AGRICULTURE
Golden Plains Area Newsletter

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GOLDEN PLAINS AREA AG NEWSLETTER

Web Site: http://goldenplains.extension.colostate.edu
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AG BUSINESS

2022 Ag Census Data for Northeastern Colorado
Brent Young, Regional ABM Specialist

On February 13, 2024, the National Agricultural Statistics Service (NASS) of the USDA announced the results of the 2022 Census of Agriculture. The Ag Census is conducted every five years, years ending in 2 and 7. The census is a complete count of U.S. farms/ranches and the people who operate them. Farmers and ranchers who had $1000 or more of products raised and sold in the census year were asked to complete the census survey. Presented in this edition of the Golden Plains Area Newsletter is a summary of the 2007-22 Ag Census data for the seven counties that makeup Northeastern Colorado (See Pages 11 and 12).

Some notable trends have emerged over the past several census reports. The area has seen a steady decline in the number of acres of most classes of farmland, and a more than threefold increase in CRP acreage. Corn has surpassed wheat as the regions number one crop and beef cow numbers are down from the 2017 census.

Individual county and state-wide data can be found at the CSU ABM website https://abm.extension.colostate.edu If you have questions about this topic or any other agricultural business management issue, please feel free to contact me at 970-580-2204 or by email at brent.young@colostate.edu .

AGRONOMY

USDA Approves GMO Wheat
Ron Meyer, Area Agronomy Specialist

The United States Department of Agriculture has approved Genetically Modified Organism technology (GMO) wheat for production in the US. The approved trait is HB 4, a drought tolerant transgenic gene found in sunflower. Along with drought tolerance, heat tolerance is also expected to accompany the trait. In addition, wheat varieties may also carry herbicide tolerance. Since the trait is transgenic and GMO, EPA along with FDA will also need to review the application. It is expected that both agencies will follow USDA and approve GMO wheat.

The HB 4 trait was developed by an Argentine Company, Bioceres. This trait, when fully approved for US production, will be integrated into already released wheat varieties. From that point, local production testing will occur on Colorado farms. Released varieties are expected to be generally available in 3 to 5 years.

Corn Stalk Nitrate Tests for Future Management Decisions
Catie Green, Area Agronomy Specialist

Reflecting on this growing season, while it is still fresh in your mind, can be one of the best ways to prepare for the next growing season and make the best management decisions moving forward. As the corn begins to mature and dry down it is time to start thinking about taking stalk samples to evaluate this growing season's nitrogen program and make changes for the following season if necessary.

End-of-season nitrate testing should be done about 3-weeks after at least 80% of the kernels have reached physiological maturity, or black layer. After determining that a field is ready, samples will need to be taken in a random, spatial pattern, like the same pattern used for soil testing. For each area of the field take 12-15 samples from the bottom of individual stalks using the following procedure.

- Cut an 8 inch sample beginning 6 inches above the soil (your sample should be from inches 6 to 14 on the stalk).
    - This can be done with a measuring tape, marker, and pruning shears or a sharp knife.
- Remove any leaves on the sample.
- Bundle your 15 stalks together, and label appropriately.
- Place samples in paper or cloth bags to avoid mold.
- Refrigerate samples until shipped.
-

Under favorable growing conditions for the season, the late-season corn stalk nitrate test should be able to give the producer an idea of whether adequate nitrogen was applied for the season.

Interpreting the results of the test is simple and can be done as follows:

- Nitrogen deficient: Less than 450ppm nitrate-Nitrogen
- Optimal (yields are not limited by Nitrogen): 450 – 2000 ppm nitrate-Nitrogen
- Excessive (uptake exceeds requirements): Greater than 2000 ppm nitrate-Nitrogen

This test and its data become more valuable the more they are used, and the more data is collected from year to year. The late season corn-stalk nitrogen test should be used in conjunction with other tests to make the best management decisions for your farm, including soil tests completed in the early spring.
As always, contact your local Extension office for more information on laboratory testing and interpretations.

