on the view that growth in goats is maximized when feeding strategies are designed holistically, aligning diet formulation, management, health, genetics, and environment.

Despite substantial progress, existing studies on feeding strategies for goats exhibit several methodological and contextual limitations. Many experiments are short-term and focus on immediate growth responses rather than lifetime performance, carcass quality, or long-term health outcomes. Sample sizes are often modest, and experimental conditions may not reflect the diversity of real-world production systems, especially in smallholder or resource-limited settings. Furthermore, results generated in one breed or cross are commonly extrapolated to others without rigorously accounting for genetic and physiological differences. This reduces the generalizability of reported feeding recommendations. There is also a lack of standardized protocols for evaluating growth performance and feed efficiency, complicating comparisons across studies and meta-analyses. Economic assessments, including cost–benefit analyses of feed interventions, are frequently underdeveloped or omitted, limiting the practical applicability for farmers and advisors. Environmental dimensions, such as greenhouse gas emissions, nutrient excretion, and resource use efficiency, are not consistently integrated into feeding trials. Finally, interactions among nutrition, disease dynamics, housing design, and climate-related stress are often studied in isolation, leaving important knowledge gaps on how combined interventions influence growth and sustainability.

Future research on feeding strategies for goats is likely to move toward more integrated, systems-based approaches that address productivity, animal welfare, economic viability, and environmental impact simultaneously. There is a growing need for long-term, multi-site trials that examine how diet formulation, feeding frequency, and management practices perform across different breeds, climates, and production scales. Precision nutrition, supported by digital tools and sensor technologies, offers promising avenues for tailoring diets to individual animals or groups based on real-time assessment of growth, health, and behavior. These approaches could help optimize feed use efficiency while reducing waste and environmental footprints. Another important trend is the incorporation of genomic and molecular tools into nutrition research, enabling better understanding of how genetic variation shapes responses to different diets. This will support breeding programs that explicitly select for traits such as feed efficiency, resilience to nutritional stress, and adaptability to alternative or locally available feed resources. Research on functional feeds, including plant bioactives, probiotics, and other additives, should increasingly focus on their combined effects with management and environmental interventions rather than in isolation. Ultimately, development of context-specific, evidence-based feeding guidelines that consider local feed availability, climate risks, and market demands will be essential for translating scientific advances into practical gains in goat growth performance worldwide.

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Conflict of Interest Disclosure

The author affirms that this research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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