A. Brick, Colorado State University bean breeder

Chickpeas (*Cicer arietinum* L.), also called garbanzo beans, are a large-seeded legume popular in salad bars and soups. Most chickpeas produced in the US are grown in the Palouse region in the Pacific Northwest or the central valleys of California, however, much of the domestic consumption is imported from Mexico and Turkey. Garbanzo beans are a cool season crop planted in the spring in the Palouse and in the winter in California. Most commercial varieties grown in the US were developed at either Washington State University or University of California-Davis.

A study was conducted for the past two years at the Agricultural Research, Demonstration and Education Center, Ft. Collins, CO to compare yield levels of four commercial garbanzo cultivars with support from the Colorado Dry Bean Administrative Committee. The plots were planted on two planting dates under irrigated and non-irrigated conditions. The cultivars were all large seeded Kabuli types, and included 'UC-15' and 'UC-27' from the University of California-Davis, and 'Sanford' and 'Dwelly' from Washington State University. The trials were planted in 30 inch rows on April 6 (early planting) and April 27, 1995 (late planting) and April 9 (early) and May 3, 1996 (late). The irrigated plots received approximately 8 inches of supplemental water with an overhead sprinkler irrigation system in 1995 and about 14 inches in

1996. The preemergence herbicide Dual 8E was applied at 2 lbs/acre on April 1 during both years. A granular form of *Rhizobium* appropriate for garbanzo beans was applied with the seed at planting.

Seedling emergence and establishment was delayed by cool weather during April and early May in 1995. In 1996 seedling emergence and stand establishment was excellent. Flowering and pod fill occurred during late June through early August. The plots were relatively disease free, but a few plants expressed Pea Enation Mosaic Virus symptoms (confirmed by Dr. H. F. Schwartz). The virus significantly reduce yield of the infected plants, however infection intensity was very low. Seed yield was evaluated from approximately a 20 ft linear section of row in 1995 and from two rows 27 feet long in 1996. The dryland plots were harvested in early to mid August and the irrigated plots were harvested in mid September. Plots were adjusted for missing areas in the row and yield levels reported herein are likely 10 to 20% higher than what would be obtained in a farmers field.

RESULTS:

Dryland Trials

Yield results are shown in Table 1. Yield levels among varieties were not statistically different in either year. UC-27 had higher observed yield than the other entries in the early planted plots. In the late planted plots, yield levels were very similar among varieties. Mean yield in the early planted plots was higher than later planted plots in both years. Among the varieties, UC-27 had the highest observed yield across planting dates and appeared better adapted than other varieties.

Mean seed size was evaluated from unscreened field run seed, and ranged from 56 to 67 seeds/oz. UC-27 had the largest seed, at 56 seeds/oz. Seed color appeared acceptable, but was not evaluated by a garbanzo seed expert or marketer. Based on the yield and seed quality evaluations, UC-27 appears to be the best variety under the dryland test conditions in this evaluation and planting in early April is superior to late April or early May. .

Irrigated Trials

In the irrigated trials, seed yield was lower than in the dryland trials in 1996. The plots received enough irrigation water to stimulate excessive vegetative growth and caused the plants to flower late and had reduced pod set. In 1995, yield levels in the irrigated trials were similar to the dryland trials and in 1996 the dryland plots had higher yield than the irrigated plots. These results indicated that garbanzo beans prefer to be minimally irrigated in our region. Among varieties, Sanford and Dwelly had consistently higher yield than UC-15 or UC-27 across years and environments under irrigation. Yield levels in



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the late planted trials were higher than the early planted trials in 1996, the opposite of 1995. In 1996, mean seed size ranged from 69 to 77 seeds/oz. among varieties. Seed sized less than 58 to 60 seed/oz. are unacceptable for No. 1 commercial garbanzos, hence none of this production would qualify for canning quality. The low seed yield in the irrigated trials

compared to the dryland plots, coupled with small seed, suggest that garbanzo beans need minimal water for production in our region and would require careful irrigation if grown under irrigation. Based on our results, garbanzo beans appear to be better adapted to dryland conditions or minimal irrigation in our region.

Table 1. Yield of four chickpea varieties planted early (April 6 to 9) and late (April 27 to May 3) in irrigated and non-irrigated environments at Ft. Collins, CO during 1995 - 1996*.