Navigating CDA's New Private Pesticide Applicator Licensing Requirements
Catie Green, Area Agronomy Specialist

Producers may be aware of the new licensing requirements and processes set forth by the Colorado Department of Agriculture effective January 1, 2024. However, many producers and applicators still have questions about these new laws and regulations. The biggest changes we are seeing effect Northeastern Colorado, and the Golden Plains Area is the change to proctored testing for Private Applicator Licenses as well as the need for a fumigation category called "Category 309B Non-Soil

Fumigation Pest Control" to buy Fumitoxin used to eradicate prairie dogs in many parts of Northeastern Colorado.

The Private Applicator licensing change will affect anyone that needs to get their first private applicator license, or anyone that has let their license lapse, and will need to pass the exam to obtain their license again. As a reminder, "any person who uses or supervises the use of a restricted use pesticide for the purpose of producing an agricultural product" will need to have an up-to-date Private Applicator license. This license can now be obtained by applying for, taking and passing the Private Applicator licensing exam at a proctored location and paying the $75 license fee to the Colorado Department of Agriculture. The exam details are as follows: proctored at an approved testing location, on a computer, open book (with the book provided by the test proctor), 100 multiple choice questions, with two hours to complete, and a 70% is needed to pass.

The Category change for Category 309B Non-Soil Fumigation Pest Control will affect anyone that needs to buy or sell Fumitoxin, which is used to eradicate prairie dogs and other burrowing vertebrates. This Category must be obtained in addition to either a Commercial or Private Applicator's license and requires the exam, as well as applying for the Category addition with the Colorado Department of Agriculture. The exam details for Category 309B are as follows: proctored at an approved testing location, on a computer, no reference materials will be allowed, 50 multiple choice questions, with one hour to complete, and a 70% is needed to pass.

Applicators that would like to sign up for a testing slot can do so online at the Colorado Department of Agriculture's website and they can select a testing location that works for them. Testing locations in the Golden Plains Area now include Julesburg and, Burlington for your convenience. Many other testing sites throughout Colorado are available as well, to be found on the Colorado Department of Agriculture website. Contact your local CSU Extension office, or the Colorado Department of Agriculture for further information.

Got Rye in Your Wheat?
Ron Meyer, Area Extension Specialist

Feral rye, along with other annual grasses, are troublesome pests for wheat producers. Rye, along with jointed goatgrass and cheat grass, cost Colorado Wheat producers' money annually in terms of reduced yield and increased dockage. However, a newer wheat production system termed CoAXium Wheat Production System is an option for wheat producers who have annual grassy weeds. The CoAXium wheat Production System is a herbicide tolerance technology based on a non-gmo AXigen wheat trait. The technology was developed at Colorado State University and is owned by the Colorado Wheat Research Foundation. CoAXium is the name for the production system, Axigen is the wheat gene, and Aggressor is the herbicide. Aggressor applied to CoAXium wheat varieties provides control of winter annual grasses such as feral rye, downy brome (cheat), and jointed goatgrass. Aggressor is applied at 8-12 oz per acre to growing wheat and emerged rye in the fall or spring, or as a split application. Coverage and actively growing rye are important for control. Use surfactants such as MSO or COC for best results.

The new CoAXium wheat production system has proven results controlling feral rye, downy brome, and jointed goatgrass using wheat varieties such as AP 18 AX, Cresent AX, LCS Photon AX, LCS Helix AX, LCS Eclipse AX, LCS Fusion AX, Battle AX, LCS Atomic AX, Kivari AX, CP7017 AX, and

CP7050 AX. New wheat varieties are also being developed with this trait. Aggressor applied to these varieties at 8 – 12 oz/acre to actively growing feral rye has provided very good results. Split applications in fall (8 oz/a Aggressor + COC) and spring (8 oz/a + MSO) can be applied to emerged rye. Application coverage to rye plants is important and 15 gallons water acre is recommended. For additional information, access WWW.Coaxium.com.

Advances in Agricultural Technology
Ron Meyer, Area Extension Specialist

Plant scientists have been employing science to improve crops for centuries. David Harris from the University of London believes that gatherers began selectively breeding wheat about 12,500 B.C.. Cutting edible grasses with rock-edged sickles they took the grain-bearing grasses home. Only the strongest kernels of wheat or barley were left on the stalk because they may have been hard to cut. Those plants had stronger stalks and those plant seeds fell to the soil nearest the Neolithic campsites, and after sprouting and growing, they produced plants with maybe stronger straw and heartier kernels. Thus began an unintentional plant breeding program selecting for different and better plants.

