Studying and Promoting Extended Lactation on Vermont Goat Dairy Farms: Final Report
July 2024

Hannah Sessions, Blue Ledge Farm
Holly Menguc, Tups Crossing Farm

With the hopes of helping establish a more sustainable, humane and profitable form of goat dairy in the region we set about studying the effects of “extended” (longer than 12 months) lactation in dairy goats. The hope is to achieve less labor, cost and risk for farmers, less stress for the goats, and a more constant supply of quality milk year round.

We represent two diverse sectors of the goat dairy industry in Vermont: a value added operation and a commodity milk operation, with herd sizes of 175 and 450 respectively. Our goal was to explore the potential benefits of extended lactation on goat farms of all sizes.

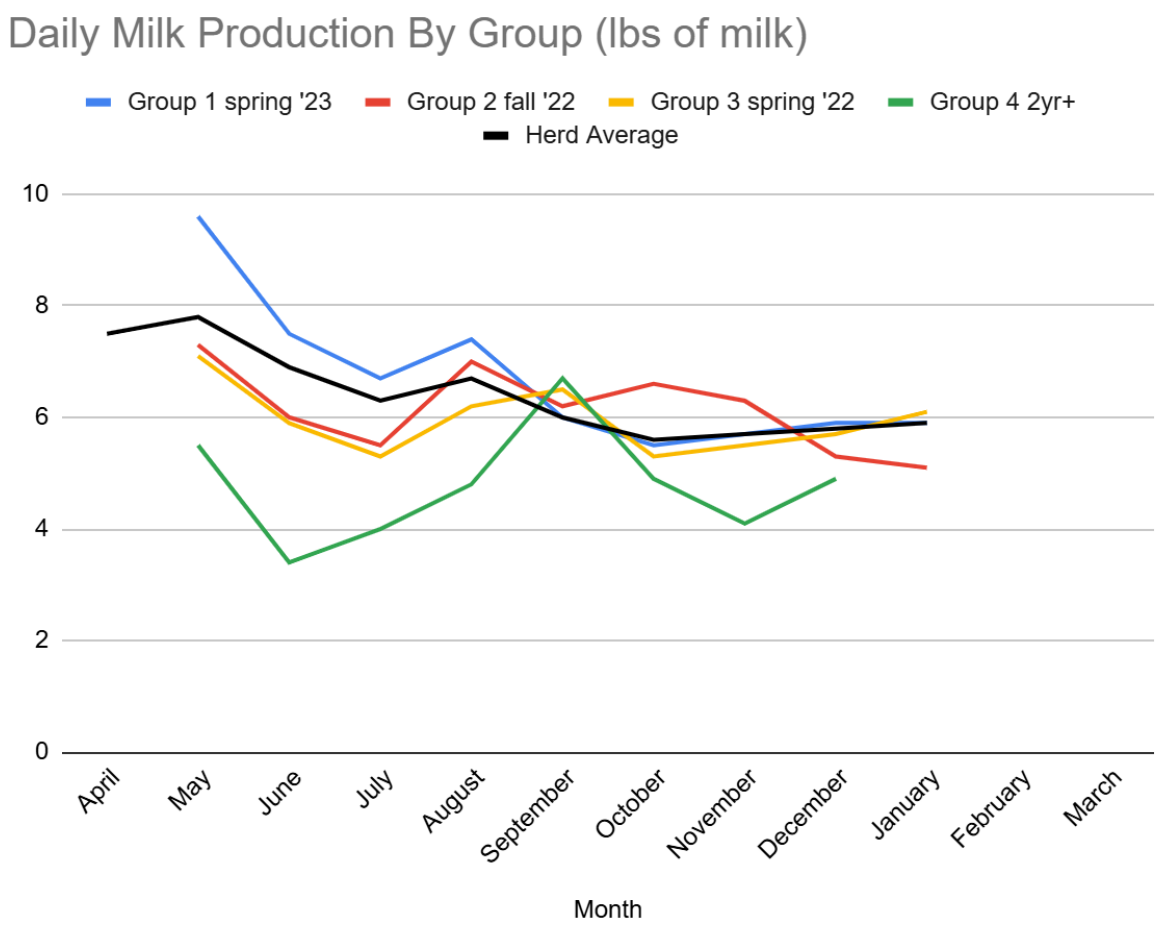
In the fall of 2022 we divided our herds into groups: fall 2022 fresheners, spring 2023 fresheners, and another group who we would not breed - our “extended” group who would continue to milk for a full two years. Starting in April of 2023, with the receipt of this grant, and ending August 2024 we tracked each of these groups and recorded monthly milk volume per goat as well as somatic cell counts since milk quality is of equal concern with milk volume.

