

Put your money where your mouth is: How to develop an effective management program for large sheep and goat herds with a limited budget

Andrea Mongini, DVM MS

M&M Veterinary Practice, 5213 S Gratton Road, Denair, CA 95316

Abstract

An effective herd health program fulfills the same goals, regardless of the herd size and species. As a veterinarian, our goal is to educate clients and producers on how to implement a working management program that meets the needs of the animals and owners. Cost and ease of implementation are the 2 factors that are of greatest concern in any herd. While herds vary from small backyard herds to large commercial herds, the goal should be the same—maximize production, efficiency, and profits while minimizing disease, medications given, and involuntary culls. Large herds have different challenges due to less single-animal attention and a need for a total herd approach.

Key words: sheep, goats, small ruminants, management, herd health

Résumé

Un programme efficace de santé du troupeau comporte les même buts peu importe la taille du troupeau ou l'espèce. En tant que vétérinaires, notre but est d'éduquer les clients et les producteurs sur l'établissement d'un programme pratique de gestion qui rencontre les besoins des animaux et des propriétaires. Le coût et la facilité de mise en œuvre sont les deux facteurs qui sont le plus préoccupants dans n'importe quel troupeau. Bien que les troupeaux varient énormément en taille, des plus petits troupeaux d'arrière-cour jusqu'aux grands troupeaux commerciaux, le but devrait rester le même : maximiser la production, l'efficacité et le profit tout en minimisant la maladie, les médicaments donnés et la réforme involontaire. Les grands troupeaux font face à des défis différents en raison de l'attention réduite portée à chaque animal et nécessitent une approche de troupeau entier.

Building the Case for a Health Management Plan

Large herds of sheep and goats commonly neglect herd health management due to the impression that dis-

ease management is 'too expensive'. Labor is a precious resource on goat dairies, and in large sheep operations it is often minimized. Both the impression of expensive testing and deficient labor create an environment where herd health is underplayed, and the result is widespread disease incidence with a reactionary approach to management. Goats are culled due to end-stage caprine arthritis-encephalitis virus (CAEV) infection. Ewes are culled because they have chronic pneumonia or cannot raise lambs due to ovine progressive pneumonia (OPP), and chronic wasting from Johnes's disease also forces culling. As a resourceful veterinarian, our charge is to bridge the gap between what can be afforded and what works.

The first step in developing a herd health program is to identify the diseases present and put a number on the economic loss from the disease. Quantifying the loss due a disease is likely to be the best way of convincing a producer of the value of working to control the disease. Keep in mind that eradication may not always be the goal. Control and management may be the primary goals, with a long-term goal of eradication. For example, many commercial large goat dairies have a high incidence of CAEV infection. The primary goal is not eradication, but prevention of spread to the kids via contact with the dam or through ingestion of infected milk.

Once the diseases are identified, make a prioritized action list to determine the importance of each disease to the overall herd health. For instance, *Mycoplasma mycoides mycoides* control is a top priority in a goat herd, and takes precedent over management of Johnes's disease. A well-structured action plan helps quantify and measure what is present and the progression of the control program. Large herds are motivated by the bottom line. The cost of controlling the disease will be the primary concern of a large producer. Many producers do not recognize the hidden 'cost' of a disease on lost production, early culling, and reduced rate of gain. In addition, the industry may have a low standard of care. Large commercial California goat dairies tend to have a high incidence of CAEV and contagious lymphadenitis (CL). The presence of these diseases is 'normal'. The challenge as a veterinarian lies in educating the producer enough to convince them that control is worthwhile.

Routine surveillance testing is an essential part of any herd health program. Knowledge of what diseases are present will support the action list approach. Are new diseases emerging? Are you identifying less of a certain disease? The herd health action list should be re-evaluated and updated as needed, but ideally every 6 months the veterinarian, owner, and herd manager should sit down and go over the progress and failure within the program.

Practical Approach to Health Management

Whole-herd testing is generally not economically feasible in large herds. While small herds often test annually and cull positive animals, this is unrealistic for large herds. When beginning a program for a large herd, the initial goal is to limit spread. If possible, a clinically positive string or herd is created. This includes any goats or sheep with signs of disease. Make sure there are no sources of contact between this string and the healthier animals or young stock; this includes fence lines, feed mangers, water troughs, and exit lanes. Organisms like *Corynebacterium pseudotuberculosis* can persist in fences, feeders, shade trees, and barns for extended periods of time. Once a pen is contaminated, it cannot house 'negative animals'. Success in the disease eradication/management program is very important. Continual reinfection makes any efforts pointless, and the owner or manager will abandon the program. A working program will ensure your success and that of your clients.