As knowledge improved science improved. Plant scientists (Agronomists by today's title) advanced plant varieties and traits, one gene at a time. Early plant breeders selected plant varieties that yielded better and had improved qualities for processing needs or human preferences (plants that tasted better). A striking breakthrough occurred in 1866 when an agronomist monk named Gregor Mendel crossed pea plants and became known as the "Father of Genetics". As it turned out, traits for peas could be easily manipulated using manual cross pollination techniques. Scientists quickly adopted the discovered cross pollination strategies to create plant hybrids. These new hybrids were selected to produce plants that yielded better, produced stronger stalks, and had superior quality characteristics. The new hybrids not only benefited farmers planting them (in the form of higher yields), but also consumers who noticed better and healthier food.

In 1953 scientists discovered a long molecule found in all living things they called DNA which contained genetic "codes" for traits and characteristics. Later it was discovered that desirable DNA (rust tolerance, higher yields, etc.) could be transferred to new plants with success. As a result, agronomists now found selected genes that produced positive outcomes (better yield) that could be transferred from one plant to another with greater accuracy and with less time. But plant breeding was still a "hit and miss" science. Agronomists knew which gene they wanted to advance, but needed multiple tries to finally get the desired result. This required lots of cross pollination and then further back crossing to finally achieve success. As a result, it sometimes took as many as 15 years to get a new and improved variety released.

In 1973, another scientific agronomic breakthrough was found. Plant scientists discovered how to successfully transfer a gene from one species into a completely different species. This discovery was something thought impossible by many in the scientific community and a new science was immediately born; biotechnology. Scientifically referred to as transgenic crops or Genetically Modified Organisms (GMO), this new science continues to produce better and healthier plants today.

In 1996, the first commercially available GMO crops were planted. The new GMO crop was a herbicide tolerant soybean and the herbicide applied was glyphosate. The new discovery now made controlling weeds much less difficult for producers who adopted the new technology. Herbicide tolerance in other crops followed. Glyphosate resistant corn was widely adopted by corn farmers looking for an easier method to control weeds. Another innovation occurred when an insecticide producing trait was inserted into corn plants. Known as BT corn, the trait enabled corn plants to produce a naturally occurring insecticide, eliminating chemical insecticide applications to control insects that attack corn plants. BT corn did not require farmers to apply insecticides to corn plants to control insects.

So how does transgenic technology work? Early methods used a 22-caliber pistol's bullet that was dipped into DNA material and shot into young corn plant material. The result didn't always work but when it did, the corn plant's DNA accepted the foreign genes and began to replicate and multiply the new gene. From there, corn plants were tested to make sure they contained the desired traits. Current improved research uses a natural soil borne bacterium to transfer the desired trait from one species to the next.

Is GMO technology in plants safe for us to consume? It is estimated that today more than 70% of U.S. food contains GMO plants. In the U.S. prior to release into the food system GMO plants are compared to their traditional counter parts for chemical, genetic, biochemical, compositional, nutritional and environmental tests as well as known allergens. GMO crop testing is done by the FDA, EPA, and USDA. Further, more than 50 scientists from the National Academy of Science regularly evaluate GMO crops. Furthermore, countries such as Argentina, Canada, Australia, and China conduct their own testing for GMO food safety. As a result, GMO crops are highly regulated and tested for both human and environmental safety.

Plant breeders also work with non-transgenic methods to transfer desirable traits from one plant to the next generation. Wheat and sunflower are two crops that are not GMO or transgenic, which means that more traditional plant breeding techniques are employed. In an effort to employ new technologies more efficiently with non-transgenic crops, plant breeders have discovered better and faster methods for transferring desirable plant traits to the next generation. DNA Marker-Assisted Selection (MAS) is one technology that is currently being employed. DNA markers have now been found that allow a plant breeder to more efficiently identify and select specific plant traits to advance to the next generation. While some genetic markers may or may not be the DNA that controls the desired trait, they act as a "flag" that point to the specific gene that plant breeders want transferred. This technology has been used since the early 2000's.