In September of 2023 we contracted with the Goat Improvement Company and with Tufts Veterinary Practice to artificially inseminate (laparoscopically) select goats on both farms with semen from farms across Europe who have proven success with extended (700+ days) lactations. This was a very involved and stressful (but miraculous!) process. In the end, Blue Ledge had a 60% success rate (18 pregnancies from 30 attempts) and Tups Crossing a 46% success rate (23 pregnancies from 50 attempts). Strangely enough, Blue Ledge’s does had multiples (a set of 6, a set of 5 and nine sets of quadruplets), while Tup’s had many singles and some twins. In the end between the two farms we had enough offspring to establish some quality genetics on our farms which we will hopefully enjoy for generations to come. We also had some bucklings to sell to area farms and we are so happy to have brought these genetics into the area.

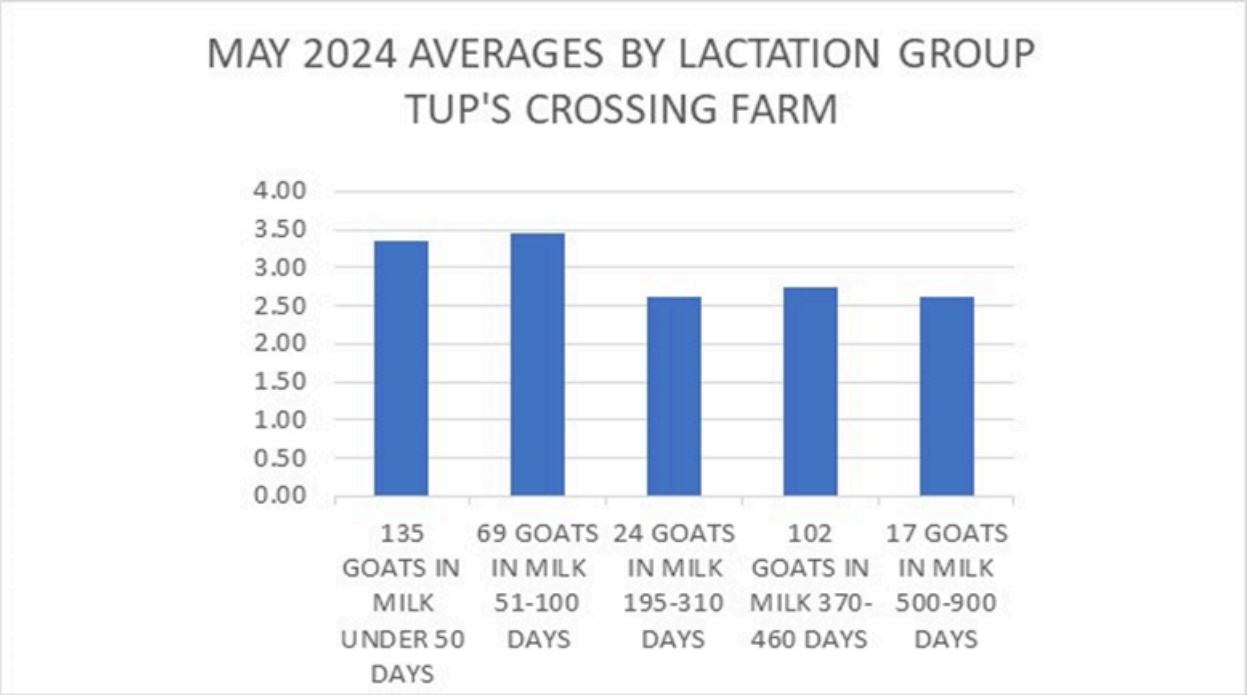
In March of 2024 Hannah presented some of their findings to the participants at the Northeast Grazing Conference (presentation posted on the Blue Ledge Farm instagram bio), and together Hannah and Holly presented at the NE-DBIC Conference in Albany in April. Both Holly and Hannah will host a group of farmers from the Southeastern United States (SE-DBIC) later this summer and will introduce the farmers to this project. It is a project supported by the organization A Greener World which provides Blue Ledge with the Animal Welfare Approved stamp, and so results will be shared with them and their many nationwide farmers participants

as well. Vermont Creamery also supported this project and will have access to share this report should they wish to.

