

Health Management in Goats and Sheep

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Small ruminants are foundational to livestock agriculture worldwide, but they require attentive health management to thrive. Sheep and goats face nutritional, infectious, and parasitic challenges that affect their growth, reproduction, and survival. Effective health programs integrate good nutrition, biosecurity, vaccination, and parasite control. For example, vaccinating pregnant ewes/does against clostridial diseases two to four weeks before lambing (providing maternal antibodies to newborns) is a cornerstone of flock health. Equally important are regular deworming schedules, housing hygiene, and reproductive monitoring. In this article we explore the key elements of a comprehensive health plan for sheep and goats, drawing on extension guides, research, and case studies to offer practical, magazine-style insights.



Fig. 1. Goats and sheep grazing together in a pasture

Nutrition and Pasture Management

Good nutrition underpins disease resistance. Sheep and goats need a balanced diet of energy, protein, vitamins, and minerals. When nutrition is inadequate, animals become susceptible to parasites and infections. Ensure access to quality forage (pasture or hay) with adequate crude protein (at least 10–12% in forage) and energy. In dry seasons or intensively managed flocks, supplements (grains, commercial pelleted feed) provide needed calories. Minerals like salt, calcium and phosphorus must be available free-choice; deficiencies of copper or selenium can cause reproductive losses and weak lambs.

Rotational grazing is an important management tool. By periodically moving flocks to fresh pasture, farmers reduce parasite exposure (worms and liver flukes often build

up in one field over time). Studies show that alternating sheep with cattle on pasture can lower parasite burdens, since many small-ruminant worms do not infect cattle. Raising hay or cover crops for winter feed also helps maintain condition and prevents parasites that multiply in moist pastures. Providing clean drinking water and shelter from severe weather (rain, wind, heat) is part of good husbandry. Animals under stress (cold, heat, thirst) often eat less and fight off infections poorly, so ensuring comfort leads to better health outcomes.

A Brief Case Study: In New Zealand, rotating lambs onto clean pasture after weaning dramatically cut fecal worm egg counts and improved growth. This simple change reduced anthelmintic use by 50% compared to continuous grazing.

Vaccination and Preventive Care

A targeted vaccination program is crucial. The Maryland extension guide notes that the “only universally recommended vaccine” in sheep and goats is CDT (Clostridium *perfringens* types C & D and tetanus). This toxoid vaccine protects newborns from deadly enterotoxemia (pulpy kidney) and dams from tetanus.

Recommendations: Vaccinate ewes/does 2–4 weeks before lambing/kidding to confer passive immunity to lambs/kids. Lambs born to vaccinated mothers should then receive their own CDT shots at 6–8 weeks of age, with a booster 2–4 weeks later. Ram and buck breeders should be booster-vaccinated annually. In areas with extra clostridial risks, 7- or 8-way clostridial vaccines (adding blackleg, malignant edema, etc.) can be used after consultation with a vet. Other core vaccines depend on region and production stage. For example, vaccination against *Campylobacter fetus* (vibrio) and *Chlamydia* is recommended for ewes/does before breeding to prevent abortion storms. Most breeders also vaccinate for caseous lymphadenitis (CLA) if the disease is present, and for rabies or foot rot when needed. The NMSU schedule suggests vaccinating breeding animals (ewes, does, rams, bucks) 1–2 months before the breeding season with multivalent shots including clostridial 8-way and anthelmintics. Pregnant females should receive only the vaccines labeled safe for them; cattle vaccines are sometimes adapted for sheep/goats under veterinary advice.

Regular health checks and biosecurity complete the package. Ewes and does should be quarantined and

examined before introducing into the flock. Sick animals must be isolated promptly to prevent spread. Foot baths (e.g. zinc sulfate for foot rot) and routine hoof trimming prevent lameness. Crucially, when using vaccines or medications, read all labels carefully and follow recommended doses and intervals. Extension sources emphasize consistent, herd-wide protocols: avoid under-dosing (which breeds parasite resistance) by weighing animals and calibrating equipment.

Parasite Control

Worms and external parasites are major concerns for sheep and goats. Gastrointestinal nematodes (especially *Haemonchus contortus*, the barber-pole worm) can cause anemia, weight loss, and death. Effective parasite control is integrated combines strategic deworming with management. Experts recommend *fecal egg counts* to monitor worm burdens rather than routine blanket deworming. By testing fecal samples, farmers can determine which animals truly need treatment and avoid unnecessary dewormer use, slowing resistance. When deworming is needed, use the proper dose (based on the heaviest animal weight) and rotate drug classes to avoid resistance. NMSU Extension emphasizes consistency in deworming protocol and warns that under-dosing leads to resistant worm populations.

Five-Point Check: The FAMACHA system (eye color chart to detect anemia) and Body Condition Scoring allow targeted treatments for worms. For instance, only animals with pale eyelids (severe anemia) would be dewormed, while others are left untreated. This selection slows development of drug resistance.