One particularly powerful form of DNA marker technology is Single Nucleotide Polymorphism or SNP (pronounced snip). This plant breeding technology allows less expensive and high-throughput DNA sequencing methods to identify and locate genes controlling important traits such as better yield and quality. SNPs located close to a particular gene act as a marker for that gene. Once the marker is identified, plant breeders know which genes to focus on and select for transfer.

Two other plant breeding methods that are currently garnering increased attention are Genomic Selection and High Throughput Phenotyping. Genomic Selection allows the breeder to use SNPs to increase the accuracy and efficiency of trait selection, with the key goal of shortening the breeding cycle time and more quickly increase the rate of genetic gain. High throughput phenotyping uses remote sensing and other technologies to rapidly and inexpensively evaluate breeding germplasm for drought tolerance, heat tolerance, plant biomass, pest tolerance, and other important production characteristics.

Further, another new plant genetic transfer technique is called Clustered Regularly Interspaced Short Palindromic Repeats or CRISPR. The CRISPR breeding method involves more nature than science and uses proteins to change the sequence and potentially "deactivate" certain undesirable genes. For instance, CRISPR technology could disable a plant's gene that allows disease or insect susceptibility, thus making the plant resistant to specific pests, without using transgenic methods. Meaning this technology could make plants more insect or disease resistant by turning off the bad genes and enabling the good genes to thrive, without inserting foreign genes into the plant. This could also eliminate or reduce pesticide applications to control pests.

As a result of improved crop production techniques, agronomists are now able to reduce the time required to release a new and improved variety equipped with targeted pest tolerant traits from 10 years to approximately 3 years, in some cases. As a result, farmers can now employ better varieties in a third of the time it used to take to develop.

It is no accident that record crop yields are happening yearly. The record corn yield harvested in 2018 was 477 bushels per acre. In 2023, David Hula, a farmer from Charles City, Virginia, set the world record for corn yield at 623 bushels per acre (bpa) in the National Corn Growers Association (NCGA) yield contest. To be sure, agricultural scientists are currently employing the best technology available and the return on investment is showing up with quicker variety release times, enhanced pest resistance, and higher yields using similar inputs.

Sources:
Colorado Wheat Farmer, Glenda Mostek.
Maine Organic Farmer & Gardener » Spring 2011, John Koster.
Dr. Scott Haley, Colorado State University Wheat Breeder.
Dr. Ademola A Adenle, UNU- IAS

LIVESTOCK

PASTURE TO PROFIT

Better Brandings Begin Now
Scott Stinnett, Area Livestock Specialist

Spring branding may not be top of mind this time of year, but planning now could make for a better branding in the spring. A producer can ask themselves what issues they have during branding and how can they address those? What would they like to make branding more convenient, faster, lower stress or use less labor? Here are several more focused questions to ponder to make improvements to branding.

How is the location for branding? Many times, producers have a traditional spot used for brandings, but is it the best location? What is not available at the location? Would you like to have electricity to use electric branding irons and keep lunch warm in the crock pot? Do you need water to be able to clean up after branding activities or have a water tank available for cattle and horses to drink from? Are there repairs and improvements to the area that are needed? Are fences in good condition? Do pens, corrals, alleys and gates all function well for your needs? Is there shade or shelter for supplies, people or serving lunches? What else can be done to make the location better for branding?

How is the labor situation? As across all agriculture, finding labor that is experienced and competent to do the job is getting more difficult year after year. For those who trade labor branding your own and helping at other's brandings, does the trade make sense? Are you spending two days branding your cattle and then giving up ten, twelve, twenty or more days going around to other brandings? Granted brandings are also a social gathering, but is the time helping others detrimental to your own operation? Would it be easier to pay branding help instead of trading labor? Consider your labor situation for branding. Would dividing your brandings over more days with less time per day rather than trying to squeeze everything into a short time frame fit your branding help? With families being pulled in many directions, especially those with active youth, does spreading out the work over more days fit with modern rural life schedules?