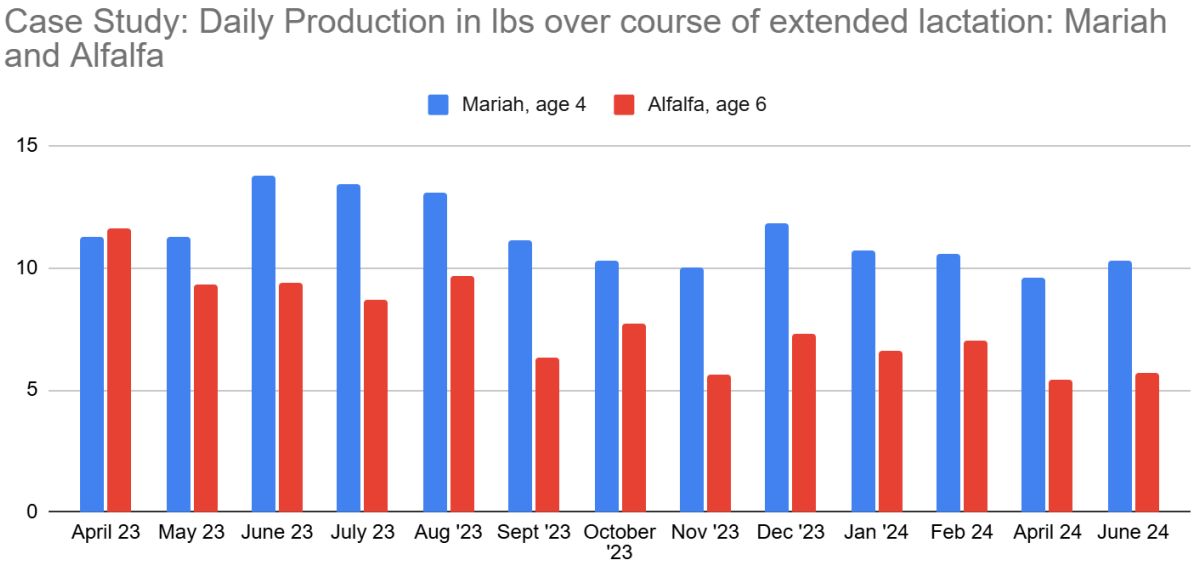
Our findings:
On the production volume aspect we have been pleasantly surprised with how production stabilizes over the course of an extended lactation. As evidenced here (Blue Ledge):



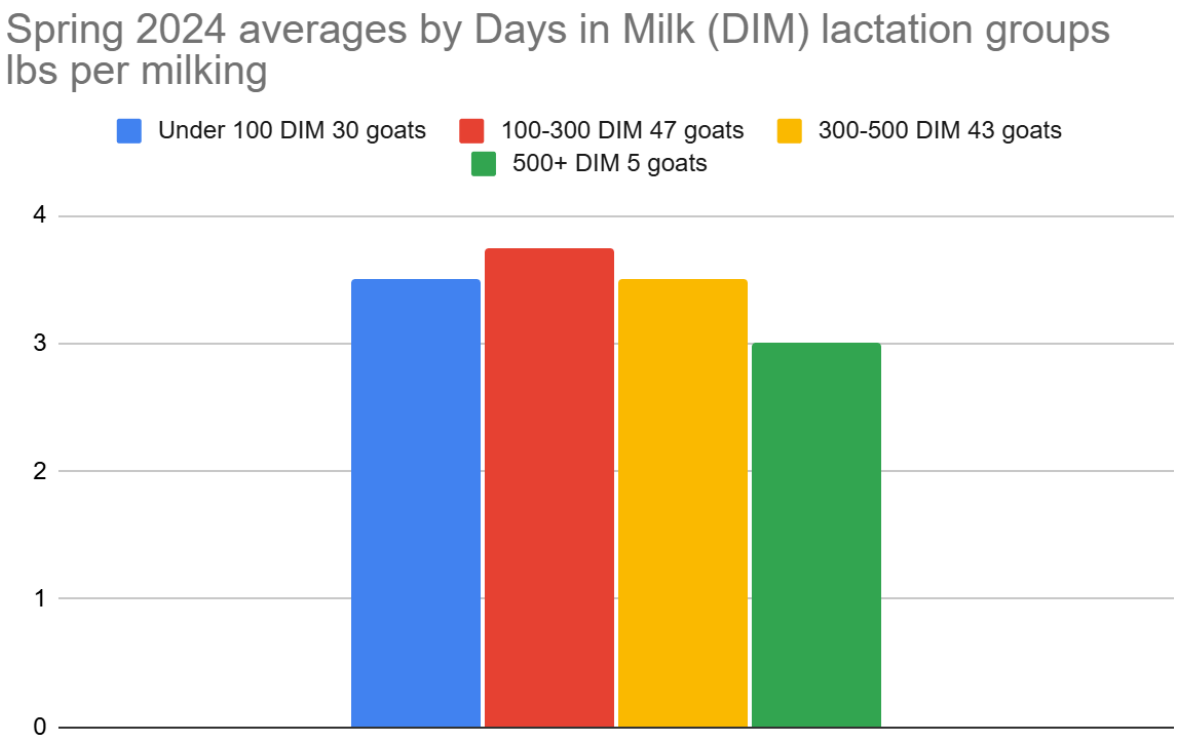
What we found is that there is an initial flush of milk when a goat is recently fresh, but after about six months her production plateaus. As the chart indicates, once we hit the fall, all groups were essentially producing the same. The yellow line is the “extended group”. It was our observation that in most cases if the animal is not re-bred her production will continue on that plateau. This is evidenced in Tup’s Crossing chart below, comparing volume across various groups:



