

Novel Forages a Big Part of Extended Grazing



The field day crowd had lots to think about. Last year this field was in forage that included sweet clover, which choked out the spring seeded turnip and Italian ryegrass. The crop was silaged early July and oats interseeded late July, 35 days before this photo.

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A field day at the end of August with 180-plus participants, many driving more than four hours to get there is uncommon. The event was at Prairie Land and Cattle near Hardisty (about 100km southwest of Wainwright), where manager, Ben Stuart, and his team have been aiming for a cow-calf operation finishing all the calves at 24 to 30 months in a year-round grazing system along with low-input crops. He's not there yet, but he showed how he's running the 16,000 acres with that goal.

A big part of Stuart's strategy is using novel forages, especially brassicas for grazing, especially in fall and in winter as swath and bale grazing. Forage and deep-rooted brassicas have been attracting attention because they keep growing during shortening days of late summer and even after frost down to -10 C. Once they are frozen they stay green and leafy and the heavy stalks – as much as 2 inches across are filled with a mild, starchy material cows seem to really like. By the end of August, the root tops were above the soil and about 3 inches across, but growers expect them to double in size before freeze-up. Cattle gnaw them down as deep as they can.

Stuart has at least 14 types of brassica in several different mixtures, situations and planned uses. That's what most of the people at the field day came to see.

Stuart uses "cocktails" of forages together so that if weather doesn't suit one type of plant, another will do better and the field will produce plenty of biomass whatever the conditions. Each cocktail had one to four brassicas, a legume or two and a cereal of some sort.

The brassicas grow fast. One field, seeded on May 25th was weedy and the available forage was more than the cattle could use, so Stuart silaged it six weeks after seeding. It yielded 6 tons per acre and he estimates it will support over 100 pair-days, aiming for 2lbs gain a day on the calves. The brassicas have high moisture contents so the silage has to be wilted for a few days before chopping. In other situations, Stuart believes the moisture content is good for cattle health and improves their utilization of winter swath grazing.

"I think they eat at least 85 percent of the swaths," he says. "Snow here stays light and fluffy so cows can dig through it but the feed has to be worth digging for. The brassica-based swaths are much better feed quality than when we used straight cereals. And, when we go to seed in spring, there's almost no residue, the manure is trampled into the soil and the

swaths have disappeared. Sometimes we'd like to leave a little more residue but the feed utilization is excellent."

The high quality winter feed supports cows and calves as well as yearlings. Calves are weaned in mid-March, about six weeks before calving starts, beginning their independent grazing rotation on early growth of winter cereals or stockpiled grazing. By weaning, the calves have learned to graze and eat silage from their mothers and they've kept on growing on high quality forages supplemented with milk.

Stuart supplements swath grazing on some fields with silage so all the cattle have access to silage. He builds silage piles low and wide in fields he plans to swath graze, taking crop from a nearby field and protects the pile with a 3-wire high-tension electric fence. He limits access to the silage face with an electric wire about 24 inches above the ground. The cattle have to eat from the bottom and in winter the only labour is to keep the horizontal fiberglass fenceposts stuck firmly into the face. Utilization is 90% or better, Stuart says. In spring, the cattle are moved before the ground thaws and manure and feed waste is spread on the silage field to recycle nutrients.

On other fields, cattle, especially yearlings, bale-graze. The impact of bale grazing on soil fertility is clearly visible the following season.

Some of Stuart's grazing cocktails include sweet clover, which provides grazing the following year and boosts fertility by fixing nitrogen. Crimson clover, Persian and berseem clover and hairy vetch are included in some mixes for their nitrogen fixing ability. He's added peas as well as Italian ryegrass to a swath-grazing crop. Oats or triticale are included in the mixtures.

One field has been seeded with a blend of four brassicas, hairy vetch, crimson clover and perennial pasture plants – alfalfa, meadow brome, cicer milk-vetch, and chicory and plantain, both said to be anthelmintics (dewormers). Stuart has used these in swath grazing mixes and sees the cattle really digging for them.

A new crop for Stuart is teff, an ancient grain, a very fine, soft bunchgrass, a warm season C4 grass like corn or sorghum. It's brown but holding up after frost. Stuart plans to graze it this fall.

All the grazing cocktails have been developed in collaboration with Union Forage, so they'll be working with Stuart to compare performance of each forage species and variety to see where each fits. All the fields we saw had thick, lush

growth over 24 inches high after 60 to 85 days of growth.

Seeding an annual brassica may seem costly compared to using a cereal for winter grazing, but Stuart's cost to seed a field for swath-grazing included \$75 an acre for seed, \$15 each for seeding and spraying and \$40 for fertilizer. He also included rent (\$40) labour (\$20) and fencing (\$20) for a total of \$225 an acre. He estimates the grazing available this year at 165 pair-days an acre, \$1.36 a pair-day in the first year. Some of the forage species include sweet clover, Italian ryegrass and winter cereal, which are biennial, so next year's crop of 7 to 8 tons of silage and post-harvest grazing will need no inputs. Seeding an annual forage cocktail costs \$40 or \$50 an acre.

The costs may be higher than some summer pasture or grazing stubble fields in fall, but Stuart's target is 1500 to 1600 lb finished animals at 24 to 30 months on forages. That's average gains of 2 lbs a day from birth to shipping and costs are for two animals, a cow and a calf.

"Quality feed enables us to get the production we need for a year-round lower cost grazing system," he says. "In the current cattle market, lowering costs is key to success."

Stuart sees one more advantage to the forages he's testing: above ground biomass means lots of roots increasing soil organic matter.

"We've got to feed those bugs, store carbon in the soil," says Stuart. "Farming is all about the soil." ■

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