

CURRENT EXPERIMENTS

Recently Conducted, In Progress, or Soon to be Initiated

Dairy Goats

Effect of Change in Early Lactation Dietary Concentrate Level on Dairy Goat Performance

- C Gather dairy goat production information of value in planning and evaluating future experiments focusing on grazing-based production systems
- C Compare effects of two dietary forage levels in early lactation on dairy goat performance
- C Contrast effects of ruminally undegradable protein level in early lactation on dairy goat performance
- C Study interactions of dietary forage and ruminally undegradable protein levels in early lactation on dairy goat performance
- C Determine effects of short-term consumption of a high-forage diet in early lactation on feed intake and performance by lactating dairy goats
- C Investigate the impact of dietary level of ruminally undegradable protein on efficacy of short-term consumption of a high-forage diet in early lactation to improve dairy goat performance

Effects of Dietary Concentrate Level in Late Lactation and the Dry Period on Dairy Goat Production

- C Determine effects of dietary concentrate level in late lactation and the dry period on:
 - < yield of milk and milk composition in late lactation
 - < body weight
 - < reproductive efficiency
 - < subsequent performance in early lactation

Effects of Milk Replacer Feeding Level and Starter Diet Cereal Grain Type on Alpine Kid Performance

- C Determine effects of milk replacer feeding level on Alpine kid performance
- C Investigate differences between corn and oats as basal grain sources in starter diets on Alpine kid performance
- C Study interactions between milk replacer feeding regime and basal starter diet grain source on Alpine kid performance

Withdrawal Time of Drug Preparations for Mastitis Control of Dairy Goats

S. S. Zeng, E. N. Escobar, K. Tesfai, and E. Sullivan

- C To determine milk withdrawal times of commonly used antibiotic preparations for mastitis control and to help federal regulatory agencies establish drug labeling for dairy goats.

Predictive Models for Goat Cheese Yield Based on Milk Composition

S. S. Zeng, E.N. Escobar, S. Hart, T. Sahlu, V. Holsinger, and S. Gilliland

- C To determine the effects of milk composition on the quality and yield of goat cheese.
- C To formulate yield predictive models for goat cheeses (French soft and Colby).
- C To determine the correlation coefficient between predictive and actual cheese yields.

Meat Goats

Effects of Dietary Concentrate Level and Limit-Feeding on Time Patterns of Internal Fat Deposition and Growth by Meat Goats

- C Determine effects on and interactions in internal fat deposition and growth in meat goats of:
 - < dietary concentrate level
 - < level of intake or feed restriction
 - < age or time on feed

Growth Performance and Carcass Characteristics of Boer x Alpine goats

- C Investigate growth rate, feed efficiency, and carcass characteristics of Boer x Alpine goats

Performance and Carcass Characteristics of Spanish x Boer Kids as Influenced by Gender and Age

- C Investigate effects of gender and age on growth performance of Spanish x Boer kids
- C Determine effects of gender and age on carcass characteristics of Spanish x Boer kids

Early Growth of Spanish, Boer x Spanish, and Boer x Angora wethers

- C Determine influences of breed on pre-weaning wether growth and development

Post-Weaning Growth and Carcass Characteristics of Spanish, Boer x Spanish, and Boer x Angora Wethers

- C Investigate differences among Spanish, Boer x Spanish, and Boer x Angora wethers in post-weaning growth
- C Characterize changes with time or age in carcass characteristics of Spanish, Boer x Spanish, and Boer x Angora wethers
- C Study interactions between breed and time or age in post-weaning growth and carcass characteristics, including fatty acid profiles, of meat goat wethers

Improving the Utilization of Sericea Lespedeza by Goats

Sericea lespedeza (*Lespedeza cuneata*) is a perennial legume that has been compared with alfalfa in terms of nutrient content and has the ability to grow in less fertile soils than other legumes. Even so, in some areas, lespedeza is considered a noxious weed due to unwanted spread into pastures and the aversion shown to it by cattle. Lespedeza contains condensed tannins, phenolic compounds that bind proteins decreasing their digestibility. This reduces nitrogen retention in the body, which contributes to the low consumption by cattle. Goats have not shown this aversion, thus, lespedeza can be a feedstuff for goat production. Even though goats will consume lespedeza, the problem of condensed tannins and their negative effects upon digestibility remains. Condensed tannin levels in lespedeza are exacerbated by high environmental temperatures, low rainfall, and increasing maturity. Grazing lespedeza while young is one method of decreasing the impact of condensed tannins on production. An experiment to be carried out from June to September, 1998 will evaluate a chemical method to control the protein-binding abilities of condensed tannins.

Polyethylene glycol (PEG) is a chemical that preferentially binds condensed tannins, thus prohibiting them from forming indigestible complexes with protein and freeing proteins for normal digestion. PEG has been supplemented to sheep and goats at low levels, approximately 100 grams per day, and in practical situations has been fed mixed with a small amount of concentrate or provided with other ingredients as a lick. In addition to pasture forages, PEG supplementation has also been studied with goats consuming browse, referring to forage species such as shinnery oak that contain significant quantities of condensed tannins.

The present study will evaluate intake, digestibility, and nitrogen utilization of goats consuming lespedeza with varying levels of PEG supplementation (0 to 150 grams fed once daily). In addition, two other groups of goats will be fed lespedeza along with a commercial plant tannin to increase dietary tannin intake and simulate consumption of a forage higher in condensed tannins, such as browse. To evaluate dry matter and protein digestibilities, as well as other nutritive parameters of interest, the research will utilize goats with cannulas in the rumen and small intestine, which will allow the addition of chemical markers needed to calculate nutrient digestibility and to sample digesta from these sites.

The results of this experiment will give valuable information on how goats digest condensed tannin-containing forage and also what level of PEG supplementation is required for binding condensed tannins and optimizing protein digestion. From this information, PEG delivery systems for grazing goats can be designed and tested. Increasing the utilization of tannin-containing feedstuffs will also allow the productive grazing of goats on areas heretofore avoided because of the natural plant makeup and also an enhancement of production systems in which goats are used for brush control.

Fiber (Mohair and Cashmere) Goats

Perennial Cool-Season Pastures for Spring Kidding

- C Determine forage production patterns and quality of three perennial cool-season grasses as compared with winter wheat
- C Monitor body weight gain and mohair production of Angora goats grazing cool-season perennial grasses and wheat
- C Investigate physiological responses of lactating Angora does to ruminal bypass protein supplements

Effects of chemical defleecing agents on follicle activity and cashmere growth of Spanish goats

- C Investigate effects of chemical defleecing agents (i.e., epidermal growth factor and mimosine) on follicle activity and fiber growth characteristics of Spanish goats
- C Determine rumen and blood clearance rates of mimosine

Effects of Eu-, Hypo-, and Hyperthyroidism and bST on Mohair Growth and Performance of Angora Goats

- C Investigate effects of bST and thyroid hormone on mohair growth and performance of Angora goats