

## Growing Geese on Pasture and Grain

Eight tasters sat around the table at a small Vermont café, looks of concentration on their faces. In front of each one sat a white plate. On the plates were three slices of medium-rare goose breast, red as steak, and topped with creamy fat. As they ate, the tasters took notes on a questionnaire, evaluating the qualities of the meat. Which piece had the most delicious flavor? Which one had the nicest texture? Could they tell which birds had consumed the most grain, versus the ones that had gotten more of their nutrition from grazing on grasses and clovers in the pasture?

During a prior round of tasting, the participants had compared chicken, turkey, duck and goose, without being told which types of birds they were eating. The clear favorite, preferred by five of the eight, was the goose.

In the age of industrial agriculture, with a focus on cheaply produced, easily processed poultry, chicken is king. Because geese are loud and large, strong and fierce, they can be a challenge to husband and process. And, since their feathers need to protect them from chilly water and the cold air during lengthy migrations, they grow thick, waterproof plumage that's difficult to pluck. But if you crave flavorful meat, and gallons of delicious cooking fat, you may want to consider the goose. And, those interested in alternative agriculture, and who live in a place with succulent pasture, could find goose to be an excellent addition to a diversified farm operation.

In 2014, Wesley Bascom and Suzanne Podhaizer, the partners of Gozzard City at Provender Farm, located in Cabot, Vermont, raised 300 Embden breed geese. Thanks to a grant from Northeast Sustainable Research and Education (NE-SARE), the two gooseherds were able to conduct a feeding trial over the course of the season. The goal of the study was multifold: to examine the weights and feed conversion ratios of birds fed differing amounts of grass and grain and determine the economic viability of each regimen, as well as to see how the different feeds affected the taste and mouthfeel of the meat.

### Location and Facilities:

Provender Farm in Cabot consists of 160 acres of woodland and pasture, with soil that tends towards dampness during wet years. Last year, Gozzard City occupied around 10 of those acres, using them for rotational grazing and night-houses. We also built a hoop house brooder, in which the geese spent the first few weeks of their lives.

In the hoop house, using space and temperature recommendations from David Holderread's tome: *The Book of Geese: A Complete Guide to Raising a Home Flock*, we created zones that remained at different temperatures, inspired by the Ohio brooder. And we built a platform scale, which allowed us to track the weight of the geese as they grew.

When the geese were hearty enough to move into the field, they went out during the day into paddocks – a separate one for each test group -- surrounded by poultry and sheep net fencing, and drank from field waterers. Shade structures provided protection from the sun. At night, they were herded into their night-houses, made of posts ringed with wire mesh and three stands of electric fencing. Inside the night-houses were feeding troughs and nipple waterers, which prevented muddy messes (geese love to splash).

Our processing facility consists of an Ashley rotating scalding and a turkey plucker --modified to work better on waterfowl. We also wax the birds for optimal feather removal. Evisceration is done on shackles, which is quicker and cleaner than working on tables. Once chilled, birds are vacuum-sealed for storage.

#### The Trial:

To learn how geese grow differently with varied amounts of grass and grain, we fed each of our three test groups a different amount of grain. One group got five minutes of access to grain once per day (yellow group), the second got five minutes of access to grain twice per day (red group). The third group had free choice access to grain (blue group). No matter how much grain they were allowed, each group had similar access to pasture. They were herded out in the morning, and back in at night.

The pastures at our farm, which are recovering from 25 years of haying without fertility replacement, had a relative feed value of 139 at the peak of the season (mid-September). The fields we used had a mix of grasses and clovers, some dandelion and other plants that were not of interest to the geese, such as dock, buttercup, sensitive fern and thistle. In the late summer, the birds foraged in fields of perennial rye and oats, planted as cover crop. They handily harvested grain from the drooping heads.

Attempts to fatten the birds with byproducts from area farms, such as squash, root vegetables and apple pomace, were unsuccessful. Thus, concerned about the marketability of the products, we used free choice grain for all groups during the fattening period.

#### Weight Gain and Feed Conversion:

Unsurprisingly, the geese that received free choice grain grew the fastest and got the biggest, ending up with a live weight of nearly 16 pounds by week 24. And, the group that received the least grain grew more slowly, with live weights topping out at around 13 pounds.

What is most interesting is that the birds in the middle group, who received grain twice per day, ended up just slightly smaller than the group that received the most grain, but with a more favorable feed conversion ratio (4.06 for the restricted grain group, versus 4.96 for the free choice group), and thus, a lower cost of grain per pound. The group that received the least grain had the lowest feed conversion ratio (3.16), but due to low body weight (and, as will be discussed later, a less desirable taste and mouthfeel), that doesn't necessarily create a bird that will sell well and please customers.

#### Tasting:

In our blind taste test, eight participants compared seared, sliced breast and confit (legs cooked slowly in fat until tender) from each of the groups. Our goal was to learn if the different feeding regimens had an impact on the desirability of the meat.

What we learned is that it did. Although the tasters did not know which meat was from which group, or even how the feeding treatments of the three groups had differed, tasters noticed that meat from the "yellow" group bird, which had gotten the least grain, was tougher, more chewy, and less fatty than the meat from the other groups.

When asked directly, most of the participants were unable to articulate which group had received the most grain and which had received the least, but their palates were telling them that the meats had different qualities. (Some of the tasters were correctly able to rank the groups by amount of grain fed, but they were in the minority, and had the most knowledge about poultry).

Between the red group (fed once per day) and the free-choice blue group, there were still discernible differences. The red group had a more robust flavor, while the blue group was more mild and unctuous. Some of the participants preferred the blue group, while others preferred the red. Both of the goose farmers, who have eaten geese from all groups on multiple occasions, prefer the taste of the red group geese.

#### Marketing:

Because Americans are fairly unfamiliar with geese, marketing them has not proven easy. A handful of the chefs with whom we've spoken have been comfortable using goose meat in a variety of interesting ways, mostly those at higher end eateries. We have sold goose to Hen of the Wood in Waterbury, and a handful of other fine Vermont restaurants.

Consumers seem even more daunted by the birds. Nearly everyone who purchased a Christmas goose from us requested cooking advice or recipes, which we happily provided.

Additionally, regulations that allowed us to slaughter on farm, which is very beneficial for a small-scale farmer, prevented us from selling to retail customers unless they drove out to the farm to pick up the bird. Given our location, this law was prohibitive, especially since goose already sells for a premium price.

We believe that greater familiarity with geese, which will come with time and as others begin to incorporate them into diversified farms, will help increase sales in the future.

The Take Away:

The most important thing we learned from our feeding trials is that limiting grain to twice per day produces birds that are just slightly smaller than those that are fed free choice, and that those birds have the best flavor, and a favorable feed conversion ratio. Reducing grain more than that begins to reduce the quality of the finished product, and the salable weight per bird.

Going forward, we are interested in producing a bird that is given free access to pasture and fed grain in small quantities twice per day. Ideally, some of that grain will be grown on-farm, and harvested by the geese in the field. And, we hope to discover other forage crops that could be grown and harvested for fattening.

Next year, with most of our infrastructure in place, armed with our learning from this year, and the knowledge that tasters found the geese so delicious, we expect that we'll be able to produce birds at a lower cost, sell them at a lower price, and in our third year, have a easy to run, profitable operation.