Jumpin’ Good 2011 POTATO CROP
In cooperation with Colorado State University Ext.

SEED VARIETIES

1. Rio Grande Russet
2. Mountain Rose
3. Colorado Rose
4. Purple Majesty
5. Yukon Gold

Date Planted: 05/31/11
Size of Field: 1 1/2 acres
Total Yield: 14,170 lbs
Altitude: 8500

PREPARATION OF THE FIELD

Beginning in the spring of 2009, goat manure mixed heavily with ground alfalfa hay was deposited on the planting site. We cleaned out one livestock barn 16x56 on 5 separate occasions over a 2 year period and one livestock barn 16x56 on one occasion. We also scraped the surrounding loafing area of the goats, approximately 12 times, depositing all the material on the planting site.

In the spring of 2010 we harrowed the manure material over the site and in the spring of 2011, May 15, we tilled the site. There was about 6-8 inches of manure material on the surface of the soil before we tilled.

We removed as many larger rocks from the site as possible but there was still a good number of new potato sized rocks in the field.

CSU EXTENSION MEETING

April 30 2011, I met with Rob Davidson Ph.D. professor of horticulture and seed potato specialist at the CSU- SLV Research Center in Center, Colorado in the San Luis Valley to learn and discuss a potato planting project at my Goat Dairy and artisan cheese making operation in Buena Vista, Colorado.

I had originally considered planting up to 7 acres until Rob explained an average yield per acre of potatoes. We decided to start with a smaller experimental size site with a colorful wide variety of potatoes. I felt this would enable us to market the potatoes through our Jumpin’ Good Country Store on site at the farm and get an immediate response to the type of potatoes people first choose to purchase.

Rob Davidson supplied me with written material about planting potatoes and a book about seed potatoes so I could choose the types I wanted to grow. We talked about tilling and depth to plant the seeds and cultivating—increasing the mound size to expand tuber growth ect.

We also discussed the important topic of storage once the potatoes were harvested. Rob agreed to deliver seed potatoes to my dairy farm in late May.

The goals of this project were to see if I could successfully grow potatoes at this altitude organically, using only goat manure for soil supplement and the 6 day rotation of water. Then to successfully market the potatoes and add a u-pick program as a part of my current operation.

PLANTING THE FIELD

On May 22, Rob Davidson delivered the certified seed potatoes for our project. We stored the potatoes in a cool dark place, an under ground aging cave used to age cheese.

On May 31, the research associates, Andrew Houser and Steve Keller, who work for Rob, arrived with a tractor and planting implement. We all went to the field and decided the layout of the 5 varieties. Please see illustration.

IRRIGATION WATER

I have water rights from the Riverside Ditch Company off the Arkansas River. My rotation is every 6 days. Our plan was to start with the flood irrigation method and make improvements to the irrigation system based on the success of this project. It took much manipulation and constant effort in the beginning digging canals and turning and rerouting the water to get the entire crop watered. Once we had the water flow deeply patterned it took somewhat less labor.

It took 4 people working a total of 30 hours a month to flood irrigate and later cultivate the crop.

One very notable factor was that once the water hit the soil on the crop site it turned the color of dark black tea. The nutrients from the manure mixture used in the soil were very visible once the crop received water.

At one point of our irrigation rotation we received significantly less water, and in another instance none due to a river call. This occurred during the hot month of August. Some of the plants showed stress from this. The longest period without irrigation water was 10 days. Improving the method of irrigation would bring water more consistently and utilize the water more affectively thus improving the crop eliminating undue stress and reducing manual labor.
WEED CONTROL
Weed control for this project consisted of hand pulling. No chemicals were used. Prior to this crop, no other crops had been planted on this land to my knowledge. The plant life growing there was native grasses and sage. Rob Davidson came for a site visit just before the row deepening and mound building date and was surprised at how few noxious weeds we had.

There was little invasion of weeds until the latter part of the crop cycle, Sept 1 and forward. Then there was noticeable weeds and labor to control them was increased by 12 additional hours per month.

