

Herbal Stimulation of Lactation in Llamas

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My farm has had over 250 births since 1987. The vast majority of these were uncomplicated and unassisted births. Through the years, we experienced occasional problems with milking especially in first time mothers. We realized very early that we would need to supplement nutrition at times.

In 2000, we experienced a much higher than usual number of crias that required supplementation. We studied many variables and could not determine the etiology. We had not changed our feed supplement. Our pastures had been reseeded and had minimal fescue growth, which had been a problem five years earlier. We had not changed foliage with our hay supplier. We were forced to supplement some of our proven good milking dams. We entertained the notion that we might have a virus in our breeding herd and treated the entire herd for this reason. 2001 presented us with persistent problems. We were very disappointed in the results of Domperidone treatments. We elected to do no breeding for one year as a result. There is nothing more frustrating than having to supplement a cria.

Around that time it had been suggested that herbs given before delivery were an effective means to stimulate milk production in llamas. We spoke with other farms to determine their experience with herbs and got mixed and primarily negative or subjective comments. There did not seem to be a uniform program used by these farms and no objective criterion to measure success. After an extensive literature search of the limited information available, we decided to try it in our herd. We developed our own protocol based on our experience in breeding llamas. We felt that the female should have exposure to the herbs for a two-week period prior to delivery. To accomplish this, we elected to start herbs four weeks before the due dates, knowing that crias can come several weeks early or late. We decided to continue herbs in the diet for a total of six weeks for each prospective mother to achieve additional stimulation after birthing.

Our initial herbal blend included fennel, fenugreek, dill, and caraway seeds along with chopped and shifted basil and red raspberry leaves. We had always offered our females a daily ration of one pound of feed supplement with ¼ pound of cracked corn and ¼ pound of rolled oats during the last four weeks of pregnancy and elected to continue that program along with 4 ounces of herbs. It was a challenge to mix the herbs with the feed. A large wooden spatula was helpful. We found that all of the pregnant females readily accepted the new feed ration when it was thoroughly mixed together.

Our next crop of crias exceeded our expectations. We had rarely experienced a one-pound weight gain 24 hours after birth and were accustomed to a weight loss during this period of adjustment for the cria and mother. Almost every mother had a prominent bulge of her milk bag after two weeks of herbs. No cria had to be supplemented. We

decided the expense of the herbs justified the results. We discussed our results with several other farms and they wished to try it. We found that by purchasing large lots of herbs we could achieve a considerable savings on the cost of herbs. Thus, the herbal cooperative was born. Over 2,200 pounds were used by the cooperative in 2004.

We have extensive weight data on our crias and on the llama herd in general. Every time that we halter an animal, they are weighed. In addition, weights are obtained each time a llama is transported, medicated, nails trimmed or sheared. From these data we were able to determine objective observations as to the effectiveness of herbs in stimulating milk production.

Our evaluation is the result of a five-year study. We had a three-year period (1999-2001) where herbs were not used. No breeding was done for 2002 and herbs were added in the 2003-2004 years. The early years served as our control data and the later years were our treatment data.

A total of seventeen mothers were included in the study. Ten of the mothers had crias in both the control and treatment arms of the study. Control studies include 18 crias born between 1999 and 2001 in which no herbs were used. 39% (7/18) of this group involved first-time mothers. Test animals included 19 crias born between 2003 and 2004. Herbs were included in the daily ration for 40 days starting 30 days before the expected time of delivery. 21% (4/19) of this group were first-time mothers. There were 14 (38%) male and 23 (62%) female crias involved in the study.

Tubed supplementation involves IgG, Pasteurized Vitamin D whole cow's milk, or both. Our farm criterion for tubing crias includes: no nursing within 4-6 hours of birth; no weight gain or a weight loss 48 hours after birth; or any cria unable to nurse for any reason. It should be noted that all of the weights recorded for tubed animals was enhanced by the supplementation. All weights were recorded before the cria was tubed. In addition all crias are creep-fed together for one hour daily starting at one week of age and continued until they are weaned. During that period of creeping, they are separated from the mothers.

OBSERVATIONS

1. Birth weights revealed a 16% increase after herbal stimulation of the mothers.
2. 33% (6/18) of the pre-herb control group of crias required tubed milk supplementation from one to four weeks. One of these was raised on a bottle but stayed with the mother for some nourishment and companionship.
3. 5% (1/19) of the herb-stimulated group required tubing of IgG. The mother had good milk production but the cria was ineffective in its nursing ability during the first 48 hours. We have not had to do tube supplementation
4. of milk since we started using herbs. One of the herb-stimulated mothers, a first time mother, milked her own cria in addition to an orphaned (at five weeks) cria.

5. Growth curves showed consistent average increases in weight at all ages when comparing the herbal-stimulated test group to the control group.
6. Growth curves in first-time mothers also showed increases in average weight at all ages comparing the herbal-stimulated test group to the control group.
7. Six month average weaning weight in the test group was up by 20 pounds (14%) as compared to the average weaning weight of the control group.

CONCLUSION

While we have never determined the precise reason for our earlier milking problems, we have become convinced that we will continue to use herbs for milk stimulation in our breeding program. The current expense is \$50.00/pregnant mother. Mothers that were good milking mothers before are even better after herbs. It is such a joy to have a big strong healthy cria that nurses on its own from a steady source of natural milk and our only requirement is to stand back and watch it grow.

Red raspberry leaves were recently removed from the herbal mix. They do not mix well with feed and have no galactogogue (milk-stimulating) properties. We are also concerned about its ability to stimulate uterine muscle relaxation. This herb blend as been used by owners in alpacas and the have reported positive results. Alpacas are given 2 ounces of herbs a day. Preliminary reports indicate that both alpacas and llamas readily accept the herbal-enriched feed in pellet form. It is anticipated that we will obtain equal benefits from this mix.