

Shaping Up Diet and Habitat Selection



Background

The foods that animals eat are not chosen randomly. Livestock form strong preferences for foods and habitats, form strong memories of food locations, and seek those foods out while avoiding others. The process begins early in life when foraging with mom. Offspring form preferences for foods exposed to early in life. Mom is the largest influence in shaping up dietary preferences, beginning in the third trimester when the sensations of taste and smell are active in the womb. Later on in life, peers broaden the dietary preferences of livestock by introducing other food items. Ultimately though, food preferences are based on the consequences to the individual. Those foods that are immediately pleasing (positive postingestive consequences) are preferred and those foods that are associated with unpleasant feedback (nausea) are avoided. Once livestock become mature, they avoid new foods and actively seek out familiar and preferred foods.

Shaping up Preferences

So what? As livestock producers, we can manipulate diet and habitat selection by selecting replacements that consume certain plants and avoid others. We can use supplementation in strategic locations to improve livestock dispersion. We can create aversions to poisonous plants by feeding small amounts and dosing individuals with the drug Lithium Chloride. We can introduce foods that may be unpalatable (juniper, salt cedar) at weaning and develop preference for those foods at weaning. Producers in New Mexico have trained livestock to avoid locoweed by dosing replacement heifers with Lithium Chloride at weaning when they consume locoweed. As long as they graze separate from cows that eat locoweed, they will continue to avoid it. Goats and sheep can be trained to prefer juniper or salt cedar by introducing the plant slowly at weaning. In the case of juniper, goats switched from a diet of grass and forbs to juniper when drought conditions developed while untrained goats switched to liveoak and other browse species. More importantly, goats survived and gained weight on a diet consisting of 100% salt cedar. Once preferences are formed in replacements, they will aid in the training their offspring. Their offspring will select the same foods they select and avoid the same foods they avoid.



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