Do you need to try a new process for working calves? While roping and dragging calves is very traditional and can be low stress on the animals, with a labor shortage, is investing in facilities for sorting and handling animals better? Does it make sense to invest in a calf cradle and alleyway that can be used for a generation instead of paying labor for two ropers and two ground crews? Would the addition of other handle equipment such as a "nord fork" be more appropriate?

Would a different or new animal health product improve branding? There are always new products coming to market. A great addition might be using nasal or all sub-Q injectable vaccinations. They are a better fit with BQA guidelines and make it a little easier and lower stress on calves. Research vaccination program options now to see if there will be a financial advantage farther in the future during marketing of calves. Adding an injectable vitamin or mineral supplement or a maternal bovine appeasing substance (MBAS) may help calves with stress. Would a topical pain management product help new steers recover more quickly? A visit with your veterinarian, discussing advantages, disadvantages and costs now can give a producer time to decide which products if any will be included in future brandings.

Getting organized now for branding may lower the producer's stress when branding time comes around. Gathering equipment for branding such as taggers and vaccination guns and ensuring they are clean and in good working order can avoid a panic to repair or replace right before a branding. Taking inventory and restocking supplies like ear tags and needles now can prevent a hustle to gather them in the days prior to branding or worst finding they are out of stock because other producers have resupplied too.

Like a good boy scout, being prepared for branding can lead to lower stress for the producer and possibly institute changes to make brandings better come spring.

PASTURE TO PROFIT

Winter Cow Nutrition Requirements
Travis Taylor, Area Livestock Specialist

Several factors impact the nutritional requirements of beef cows during winter. Mature size, body condition, time till calving, and critical temperature are some of the main factors that will affect cow needs. In truth we feed to the average cow in an individual herd or group. Cow rations should always be calculated on a dry matter basis and balanced to meet energy and protein requirements while ensuring that calcium (Ca) and phosphorus (P) requirements are met and balanced in the correct ratio. Other mineral and vitamin considerations are usually supplemented to meet cow need.

Energy in feed is calculated in either Metabolizable Energy (ME) in mega calories (Mcal) or Total Digestible Nutrients (TDN). Pregnant cow requirement for energy increases with fetal development and cold stress. In general, the pregnant cow ration should contain 0.8-1.1Mcals per pound of ration. In terms of TDN cows need 9.7 to 15.3 pounds per head per day. This may seem to be a wide range as is dependent on the cow size, body condition, stage of production and environmental conditions. Cows in better body condition require less energy for maintenance and can handle cold stress more readily. The critical ambient temperature for a cow is 20-22 degrees Fahrenheit. To account for the cold, producers should increase the quantity of winter dry feed one percent for each degree below critical temperature.

Protein required is calculated as Crude Protein (CP) and pregnant cows require 1.4 to 2.2 pounds CP daily. Winter rations need to be 7 to 9 percent CP and remember that low-quality forages (below 6% CP) will be consumed at about 1.5 percent of body weight on a dry matter basis per day. Thus a 1200-pound cow would intake about 18 pounds of this lower quality 6% CP forage and would have received 1.08 pounds of CP. She would need at minimum one- and one-half pounds of a 28% CP supplement to meet her requirement. Higher-quality hays (above 8% CP) may be consumed at 2 percent of body weight and may meet CP requirements with no supplementation. Excellent quality forages like good alfalfa, silages or green pasture may be consumed at the rate of 2.5 percent dry mater of body weight.

Calcium (Ca) and Phosphorus (P) are the two most important minerals in cattle diets. Daily requirements should be met and balanced at an ideal Ca:P ratio of 2:1, the same ratio that is found in bone. It is particularly important during the last trimester of pregnancy and to set cows up for lactation. Calcium required is between 16-30 g/day, while phosphorus is 13-18 g/day. It is important to know that forages are usually higher in Ca and low in P, thus cows being feed harvested forage or grazing stalk fields are likely receiving less than their P requirement. Supplementation of both Ca and P may be necessary to meet daily requirements and keep these important minerals in an appropriate ratio.