Sheep and goats have a short interval between birth and entry into the herd. With good nutrition, youngstock can be bred by 7 to 8 months and give birth as yearlings. This is the most important element to keep in mind when implementing a program. If one year is spent actively managing kids or lambs, they can replace most of the herd and positive adults can then be culled. The difficulty most producers face is finding a way to completely separate youngstock from adults. In a dairy setting, this can be managed by pasteurized rearing all kids and lambs. It is important to include colostrum management in the program. Some producers feed cow colostrum, while others heat-treat the colostrum from their herd. Since it is not always practical to be present for all births, taping teat ends of does or ewes in labor will prevent nursing and contamination.

As long as the pasteurized rearing program works and is continually monitored, the doelings or ewe lambs will become the future for the herd. The breeding stock (rams or bucks) must also be accounted for. New, negative males must be purchased that are used only to breed the youngsters. This is a common place where the programs fail.

Every aspect of the flow of animals and how they are handled must be accounted for. Human traffic must

also be reviewed to ensure people are not travelling from positive strings to negative strings. In an intensive system like a dairy, the level of management has to increase to a level where all steps are accounted for. All animals need ID, and you must be able to trace each step of the animal's life through the system. If you approach all operations with this mindset, you can make a viable program for any farm. Most farms will have some variation of the same program, but the exact same program seldom works on all operations.

With dam-reared systems like range sheep or meat goats, control becomes a bit more complicated. Some level of disease surveillance testing needs to occur at the start to determine the organisms present. Ultimately, a management program will encompass control of all transmissible diseases, so the necessity of testing is only to establish a starting point. The fundamentals of an extensive program include individual animal IDs, the ability to run separate herds or flocks, and a willingness to not save replacements from known positive animals. This final point can be modified and often is. Many producers will save all replacements, which means that there must be 2 separate herds at all times. The disease incidence and economic situation of the producer will ultimately determine how aggressive a program like this will be. I have found that many herds perform a screening test to determine disease incidence, then come back later to work towards a negative herd. Many producers need time to make the decision of liquidating positive animals, but the economics of negative breeding stock are highly marketable.

In a herd where chronically infected goats or sheep are present, they must immediately go into a cull string. The ground they graze should always be considered 'positive', at least at the start of the program. Next, herds should be separated into first freshening and mature goat/sheep strings. Due to cross-nursing of youngstock in dam-reared systems, it can be very difficult to limit spread of organisms such as *Staphylococcus aureus* and mycoplasma. The most cost effective way to prevent spread is to kid or lamb in individual jugs, then CMT (California Mastitis Test) all does or ewes prior to release. Any CMT > 1 should be sampled and cultured. Those females then are culled if mycoplasma or *Staph aureus* is grown. Some producers choose to keep all staph-positive females in the 'positive herd', however this is not advised due to the high incidence of gangrenous mastitis and resulting death or starve-out of kids/lambs. Many of these kids or lambs will nurse other dams due to hunger, and further spread the mastitis in the herd. For this reason, kids are permanently positive and does should be culled whenever possible.

When implementing a large herd management program, the most important factor to emphasize is that the plan will continually change. A review every 6 to 12

months should occur to re-evaluate progress and feasibility. Factors such as labor, time of year, feed sources, and stage of production will affect how the same program is implemented. Flexibility in a management scheme is the success and failure of any functional program. Managing the flexibility is the role of the veterinarian, since you know where the critical control points are and how those can affect the transmission of disease.

Conclusions

The following points should be addressed in any program:

- 1) ID all animals in the herd.
- 2) Keep records for all illness, treatments, culls, and deaths.
- 3) Routinely monitor dead animals, even if this is an annual event. Any outbreaks must be sampled, necropsied, and diagnosed.
- 4) Separate clinically infected from healthy-appearing sheep or goats.
- 5) Prevent fence-line contact and sharing of water or feed troughs between groups.

- 6) Raise youngstock in a pasteurized reared system (for dairy).
- 7) Vaccinate the whole herd for CL. All does or ewes with previous abscesses (or current) must be in the 'positive' string or herd for life.
- 8) Females born in the 'positive' herd must be culled or never leave the positive string. Herd expansion only occurs from the negative herd.
- 9) Testing and culling is essential for bucks kept or purchased as breeding stock. No mixing of breeding bucks between positive and negative herds/strings.
- 10) Nutrition management and mineral supplementation must be reviewed to ensure health is optimal. Nutritional stress will increase shedding of infectious organisms and disease transmission. Underfeeding and poorly balanced diets are common on goat dairies.

Of all the points discussed in this paper, good management is the key to a healthy, productive herd. Although testing is an integral part of any program, the focus of developing a clean herd lies in managing the positive goats or sheep and raising negative offspring.