	Dryland				Irrigated			
	Planting Time							
	Early		Late		Early		Late	
	Yield lbs/acre							
	1995	1996	1995	1996	1995	1996	1995	1996
UC-15	944	872	951	823	1147	479	1224	722
UC-27	1022	1047	853	753	981	375	1079	538
Sanford	854	934	737	680	1163	830	639	780
Dwelly	853	968	784	485	1070	615	870	937
Mean	918	955	832	685	1090	575	953	744

* Research supported in part by the CSU Agricultural Experiment Station and the Colorado Dry Bean Administrative Committee

SIGNATURE BEAN DISH

By H. F. Schwartz, CBN Editor

On October 18, 1996 the Colorado Dry Bean Administrative Committee joined representatives of the Colorado Department of Agriculture for a special presentation of bean signature dishes at the Green Gables Country Club in Lakewood. The CDBAC and CDA had been approached by the Culinarians of Colorado, a chapter of the American Culinary Federation, in regards to a unique mentoring program to match Colorado food manufacturers and commodity organizations with leading chefs in the state. The chefs donate their time and talents to serve as mentors to help support the culinarian's educational foundation and mission.

Depending upon the level of support, the CDBAC obtains the following: development of 1 to 3 recipes utilizing a bean product, promotion and advertising of the recipes in restaurant circles, and participation by the chef at a specified event or trade show.

We met with the Green Gables Executive Chef, Robert Sherlock, who was very entertaining and genuinely excited about utilization of beans and creation of innovative bean dishes for the discerning palate. Joining us for our luncheon experience were Colorado Agriculture Commissioner Tom Kourlis and ACF Executive Director Joan Brewster. The 4-course luncheon consisted of the following delicious entrees:

Soup - roasted eggplant + pinto bean puree; **Salad** - Mesculine + five-bean salad (sampling of 5 heirloom beans such as Calypso, Anasazi, Rattlesnake, Christmas Lima); **Entree** - breast of chicken stuffed with spinach served with black bean sauce + quinoa pilaf; and **Dessert** - ice cream folded in a white bean crepe.

BEAN SEED SURVEY

During late 1996, a survey on seed beans was distributed to 40 commercial bean dealers in Colorado by H.F. Schwartz and M. A. Brick to solicit feedback on pinto seed quality and needs for commercial producers and processors. A 45% response was obtained and is summarized as follows:

- In terms of 1996 acreage planted, the top varieties were ranked as follows: Bill Z (28,900 acres); Othello (14,510 acres); Chase (8,260 acres); Olathe (4,540 acres); NW 410 (3,400 acres); Buckskin (2,150 acres); RNK 179 (1,980 acres); UI 196 (1,540 acres); Arapaho (1,400 acres).
- The most important criteria used to purchase certified bean seed are: *QUALITY* and *PRICE*.

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- The most important attributes of quality bean seed are: size, purity, germination, clean, uniform seed treatment, weed-free, disease-free, and no splits.
- Future pinto varieties should possess: *High Priority* - high yield + white mold and rust resistance; *Moderate Priority* - seed quality/size + bacterial blight and Fusarium wilt resistance; *Low Priority* - upright plant type and tolerance to salt.
- More than 2/3 of the respondents agreed that:
 - there are too many varieties on the market to choose from
 - breeding programs place too much emphasis on yield, and not enough on seed quality factors
 - certified seed is a value for the producer

PUBLIC ATTITUDES ABOUT AGRICULTURE IN COLORADO

Excerpts from a recent study that was undertaken by the Colorado Department of Agriculture, the Ag Insights advisory group and Colorado State University's College of Natural Resources. The purpose of the study was to better understand how Coloradoans generally perceive agriculture in the state and what they think about a number of specific issues related to farming and ranching in Colorado. A random sample of 951 Eastern Plains, Front Range and Western Slope residents were

selected for the 12-minute telephone interview.

- Nearly 80% of those surveyed think agriculture is very important to the quality of life in Colorado.
- Almost 90% believe that Colorado agriculture provides food at a reasonable price.
- The majority of Colorado residents (84%) think that maintaining land and water in agricultural production is very important.
- Coloradoans favor using a combination of incentives (46%) and regulations (38%) to encourage land owners to maintain agricultural land and water in production in Colorado and discourage the sale of farmland for development.
- Colorado agriculture is seen as usually responsible (44%) in protecting the environment and rated almost always responsible by 16% of those responding.
- Nearly 80% feel that agricultural chemicals are at least sometimes necessary to produce enough food for people, while almost 18% think agricultural chemicals are almost never necessary.
- Over half (53%) believe that the food produced in Colorado is almost always safe, and 37% perceive food produced in Colorado to be usually safe.

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Idaho Seed Bean

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- There is moderate agreement (62%) that current farming practices do a good job of providing for wildlife, conserving soil and water, and that public land grazing is done appropriately.
- Respondents indicate strong to moderate support (88%) for the use of public funds for farmers who participate in conservation programs, and incentives for those who improve environmental quality.
- Coloradans (72%) say that, in a dry year, water for agriculture should be higher priority than water for instream flows, rafting and fishing, lawns and landscaping.