Providing proper nutrition is important, and testing forages helps producers better utilize costly winter feed resources. However, if you aren't testing, operating from average values is a great place to start. By using more precise estimates relating to forage available and mature cow size, producers can better calculate if winter feeds are meeting an average cow requirement. More accurate information leads to better management decisions and hopefully more profit.

HORTICULTURE

Nutrient Deficiencies in Houseplants

Linda Langelo, Area Horticulture Specialist

Yellow, browning, or deformed leaves on a houseplant can mean many different things. Nutrients may be the cause of why the leaves are losing color, yellowing, or turning brown. It is important to know the nutrient requirements of your houseplant.

Is it a heavy feeder? This means it needs more fertilizer than other plants required to stay healthy, and they may have a faster growth rate. Some plants such as orchids and ficus require high amounts of nitrogen, potassium, and phosphorus. Use a fertilizer with a balanced ratio of nitrogen, potassium, and phosphorus but at a higher rate, or fertilize more frequently. But be careful of over-absorption of fertilizer and too much can cause root burn.

Each type of nutrient deficiency shows up differently in houseplants. Here is a good list to follow:

- A sign of nitrogen deficiency will be a general yellowing of the leaves, starting with the older inner leaves first and moving outward to the younger ones.
- A sign of potassium deficiency will be when the leaf edges turn bright yellow and then scorch, but the inner leaf stays green.
- A sign of phosphorus deficiency inhibits or prevents shoot growth. The leaves turn dark, dull, blue-green, and may become pale in severe deficiency.
- A sign of calcium deficiency is yellowing on younger leaves first that become stunted and deformed.
- A sign of iron deficiency can show up on young leaves on the top of the plant and then on the branch tips. This appears as yellowing between leaf veins with the veins remaining green.
- A sign of magnesium deficiency is shown on the leaves as yellow patches between leaf veins on older veins.
- A sign of sulfur deficiency starts turning the newest leaves yellow all over the plant.

An Overview of Colorado and Its Counties

according to the USDA Census of Agriculture

Jeffrey E. Tranel, Jenny Beiermann, and R. Brent Young
Agricultural & Business Management Economists, Colorado State University

COLORADO STATE UNIVERSITY EXTENSION

Northeast

Kit Carson, Logan, Morgan, Phillips, Sedgwick, Washington, and Yuma Counties

Note: A "0" indicates there was zero quantity or data was not available.

	2022	2017	2012	2007
People				
Population (source: Colorado Department of Local Affairs)	78,566	78,707	79,732	79,800
Producers				
Average Age (years)	58.7	58.1	57.6	56.3
Males (number)	5,145	4,243	3,972	4,402
Females (number)	2,927	1,815	580	820
Number of Producers with Military Service	570	672		
Number of New/Beginning Producers (10 or fewer years)	1,955	1,752		
Land				
Land in Farms (acres)	6,696,018	6,701,545	6,465,391	6,650,754
Total Cropland (acres)	3,794,037	3,870,535	3,576,745	3,915,964
Pastureland, all types (acres)	2,850,337	2,778,929	2,858,059	2,765,980
Land in CRP & Other Gov't Set-Aside Programs (acres)	1,358,362	402,359	595,007	822,180
Ag Land, Irrigated (acres)	583,339	726,249	696,161	718,056
Farm Size: Average (acres)	1,581	1,596	1,429	1,314
Farm Size: Median (acres)	480	530	506	640
Number of Farms by Size				
1 to 9 acres	145	205	178	166
10 to 49 acres	375	466	415	441
50 to 179 acres	827	798	894	1,073
180 to 499 acres	854	735	802	1,049
500 to 999 acres	583	537	671	728
1,000 to 1,999 acres	480	514	605	729
2,000 or More acres	925	989	987	1,036
Finances				
Total Ag Sales ($1,000)	3,929,644	3,023,107	3,362,323	2,327,780
Crop Sales ($1,000)	1,021,539	770,563	949,951	632,801
Animals & Products Sales ($1,000)	2,908,105	2,252,534	2,412,372	1,694,980
Gov't Payments Received ($1,000)	51,078	79,234	62,701	64,190
Agri-Tourism & Rec Services ($1,000)	235	803	312	276
Total Organic Product Sales ($1,000)	754	654	0	0
Net Cash Farm Income From Operations ($ per operation)	308,275	90,460	142,601	83,732
Farms with Sales (number)				
Less than $50,000	2,344	2,342	7,030	8,405
$50,000 to $99,999 (number)	325	361	378	492
$100,000 to $249,999 (number)	441	557	539	615
$250,000 to $499,999 (number)	415	392	444	381
$500,000 or More (number)	664	592	713	551

