

The Natural Farmer

Research on Pastured Poultry Breeds - Summer 2002 Special Supplement on On-Farm Research

By Don Franczyk

My wife Karen and I have been raising broiler and roaster chickens since 1998. In 2001, NOFA/Mass hired Jeremy Barker-Plotkin to assist growers in writing SARE grant proposals, and I decided to apply for a grant to study meat chicken breeds. We had been raising Cornish X and Kosher King birds in paddocks off of our barn. The birds were free range within an enclosure of electric fencing. I wanted to get them out on pasture, and I wanted to get some hard data on feed efficiency – how much feed does it take to get a bird to slaughter weight, and if there was any difference in feed efficiency between the two breeds. Feed efficiency data for Northeast organic poultry operations is hard to come by, and I wanted to develop a baseline that I could measure birds against in the future.

With Jeremy's help I applied for and received a Farmer/Grower Grant from Northeast SARE to do a comparison of broiler poultry breeds on pasture. This was the first grant of any kind that I had ever applied for. The application process was easy and consisted of a description of my farm, a summary of what I was trying to accomplish, and a summary of what the grant money was to be used for. Grant money was for both materials to be used in the project and some of my labor. The grant I applied for paid about 60% of the total cost of the project. I matched the other 40%, and got to keep any equipment purchased as well as all the chickens.

The goal of my project was to compare the two major chicken broiler breeds raised in our area in direct trials in an organic pastured poultry operation. Cornish X chickens are the standard for meat production because of their rapid rate of gain, superior feed efficiency, and high meat quality. However, the Cornish X breed is bred for traditional confinement operations and do not forage well. They also can develop debilitating leg problems. The Kosher King breed also has excellent meat quality, and tends to a better forager than the Cornish X, but has a slower growth rate. The goal of the project was to determine whether Kosher King chickens could achieve a better feed efficiency on pasture, in spite of their slow growth rate, by better utilization of the pasture.

Three trials were run sequentially on pasture. Each trial consisted of 28-31 Cornish X chickens and 28-31 Kosher King chickens. Trials began on May 2nd, June 7th and July 11th. Day old chicks of both breeds were bought from Clearview Hatchery in Pennsylvania. Chicks were kept in a special brooder area for 3-4 weeks and then moved to pasture. Chickens were kept in movable coops on pasture and moved daily to fresh pasture. Our coops were modeled after the coops popularized by Joel Salatin in his book *Pastured Poultry Profits*, but smaller. Our coops were designed to hold no more than 40 birds each. Water and food were kept in front of the chickens at all times. The pasture was mowed in advance of the chickens so grass length was at a stage that was palatable for the birds. Chickens were fed certified organic grain from Vermont Organic Grain. They

were fed chick starter for the first 3 weeks than transitioned to 22% organic rangebird feed. We were unable to obtain a consistent supply of 22% rangebird feed throughout the season, so we used 18% rangebird feed or turkey pellets on occasion. Birds in the same trial were always fed identical feed. Slaughter dates were determined by size of the birds and the available dates for our local slaughterhouse.

My aim in running these trials was to get the birds out on pasture after 3 weeks, manage the birds for 8-10 weeks and then slaughter them. We expected to get chickens after 8 weeks that were around an average carcass weight of at least 3.5 lbs and we expected that Kosher Kings were going to be more efficient than Cornish X chickens. Our target feed conversion was 3 to 1 for dressed birds.

Based upon these goals our results were very disappointing. Our data showed that in these trials the Kosher Kings were more efficient, but I don't feel that those results were valid. The Cornish X chicks we raised in 2001 did not match the quality of chicks we raised in previous years. Though they were absent of the leg problems we had observed in other Cornish X birds, they also seemed to lack the vigor of other birds we had raised. Before this trial I had never gotten Cornish X chicks from Clearview Hatchery. My Cornish X birds had always come from a local source. Clearview is the only source for Kosher Kings and birds I have gotten from them in the past have been of high quality. For purposes of the trial, I thought that it was important to get birds from the same source to eliminate any qualitative differences between hatchery sources. We have raised Cornish X birds before with access to the outdoors and they have achieved average weights over 4 lbs in 10 weeks and over 5 lbs in 12 weeks.

Furthermore, there was something seriously wrong with Trial 2. These chicks would not put on weight at all. I checked with other local producers that get Clearview Hatchery chicks and they reported that their chicks from around the same time were tiny as well. When we slaughtered these birds, I noticed that they were starting to put on fat even though they were nowhere near full size.