For free copies of the Executive Summary or the full report at \$ 5.00, please contact:

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BEAN RECIPES

By Ellen K. Warren - Dove Creek, Colorado

It's that time of the year when we come in from that finger-nipping and red-cheeked cold to a welcomed bowl of steamy hot bean soup or stew. I'd like to share a couple of my favorite winter bean recipes to help chase away the cold.

BEEFY BEAN SOUP

- | | | |
|---|------|--|
| 1 | lb | pinto or Anasazi beans |
| 2 | T | vegetable oil or bacon drippings |
| ½ | t | pepper |
| 1 | | large onion, chopped |
| 3 | T | parsley, chopped (or 1 T dried) |
| 3 | T | celery leaves, chopped (or 1 T dried) |
| 3 | t | salt (or 2 t beef boullion) |
| 1 | cup | celery, chopped |
| 2 | cups | tomato or V-8 juice |
| 3 | | hefty beef shanks or 1 lb boneless stew meat |
| 8 | cups | water |

Thoroughly rinse beans and cover with 6 cups of water. Bring to a full boil for 2 minutes, remove from heat and let stand for an hour. Brown beef shanks or stew meat in oil/drippings. Pour off drippings. Measure liquid from beans, add water to make 8 cups, add this liquid, salt and pepper, and beans to beef shanks/beef stew meat. Bring to a boil, reduce heat to a simmer, cover for 2 hours. Add celery, onion, and tomato juice. Cook an additional 30 minutes, remove shanks and cut up meat, return meat to soup and add celery leaves and parsley. Cook another 20 minutes or until beans and beef are tender.

PINTO BEAN - SAUSAGE BAKE

- | | | |
|-----|------|---|
| 1 | lb | pinto or Anasazi beans, soaked in water |
| 1 | lb | smoked sausage or kielbasa, cut into pieces |
| 3 | | large onions, chopped |
| 3 | | large garlic cloves, minced |
| 2 | T | chili powder |
| 3 | cups | canned, crushed or chopped tomatoes (plus liquid) |
| 1 ½ | t | salt |
| 1 | pkg | 8 oz of unsalted tortilla chips, crushed |
| 2 | cups | Monterey Jack or Colby/Jack Cheese, shredded |

Drain beans of water. Place in large stockpot. Add water to cover by 2 inches. Bring to a boil, lower heat and let simmer for 1 or more hours, or until beans are near tender. Drain, but reserve 1 ½ cups of bean liquid. In the meantime, brown cut-up sausage in a large non-stick skillet, drain all but ½ T of the drippings. Add the onion to the skillet. Saute over medium heat for about 10 minutes or until onion is translucent. Add garlic and chili powder, saute a minute or so more, stir sausage, onion mixture, crushed tomatoes and juice, salt and reserved bean liquid into beans. Cover and simmer 1 hour or until beans are tender.

Preheat oven to 350 F. Divide 1/3 of the crushed tortilla chips between two 9 x 5 x 3 inch loaf pans. Divide half of the bean mixture between the pans to cover the chips. Top with another 1/3 of the chips and half of the cheese. Cover with the remaining bean mixture, crushed tortilla chips and cheese. Return to the oven for a few minutes until the cheese is melted and the casserole is well-heated throughout. ENJOY!

[Anasazi Beans is a registered trademark of Adobe Milling]

An Economic Profile of Colorado Agriculture

by Elizabeth Hornbrook and Dr. Dana Hoag, Dept. of Agr. and Resource Economics, Colorado State University

The financial health of farms and ranches is relatively good compared to years past, according to a recent Colorado State University Cooperative Extension economic profile of Colorado's agricultural industry.

Agriculture can be defined in three ways:

- farm production, as associated only with farms and ranches;
- agribusiness, which adds agricultural inputs, processing and marketing to farm production; and
- the farm and food system, which adds wholesaling and retailing to agribusiness activities.

Financial health, agribusiness dependency, crop and livestock concentration and dependency on government payments were considered in the economic profile of

Colorado's agricultural industry. Each of these measures are used for the various definitions of agriculture.

The recent price squeeze in the cattle market serves as a reminder of the importance of financial health in weathering financial hard times. Generally, farm and ranch businesses are not considered at risk until the debt/asset ratio reaches 40 percent or more. By this standard, Colorado farmers and ranchers are doing well.

The total value of assets held by farmers and ranchers was 17.2 billion in 1993, up 14 percent from 1987; farm debt has decreased slightly. Likewise, the debt-to-equity ratio decreased from 25.6 percent in 1987 to 20.2 percent in 1993. This compares to the United States average debt-to-equity ratio of 19 percent.

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The average Colorado farmer's owner equity increased from \$446,000 in 1987 to over \$563,800 in 1993. Although this is higher than the national average of \$373,000, the number of farms has decreased, possibly due to a low return on assets of 3.5 percent in 1987.