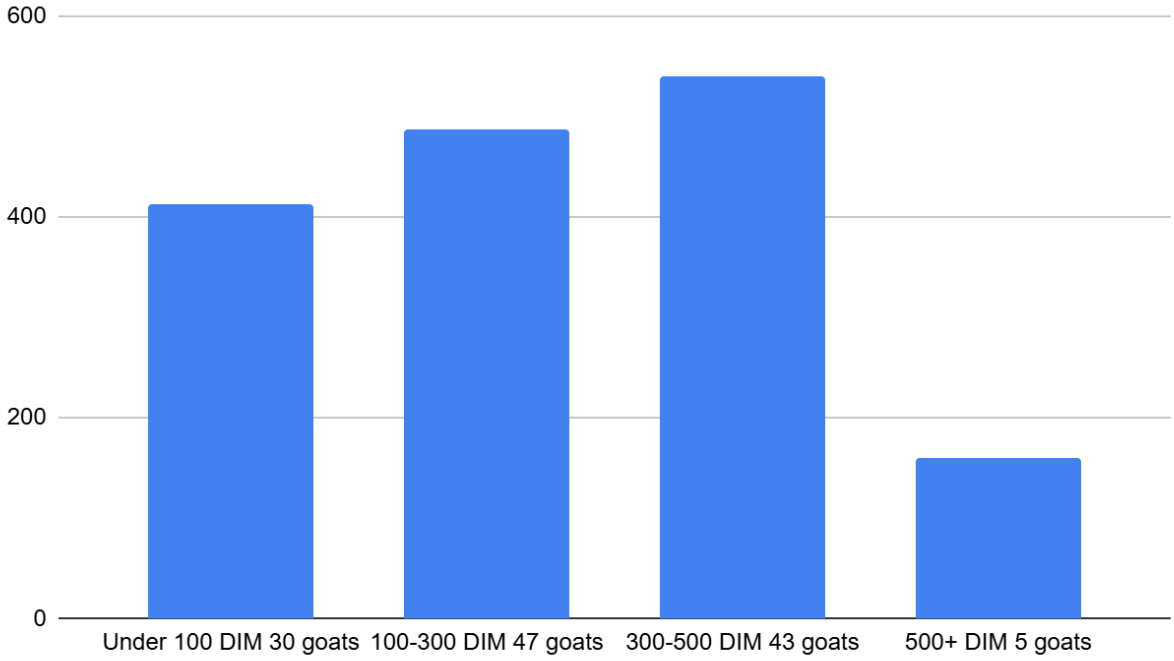
Drilling down, in this graph below I have followed the production of two individual goats in my extended lactation group as evidence of this point. “Mariah” is a high producer who I was hesitant to not breed back due to her excellent production, but as you can see though she has dipped from her peak of 14 lbs, she is still making over 10 lbs per day nearly a year and a half into her lactation. “Alfalfa” is an average producer, and you can see here that she is still pulling her weight at over 5 lbs/day eighteen months into her lactation.