Northeast	2022	2017	2012	2007
Crop Production				
Hay				
Harvested Land (acres)	*169,676*	*182,067*	*133,580*	*201,134*
Harvested Quantity (tons)	*470,835*	*565,869*	*376,248*	*633,233*
Alfalfa				
Harvested Land (acres)	*79,541*	*86,820*	*72,533*	*112,824*
Harvested Quantity (tons)	*317,025*	*384,531*	*297,369*	*527,075*
Barley for Grain				
Harvested Land (acres)	*0*	*860*	*625*	*510*
Harvested Quantity (bushels)	*0*	*73,650*	*35,554*	*29,800*
Corn for Grain				
Harvested Land (acres)	*739,165*	*886,713*	*689,099*	*664,528*
Harvested Quantity (bushels)	*93,346,333*	*131,494,716*	*87,785,717*	*97,265,563*
Dry Edible Beans				
Harvested Land (acres)	*380,796*	*489,275*	*350,021*	*412,199*
Harvested Quantity (cwt)	*26*	*33*	*24*	*26*
Proso Millet				
Harvested Land (acres)	*199,676*	*168,106*	*75,018*	*159,297*
Harvested Quantity (bushels)	*3,439,833*	*6,742,726*	*1,132,159*	*5,665,314*
Sorghum for Grain				
Harvested Land (acres)	*69,973*	*80,380*	*5,282*	*4,146*
Harvested Quantity (bushels)	*2,177,007*	*4,111,165*	*109,913*	*195,681*
Soybeans				
Harvested Land (acres)	*6,434*	*13,280*	*8,959*	*1,255*
Harvested Quantity (bushels)	*290,368*	*768,705*	*418,813*	*67,857*
Sugarbeets				
Harvested Land (acres)	*8,891*	*12,876*	*14,548*	*14,683*
Harvested Quantity (tons)	*278,946*	*457,649*	*461,807*	*372,798*
Sunflowers, All				
Harvested Land (acres)	*10,975*	*0*	*13,104*	*24,663*
Harvested Quantity (pounds)	*9,442,087*	*0*	*13,274,890*	*37,943,487*
Wheat, All				
Harvested Land (acres)	*677,313*	*899,187*	*885,068*	*1,013,381*
Harvested Quantity (bushels)	*19,151,450*	*42,234,683*	*31,768,287*	*39,274,885*
Vegetables, in the Open				
Operations with Area Harvested (number)	*26*	*33*	*24*	*26*
Harvested Land (acres)	*3,027*	*2,688*	*4,237*	*3,080*
Potatoes, All				
Operations with Area Harvested (number)	*4*	*5*	*9*	*7*
Harvested Land (acres)	*0*	*0*	*1*	*0*
Orchards, Non-Citrus				
Land in Bearing and Non-Bearing Plants (acres)	*0*	*0*	*5*	*1*
Animal Production				
Cattle and Calves (head)	*1,070,052*	*1,005,238*	*961,171*	*968,108*
Beef Cows (number of operations with)	*1,127*	*1,459*	*1,402*	*1,576*
Beef Cows (head)	*37,938*	*52,584*	*40,063*	*23,873*
Milk Cows (head)	*38,261*	*34,857*	*29,783*	*24,937*
Sheep, including Lambs (head)	*5,717*	*6,244*	*3,041*	*3,751*
Meat Goats (head)	*2,464*	*2,529*	*2,007*	*6,812*
Milk Goats (head)	*146*	*349*	*103*	*284*
Llamas/Alpacas (head)	*10*	*444*	*395*	*141*
Bison (head)	*0*	*0*	*360*	*0*