Growing popcorn in New England

If you can grow sweet corn, you can grow popcorn, so I'll spend most of my time talking about harvesting, drying, shelling, cleaning and marketing popcorn. I grow two acres in a two row system. My spacing is a bit tighter then normal with two rows in a 48" bed, but my yields are the same that they are getting in the Midwest. I fertilize with either chicken manure or soy meal, I keep it very clean from weeds, and never side dress. I plant in early May, as the popcorn is a hardy seed and the plants can take a frost.

I pick when you can press into the kernel with your tumb and not leave a mark, usually in early November. I use a one row corn picker that also husks it and drops it in a gravity wagon. The husking bed only husks, 85% of the ears, I think this is largely because the bed is designed for the larger diameter dent corn. The unhusked ears do not inhibit drying, but do add more trash that needs to be cleaned out of the corn.

Now the real challenge starts, drying. Popcorn will pop at 15.5% moisture content, but will mold if put into long term storage. It will also not pop below 12.5%. My range is between 13 – 14.5% moisture content. Popcorn of different moisture levels will even out the moisture content if placed into the same storage container. If you apply too much heat (above 100 degrees) the kernels can crack and then will not pop, it is also hard on the kernels to shell them if they are too wet. Most popcorn is dried on the ear and shelled when it reaches the correct moisture level.

In the Midwest, they are picking popcorn out of the field at around 15-18%. We are picking it here at 23%. However, we do have the advantage of a having cold dry winters, which prevents the molding of the wet popcorn. You have so many degree days to dry it down from the time you pick it to when it starts to mold. You can crib it, but it can take a long time to dry and you have a slight risk it not being dry enough to shell. I've seen popcorn gain 2% points through a single rain event, so it will reabsorb moisture from the atmosphere very rapidly. One year we were shelling in June, which is dangerously close to July and August when the humidity climbs and it becomes difficult to dry popcorn.

We have built a drying bin, as there is no commercial dryer built for growers of our size. It is a plywood box 8' x 4' x 8' with a grain drying floor and a plenum below that. I holds 2000 pounds of ear popcorn, but it drys more evenly when we load it with around 1400 lbs. We blow heated air into the plenum, with the whole system set to a humidstat. If the atmospheric humidity gets to high, we are no longer drying rather adding humidity. The humidstat shuts down system if the air becomes too wet.

When it is dry, we conveyor it out into a pto sheller. These are no longer made as they are built into combines. We can shell about 70 pounds in two minutes, which is lightspeed over the shellers that do one ear at a time. The only draw back is that the sheller is so aggressive it chews up the cobs and adds more trash to clean out of the popcorn. We pour it in food grade

barrels that hold from 120 to 440 pounds of popcorn. At the right moisture content, it will store for years in the barn.

We clean it using a clipper 2-b. These are easier to find then pto shellers, but you might have to make a drive to the Midwest to grab one. Because the high amount of trash I have rigged up a bouncy house fan to the cleaner to blow more particles out of the system. It does a fair job of cleaning it, but we do end up with some "wings" in the corn and some pieces of cob that are the same size as the popcorn. This bothers me some, but in the 6 years I've been growing 5-7,000 pounds of popcorn, I've heard zero complaints.

We sell some in bulk, but most of it goes in 1.5 pound preprinted zip lock bags. We bag it using a bulk food bin (like the coops use to sell grains) with the sliding door. We need a faster bagging option, but the next step up is rather expense. I've got a few ideas to speed up the process, but no time to develop them as yet. We sell it direct to our customers and through three stores. We control the supply to ensure that customers can get it year around at these places. People love it as we are not even close to meeting demand. More stores want it then we can supply.

It costs us $1.53 a pound to grow, process and bag popcorn. Our average price is 2.08 a pound. Thus, we are making .55 cents profit on every pound of popcorn we sell. As typical of a report of this nature, I'm only writing a small fraction of what I've learned.