Research update: Adaptive multi-paddock grazing

Adaptive multi-paddock grazing is a management practice that uses high-density mob grazing with shorter grazing periods and longer recovery periods. Basically, says Dr. Richard Teague, a range ecologist with Texas A&M AgriLife Research, it is rotational grazing but with extra benefits including better performing animals and improved soil health, which in turn improves forage production.

The research

Teague works with producers in Saskatchewan and North Dakota who do not use inorganics and pesticide inputs because they negatively affect soil microorganisms that determine 90 per cent of how ecosystems function. If the function of the soil micro-organisms is impaired, explains Teague, it damages soil structure which affects infiltration rate and water holding capacity as well as soil fertility - all of which affects productivity.

Over a decade, producers in Saskatchewan and North Dakota increased organic matter from less than one per cent to 10 to 12 per cent in an area with 16 inches of rainfall. This resulted in infiltration rates increasing from less than one inch per hour to over eight inches per hour with dramatic improvement in productivity.

Teague stresses that to see improvement on infiltration, it's important not to use chemicals or pesticides because they kill beneficial fungi, microorganisms and insects that create good soil structure and allow for better infiltration.

These researchers are also looking at larger regional ramifications, including mitigating flooding; providing better, and longer, water storage; and improving watershed function. "Research in a north Texas watershed indicated 46 per cent less runoff with good improved soil health provided by good multi-paddock grazing management, as well as improved soil nutrient and water retention," Teague says.

Advice to producers

"One of major things for healthier microbiology is to have multiple species in a pasture," says Teague. "This increases the number of bacterial and fungal species in the soil which adds resilience, productivity and functionality to the soil."

As for the actual lengths of the shorter grazing periods and longer recovery periods, these can't be formulated in advance because weather is always changing and decisions must be made as conditions change. That's what makes the adaptive part of the practice critical.

"You have to look at what's happening, particularly with the plants," says Teague. "You adapt based on what the plant is doing. You need to keep the plants in the vegetative phase without going into the reproductive phase and you need to leave enough so they grow quickly but don't grow to the reproductive phase before you graze again."

To do that, Teague says producers need to develop a grazing plan for normal conditions, but be ready to adapt if conditions change. "For example, if it's wet and the plants grow more quickly

than anticipated they can't stick to the original plan," says Teague. "They may need to only graze a portion of the land area and make hay or silage from the rest so they are always grazing in a good vegetative state."

Hear Teague Speak

Teague will speak more about advanced grazing practices and their impact on soil health, carbon storage and producer profitability at the Canadian Forage and Grassland Association's annual conference in Guelph, Ontario, Nov. 14 to 16.