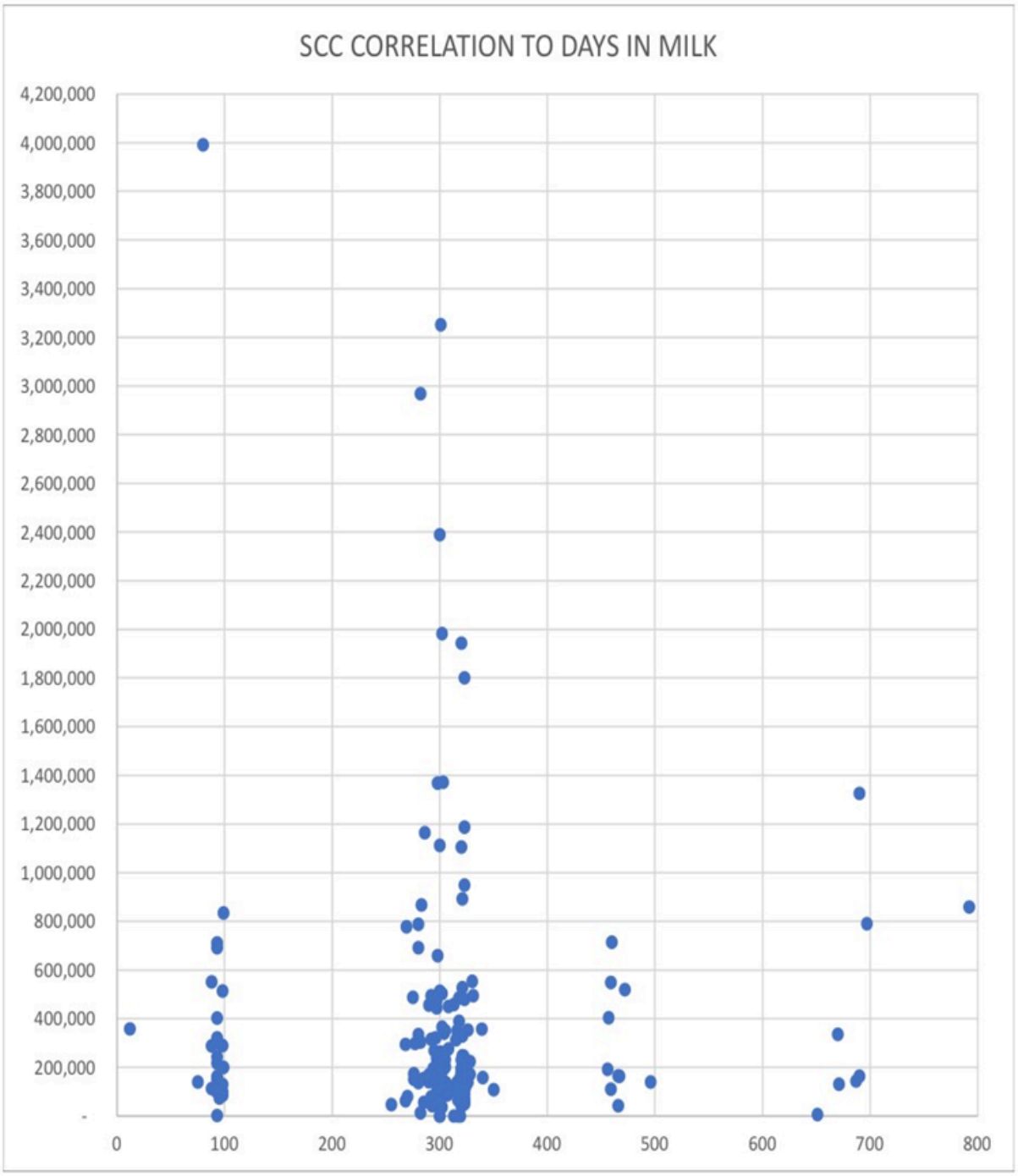


This chart from Blue Ledge also exemplifies that finding: the goats who are 300-500 Days in Milk are producing less than the “fresher” goats, but not substantially.



Somatic Cell:
One concern we had going into this study is would we see a dramatic spike in SCC (Somatic Cell Counts) once a goat was entering her second year of lactation. Any goat milk producer should be extremely tuned into Somatic Cell count; not only is it an indicator of animal health but low somatic cell counts will earn you premiums on your milk checks, and make quality cheese, milk or yogurt for consumption.What we found on both farms was there was NO spike in somatic cell count, in fact sometimes the cell counts were lower the farther into a lactation a goat was. Maybe this is due to lack of “wear and tear” on a high producing fresh mammary system, maybe a lack of stress the farther a goat gets away from freshening, and **certainly** it is due to the goat not being pregnant. These charts indicate those findings.


Spring 2024 Somatic Cell Count Averages among different DIM groups
600
400
200
0
Under 100 DIM 30 goats
100-300 DIM 47 goats
300-500 DIM 43 goats
500+ DIM 5 goats