Pasture management complements medication. In addition to rotational grazing, extending rest periods between grazing a pasture by sheep/goats (or using alternate livestock species) interrupts the parasite life cycle. For example, some systems alternate sheep with cattle or even poultry to “dilute” the worm life cycle. Keeping pastures short (intensively grazed) during hot, dry seasons can break the cycle of larvae on grass. Feeding from feeders or browse can also reduce worm uptake from pasture. In colder climates, winter-time pasture rest naturally reduces worm loads. External parasites (lice, mites, keds, ticks) require treatment at specific times. Shearing helps expose and allow topical treatments (e.g. insecticidal sprays or pour-on ivermectins). Permethrin-based pour-ons or sprays are effective for lice and keds. Goats are particularly sensitive to some pesticides, so always use products labeled for small ruminants (e.g. permethrin rather than pyrethroids on dairy goats). In tick-infested areas, combination strategies (acaricide waps, pasture rotation to break tick lifecycles) are used.

Reproductive Health and Life-stage Care

Breeding management is part of health care. Pregnant ewes/does need good nutrition (additional protein and energy in late gestation) to support fetal growth and colostrum production. Trace minerals (especially copper for sheep) should be monitored to avoid deficiencies that cause abortions or weak lambs. Dystocia (difficult birth) is a risk if lambs are too large; restricting energy in late gestation or breeding smaller rams can help prevent oversized lambs.

At birth, best practices include tail docking and castration (often with proper pain control) at a few days old, ensuring that tetanus antitoxin is given if the dam was unvaccinated. Newborn lambs/kids require colostrum within 6–12 hours for immunity. If maternal colostrum is insufficient, administration of colostrum substitutes or banked colostrum can save lives. Keep neonatal lambs/ kids warm and dry—hypothermia and starvation (“cold stress”) are common killers. For example, in very cold weather, lamb jackets or heated lamps in pens can improve survival.

Pregnant females also need attention: vaccinating for enterotoxemia (CDT) and tetanus 2–4 weeks pre-lambing is mandatory. In addition, NMSU advises that pregnant ewes receive vitamin E/selenium injections if grazing on Se-deficient soil, to prevent white muscle disease in lambs. Nutrition throughout lactation must remain high; milk-producing animals should be fed for optimal milk yield, especially those in confinement. For buck and ram health, clear-out and disease testing are wise after each breeding season. Breeder males should be in good condition before the next season, with parasite burden controlled (de-wormed) at least one month prior to breeding. This ensures peak fertility and prevents transmission of venereal diseases.

Conclusion

In conclusion, a successful health management program for small ruminants must be proactive, continuous, and integrated, combining nutrition, preventive healthcare, biosecurity, reproductive planning, and systematic record keeping. Proper nutrition forms the foundation of herd health, with balanced rations supported by free-choice mineral mixtures and access to clean water. Special attention should be given to pregnant, lactating, and growing animals through strategic supplementation and regular monitoring of body condition scores to ensure optimal productivity. Preventive vaccination programs play a critical role in minimizing disease risks; therefore, producers should follow stage-based vaccination schedules, including core vaccines such as CDT administered before lambing and annually for breeding stock, along with region-specific vaccines tailored to local disease prevalence. Maintaining vaccine cold-chain integrity and accurate health records is essential for ensuring

effectiveness and traceability. Effective parasite management requires periodic monitoring through fecal egg counts, strategic deworming based on targeted treatment approaches, and rotation of anthelmintic drug classes to reduce resistance development. Complementary practices such as rotational grazing, adequate pasture rest, and routine hoof inspection, particularly during high-risk seasons, contribute significantly to overall flock health and mobility. Biosecurity measures remain a cornerstone of disease prevention, emphasizing quarantine of newly purchased or returning animals for at least two to three weeks, disinfection of equipment and clothing, and controlled access to farm premises to limit pathogen introduction. Reproductive health management further strengthens flock productivity through timely vaccination against abortifacient diseases prior to breeding, appropriate pre-lambing immunization, controlled breeding seasons where feasible, and nutritional support during late gestation.

Accurate and consistent record keeping enables farmers to monitor production parameters such as birth rates, mortality, disease incidence, treatment outcomes, milk yield, and growth performance. These records allow early detection of abnormal trends, such as increased abortion rates or reduced growth, facilitating timely intervention and informed decision-making. Continuous farmer education and awareness are equally important, as trained handlers are better equipped to recognize early signs of illness through routine observation of feeding behaviour, alertness, posture, and gait. Ultimately, adopting a holistic and locally adapted herd health strategy, developed in consultation with veterinarians and extension specialists, ensures sustainable productivity, improved animal welfare, and enhanced profitability in sheep and goat farming systems.