We did have a drought for much of July, August and September in our area. This drought affected the quality of the second cut hay in our area. We do not hay our pastures as we are still bringing them back into useful production but the drought may have impacted the quality of the forage available to Trial 2 and especially Trial 3.

I also believe that the feed we used from Vermont Organic Grain was not of high quality. I had problems getting a consistent supply of grain from Vermont Organic. I did get several 'webby' bags of grain throughout the season that seemed old or of very poor quality. Feed conversion for Kosher Kings for Trial 1 was still very high even though this was the best birds of the 3 trials. We had already decided to seek an alternative source of feed for next season even before Vermont Organic folded in November.

In looking over the findings I am still puzzled as to what went wrong. The first batch looked great. We slaughtered them a little earlier than we would have liked, and we were a little disappointed in their size, but we felt we were on the right track. Trial 2 was a giant step backwards and Trial 3 was only a slight improvement. In analyzing what went wrong, we took a look at everything we were doing, the source of the chicks, and the feed we were using. Unfortunately, nothing in our investigations gave us a clear idea of what had gone wrong. Our management of the birds, the birds themselves, or the feed could all have contributed to the poor growth of the birds. In fact, there probably wasn't one cause, but multiple causes for our growth problems.

Data Table of 2001 Chicken Trials						
	1st	1st	2nd	2nd	3rd	3rd

	CC	KK	CC	KK	CC	KK
Date Chicks Received	5/2	5/2	6/7	6/7	7/11	7/11
Date Chickens Moved to Pasture	5/25	6/1	7/5	7/5	8/17	8/17
Date Chickens Slaughtered	7/8	7/8	8/26	8/26	10/14	10/14
Days on Pasture	44	38	52	52	58	58
Days under Managements	67	67	81	81	96	96
Weeks under Managements	9.57	9.57	11.57	11.57	13.71	13.71
Number of Chickens Slaughtered	26	30	28	30	27	28
Average Dressed Weight at Slaughter	2.827	3.467	1.964	2.542	3.87	4.946
Total lbs. of Feed Consumed/Bird	19.43	17.5	28.44	26.77	34.18	33.12
Daily Consumption in lbs./Bird	0.29	0.26	0.34	0.33	0.36	0.35
Feed Conversion (lbs of feed /lbs of dressed weight)	6.87	5.05	14.48	10.53	8.83	6.7

Despite the fact that the trials did not work out the way we wanted, and I still do not have any data on feed efficiency, I feel that it was valuable to participate in the SARE Grant Program. While doing the project, I learned a lot about evaluating my operation on the fly during the growing season, and I learned to question my assumptions about all aspects of my operation. It would have been interesting to replicate the trials this year, but change the source of feed and the source of Cornish X birds, to see if we could have gotten better results, but we decided not to. Working on the grant was time consuming and we felt that we couldn't afford the effort two years in a row. Though overall frustrating, my work on this grant has not been totally wasted. This year, our farm will be raising just Cornish X chickens. We will be going back to the source of birds we used in 2000, that we know we can raise in paddocks, and raise them on pasture. We have changed our feed source, and long term we are evaluating whether bagged fertilizer is appropriate for pastured poultry operations. By taking much of the economic risk out of trying something new, the SARE grant gave us the freedom to fail.

Overall I believe that my findings can be used as a starting point for continued experimentation on my farm but do not prove anything concerning the two breeds. There was obviously some problem in the trials especially with the Cornish X results as compared to past batches raised on farm. I have never had such small birds raised for so long. I suspect that both the feed and the stock source are to blame but can't prove my supposition. Other growers in my area have complained to both Clearview and Vermont Organic but both claim not to be responsible.

We are continuing to refine our poultry operation and will continue to raise poultry on pasture with mobile houses. At the local slaughterhouse our birds are always the most alert, the most healthy, and the cleanest. We are returning to using local sources for Cornish X birds but will probably order one batch of 30 Kosher Kings again in 2002. The Cornish X birds are great meat birds and make the best roasters, but we like the Kosher Kings as foragers and for chicken parts. Our entire approach to feed is changing in 2002. We have a new source of feed out of Pennsylvania and we are thinking of experimenting with mixing our own rangebird ration. I am convinced that Northeast organic growers have not been receiving consistent quality feed even though they were paying a premium price for the feed they were getting. We will be keeping data on our birds and will repeat the experiment. In a few years, we should have some good data comparing the two breeds on pasture.

Outreach

I didn't write any articles for publication because my results were so bad and need to be repeated. I have discussed the results with local pastured poultry producers and as a whole we are questioning the source and quality of our organic feed.