Production agriculture alone does not fully represent the economic importance of farming and ranching. Other industries depend on production agriculture, such as fertilizer sales, food processing and farm machinery production. It's important to know the degree to which a county relies on agricultural businesses for its economic well-being since this business may influence local attitudes about taxation and other policies that support the industry. Agribusiness dependent counties are those that receive over 20 percent of total county income from agribusiness industries. Agribusiness important counties are those that receive between 10 percent and 20 percent of total county income from agribusiness industries.

Agribusiness dependence and importance also can be measured by absolute contribution, rather than by percentage contribution. Some counties have large agribusiness sectors, but they are not dependent on agriculture, since they also have large non-agricultural sectors. Eleven of Colorado's 63 counties were agribusiness important and nine were agribusiness dependent in 1992. Therefore, over 31 percent of Colorado's counties were either agribusiness dependent or important, down significantly from 1987, when over 52 percent of the counties were either agribusiness dependent or important.

The relative importance of agriculture has fallen for different reasons. In some cases agribusiness income has fallen. More often, agribusiness income simply has not increased as rapidly as other industries in the county. From 1985 to 1994, the population of Colorado increased by more than 400,000. Although the majority of the growth occurred along the Front Range, there were 80,000 new people in rural areas that fueled growth in non-agricultural industries. In four of 13 counties that dropped from agribusiness important status, agribusiness income remained constant or increased but total county income doubled or even tripled.

Most of the large agribusiness counties are metro areas,

where processing, marketing and shipping occur. Many of the counties with more relative reliance on agribusiness are in rural areas. For example, agribusiness income in Jefferson County is the largest in the state, but is 30th in relative importance compared to other counties. On an absolute size basis, 1992 figures revealed Jefferson County has the largest agribusiness sector with over \$400 million in annual income. It was followed by Weld, Denver, Morgan, Adams and Arapahoe counties, all of which exceeded \$100 million per year. In contrast, other counties that have smaller agribusiness sectors, such as Kiowa, Baca, Yuma, Washington and Cheyenne, rely more heavily on agribusiness' relative contribution.

The number of farms and ranches has decreased from 27,000 to 25,500; total land in farms decreased from 34 to 32.8 million acres; and the average farm size has increased from 1,259 to 1,286 acres between 1987 and 1992. The decrease in total land in farming and increase in average farm size has contributed to concentration in farming and ranching. Concentration, in this sense, is shown by comparing the percentage of farms that are a given size (number of animals or acres) to the percentage of sales produced in that size category.

Colorado is experiencing some concentration in the cattle industry. Producers who sell under 100 animals each year make up 78 percent of the farms, but only account for 6 percent of sales. In contrast, those farms and ranches with more than 1,000 animals sold annually account for 78 percent of sales but are only 2 percent of the producers. Concentration in cattle is primarily due to the marketing process, where cattle move from pastures to feedlots over their lifetime.

The concentration in the production of grain is much less than concentration in cattle. Large farms of over 500 acres account for 85 percent of sales, even though they make up only 60 percent of the producers. Historically, farmers have received such government payments as price and income supports on wheat, corn and other crops. Due to the changes in the 1996 Farm Bill, these payments will be phased out systematically over the next seven years. Understanding the relative contribution of government payments to a county may help in future farm production and agribusiness planning.

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Since the inception of the farm program, counties have had a varying degree of dependency on government payments as part of their income. The amount of government payments a county received depended greatly on the success of the harvest, market prices and politics. Therefore, it was not uncommon to have varying levels of government payments.

Total contributions of government payments to county income are shown in Table 3. In 1993, government payments to Colorado farmers totaled \$250 million. This is substantially lower than in 1987, when farmers received \$342 million in government payments, or 43 percent of all farm income. In spite of this decrease, government payments still made up about 23 percent of net farm income in 1992.

Over 60 percent of Colorado counties receive less than one-fourth of their income from the government. Only 6 percent receive 75 percent or more from government payments. Fortunately agribusiness income is a very

low percentage of total county income in counties like Moffat, Arapahoe, San Miguel and Sedgwick, which receive 75 percent or more of farm income from government payments. Nevertheless, 32 percent of the counties have received 25 percent to 74 percent of net farm income from government payments. For example, Kiowa County is heavily dependent on agribusiness, which supplies 43 percent of its income, and 64 percent of agribusiness' income comes from government payments.

County officials will need to watch how changes in the 1996 Farm Bill affect county income, especially if government contributions are a significant source of income. For the state as a whole, government payments have decreased by over \$140 million since 1987. At the same time, farm incomes have increased by about 10 percent. The 1996 Farm Bill has increased planting flexibility. While intended to enable farmers to better respond to market price signals, greater price swings will occur over time. Greater reliance on the market means farmers also will face increased exposure to market risks.

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