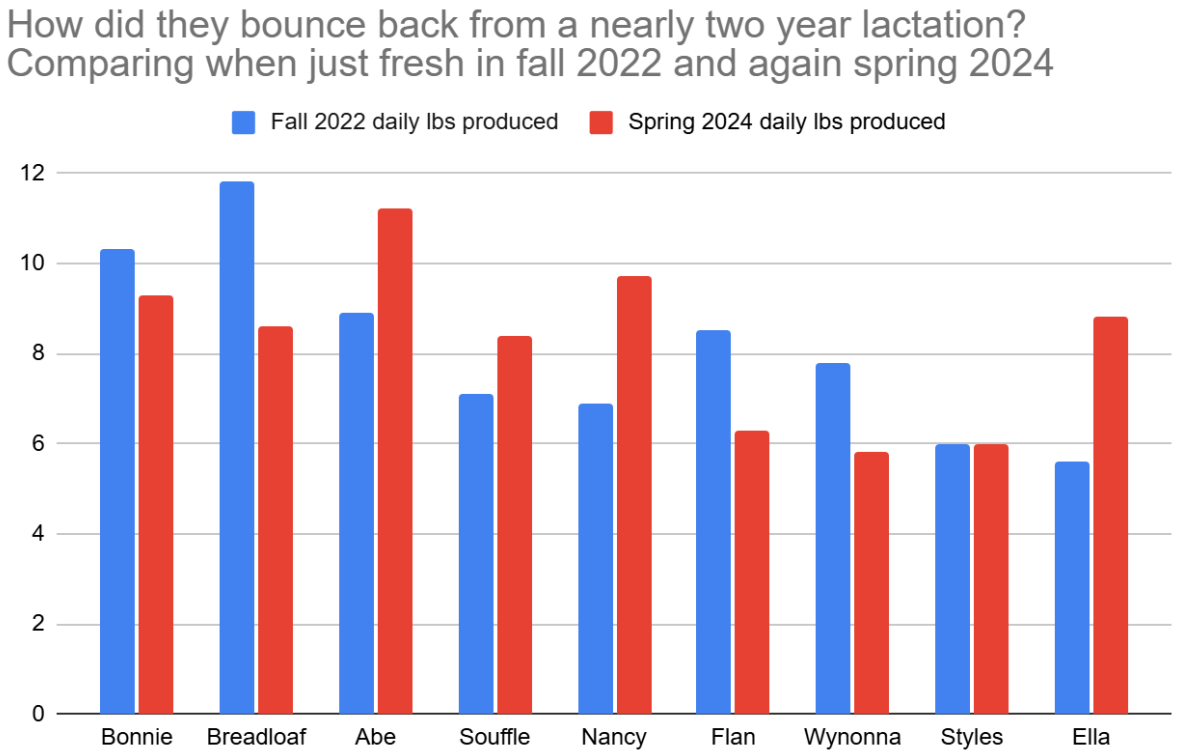


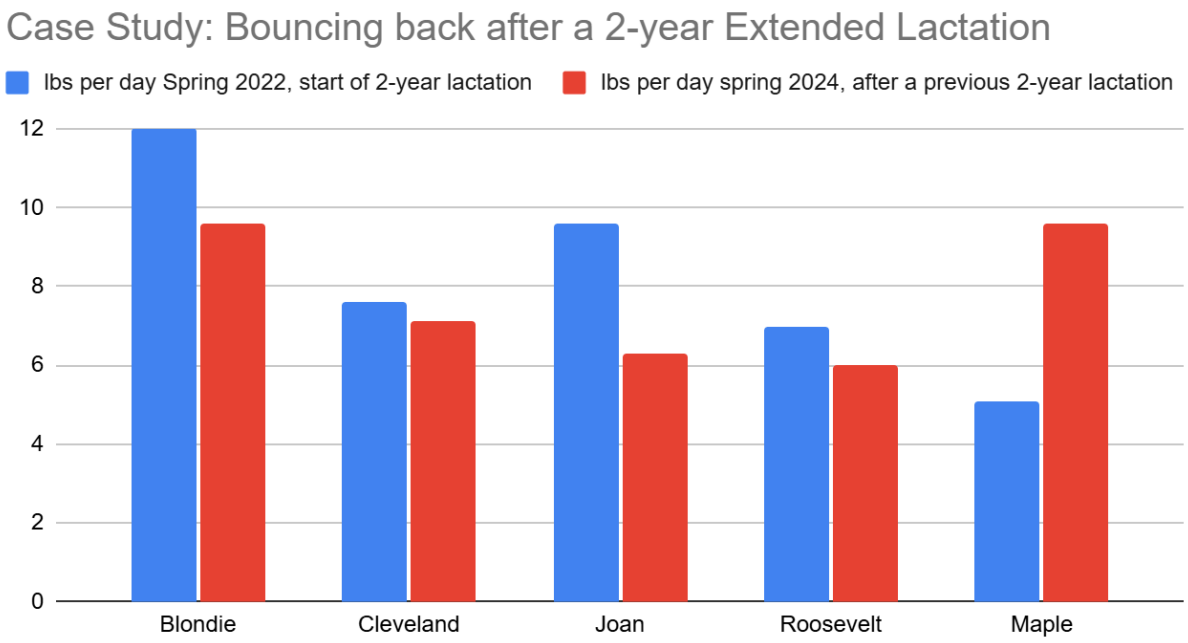
Referencing our findings that long lactations don't result in higher SCC and don't always mean severe production drops Holly notes: It seems as if past a certain length, the lactation seems to find a base point and not continue to fall beneath that. This is interesting financially - and we've already seen that SCC does not necessarily go up with lactation length so you could

hypothetically keep some animals on a 2nd or 3rd lactation for a VERY LONG TIME without needing to rebreed them as long as their "base point" is still "paying their way."

Another concern we had when beginning this study is regarding something we had heard about goats **not breeding back or producing well** after an extended lactation. So this was something we wanted to track. In terms of breeding back: at Tup's Crossing, out of the 140 total (all groups) extended lactation goats, 84 bred back (60%), 35 are still milking (25%), and 21 were sold (15%). At Blue Ledge we ran bucks in with breed-back goats for just 6 days and still 46% of extended group bred back, 27% are still milking and 27% were sold (most of these older does). In the future I will separate the herd and keep bucks with breed-back group longer to catch more heat.