CULTIVATING
The first day for cultivating was scheduled for late June, 3-4 weeks after planting but our crop was planted 15 + days late so we weren’t sure if the plants were ready. We rescheduled for July and had to wait until after the holiday, 6 weeks after planting. The research associates, Andrew Houser and Richard Hasler, came back to my farm with the tractor and a cultivating implement on July 10. The crop had been watered 2 days prior so the soil was adequately moist

Rob felt we could have done the first cultivation—deepening the rows and expanding the mound for the tubers to increase in number and size—2—2.5 weeks earlier than we did. Otherwise this cultivating process was successful and the plants were noted to be thriving and comparable to plants in the San Luis Valley that were planted earlier.

In addition to this cultivation completed by the CSU research group, we continued to cultivate the rows manually with hand tools on a weekly basis. Deepening the rows, repairing breakthroughs from the flood irrigation and weeding.

TROUBLESHOOTING
Around August 20, we noticed a patch of plants turning yellow and dying. It was in a specific area only and affected only one of the varieties of potatoes. Please see illustration below. We assumed it was due to the lack of irrigation water just prior. We later discovered it was not.

The section affected was only in the lower section of the Yukon Gold variety. Andrew Houser and Richard Hasler described the condition as a contagious bacterium known as Pectobacterium carotovora. This is usually found where high water sets in the field for extended periods of time. We removed the affected tubers from the field during the harvest when the actual bacteria was discovered.
THE HARVEST, U-PICK PROJECT AND MARKETING

Harvest day was scheduled for Saturday October 6, 2011. To prepare for the harvest we scheduled for dairy labor to be available and began to develop our U-Pick operation.

I created bright flyers with the basic information and posted them around town and handed them out to customers visiting our on-site Country Store. I put an announcement online through our Chamber of Commerce. I utilized word of mouth in a small community by calling key people and announcing the harvest at church. I hung a giant dry erase board in front of the country store describing the harvest. I spoke with hundreds of people at a Food Show sponsored by a broad line distribution company 5 days prior to the harvest. I took a basket of potatoes to the farmers market, I put a classified ad in the local paper and finally painted a new bright yellow sign and posted it on the corner of the farm property visible from the highway.

We renovated an older horse pulled hay wagon so we could pull it with the tractor. We brought a scale from the dairy and put it in the store, also plastic, paper and burlap bags and 5 gallon buckets. The dry erase board hanging in front of the store directed visitors with information such as free wagon rides to the field, 5 varieties of potatoes to pick with further details of the varieties inside the store, cost is $1.00 per pound. We had the u-pick for one day only and then have potatoes available in the store there after.

ROOM FOR IMPROVEMENT

We found that one day was probably not adequate for a U-pick operation and marketing should start earlier and expand to surrounding counties and be posted to our dairy web site and online Country Store.

The difficulty with extending the u-pick timeline is getting the potatoes out of the field quickly. We had to rely on harvesting equipment provided by CSU ext so the harvest had to be done all at once on one day. Therefore we had to work quickly to get all the potatoes bagged and put into cool dark dry storage which minimized the u-pick operation. I feel if we had our own harvesting implement we could stagger the harvest into sections and extend the u-pick operation through the fall months.

Also adding a pumpkin patch or bringing in pumpkins to the field could be a family draw opening the door to education about the potatoes and harvest.

The turn out and results for the u-pick were still good. We sold approximately 1200-1500 lbs of potatoes in all varieties.

We estimated the Yukon Gold to be the most popular followed by Purple Majesty then Colorado Rose.

STORAGE

We had decided at the beginning of the project to utilize the existing aging cave, I designed and built for the artisan cheese making operation, to also store the potatoes. It would be somewhat experimental because the caves were designed to age cheese at the favorable temperature of 45-52 degrees. In the winter though the cave temp. falls to 35-45 degrees. It was our plan to get the potatoes harvested and stored in time for colder weather and colder cave temps and all sold before warmer temps in late spring—May. In addition a successful u-pick operation would minimize storage of the entire yield.