In terms of "bounce back" production (production in a lactation after a long lactation) this chart follows a cohort of goats from my extended group, and tracks their daily production at the onset of their extended lactation (whether in the spring or the fall of 2022) and again at the onset of this most recent lactation so I can see how they "bounce back".

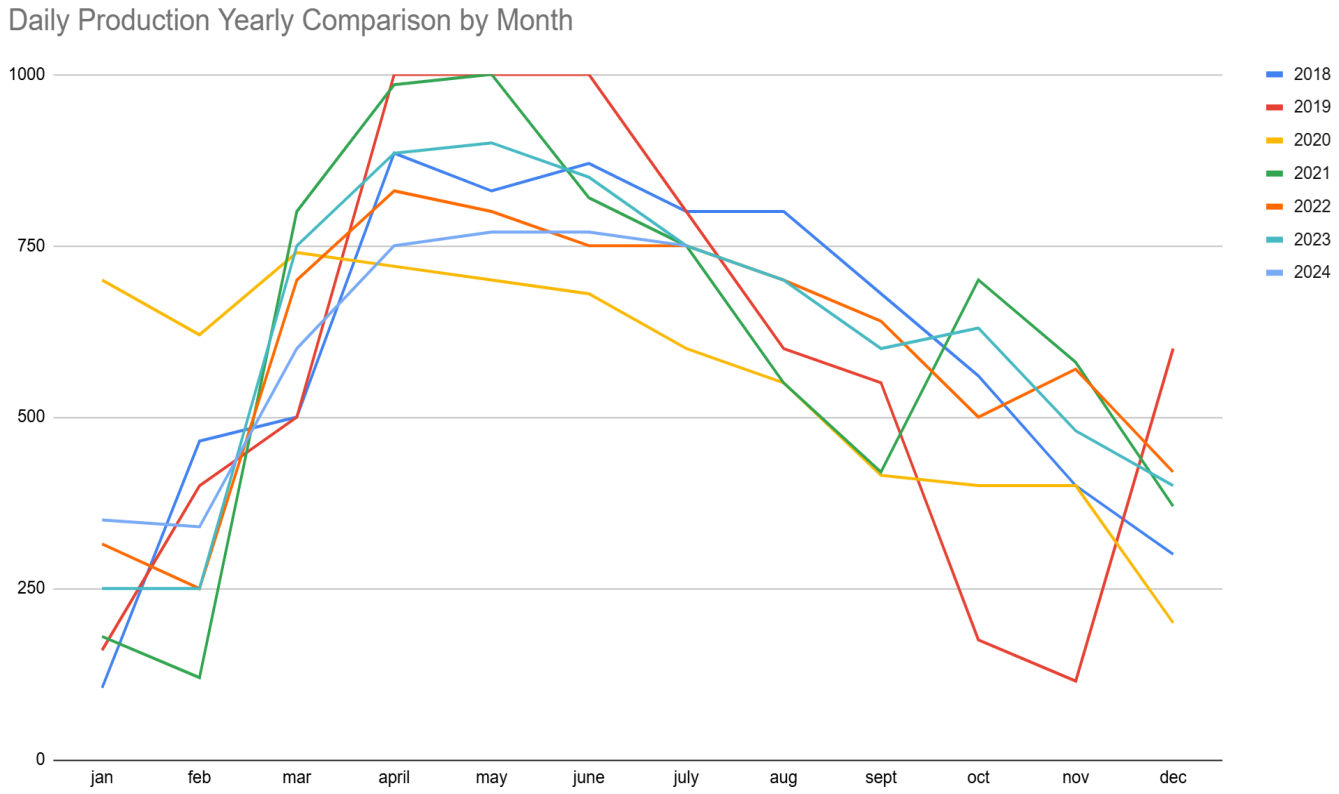




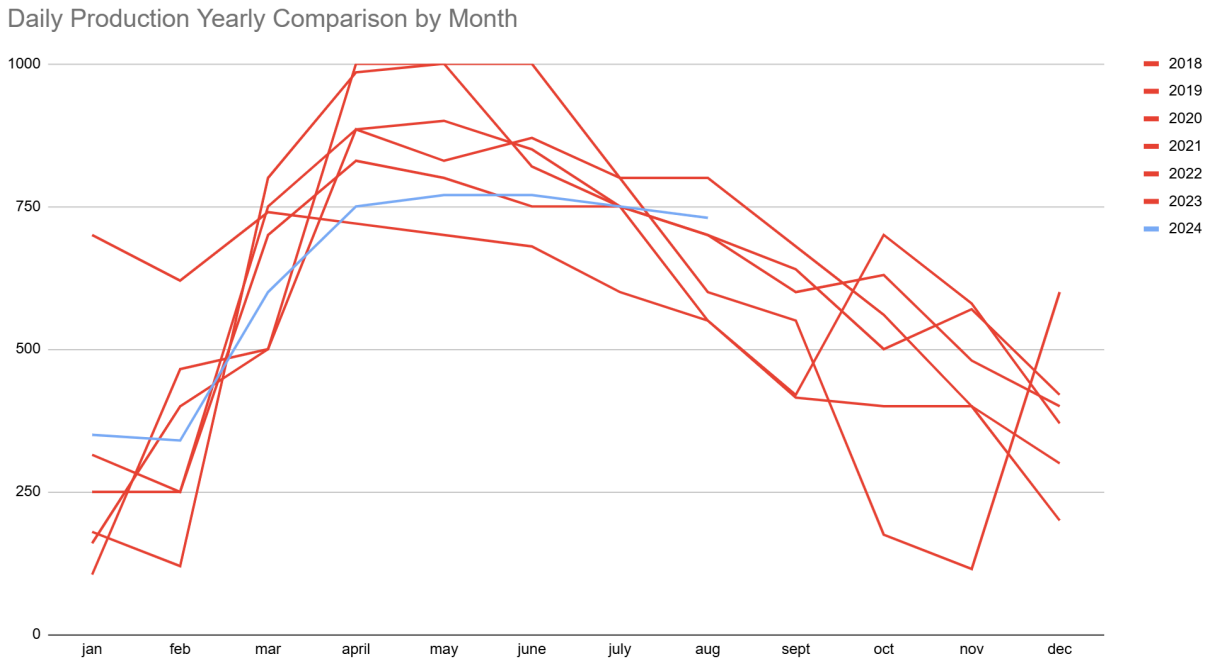
You can see that some are producing more this lactation and some less. We are satisfied to chalk this variation up to the individual goat as she ages, changes, etc, and are happy to determine that extended lactation alone does NOT prohibit a goat from breeding back and producing up to her potential again.

Another potential pitfall of a long lactation is a loss of body score- either under or over weight. Over the course of study we noticed **no** significant difference in body score with the long lactation does versus the shorter lactation. As long as the doe keeps up her production she maintains good condition.

The other goal of this project was to explore the benefits of a **more even milk supply**, without the peaks and valleys of a more seasonal annual lactation. The largest buyer of goat milk in the area, Vermont Creamery, pays a premium for winter goat milk, and so a farm that can provide milk in the winter will establish a quota price that benefits them financially all year. As a cheesemaker our goal is to meet market demand all year, and also provide a steady stream of work for ourselves and our employees (not too little and not too much!). There will always be more milk made in the summer when pastures are fresh, temps are warmer, and days are longer but this chart shows our production over eight years, and as we have slowly incorporated fall freshening (in 2019 and 2020) and now extended lactation (2022 on) we have started to lower the peaks and fill in the valleys of production. This allows us to make our higher profit cheeses year round, and helps avoid taxing our employees with too much work at some times of the year and too little in others.



The lightest blue line is the effect of our extended lactation: we started the year at the highest point (without a fall freshening like we had in 2020) and we are on track to maintain through rest of summer into fall. **For easy readability, here is the current year, isolated in blue**:



This production chart (through August of 2024) shows that we are successfully moving towards our goal of flattening the production curve and maintaining a more consistent milk supply year round. We anticipate less of a drop in winter of 2024 than we experienced in 2023 because we will expand our group of extended producers.

Blue Ledge determined that fall freshening was too demanding management-wise, (plus their Animal Welfare Approved label does not allow hormone use to promote estrus and reliably breed out of season) and so we will not pursue it for the most part (though we won't prevent it among dry groups). Tup's Crossing **will** have fall freshening as a part of their management to further pursue the higher quota price in winter months.

Extended lactation **does** involve more intensive management during breeding season: separating goats, keeping good records as to who got bred and what year. In our experience it's worth it. In our research we heard it said that goat farmers should spend as much time managing breeding season as kidding season. This concept has stuck with us throughout this project. A lot of work during the breeding season means a more manageable kidding season and overall a more profitable farm.

It should be noted that one positive by- product of extended lactation for our region could be that if all area farmers committed to fewer pregnancies and therefore offspring every year, we could avoid market saturation and all enjoy more value in goat kids.

In conclusion, after this 18 month indepth look at extended lactation both Blue Ledge and Tup's Crossing Farm feel this is the right fit for their operations. It feels more sustainable to freshen half (or less) of your herd annually, and though one might not have a spring flush of milk, we find

greater benefit in a more even supply of milk year round and in taking advantage of winter premiums. As has been said, in farming the focus should be on profit per animal rather than production, and winter milk is more profitable. We have also found no discernible difference in milk quality or in the does' ability to breed back and produce well in future lactations. We thank the NE-DBIC for the opportunity to delve into this study, and we look forward to continuing to contribute to the community of goat dairy in the region as we further pursue this management of extended lactation.

Hannah Sessions
Holly Menguc