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**Grazing Corn as a Winter Forage Source for Sheep**

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An extended autumn in southern Alberta meant not only more time for farm projects, but also a grazing season that stretched into November for my ewe flock. Our irrigated fall pasture works as a great flushing ration (tested at 28-29% CP and 231-246 RFQ this year!) so the day we sorted breeding groups was the day they finally went into the corrals. Their fed ration of alfalfa/grass hay needs over 1 lb of grain to replace some of the energy they were getting from the pasture and prevent a reverse-flushing effect during the breeding season. The good weather made it harder than normal to get away from the farm to attend the ASBA Symposium in October and the ALP Conference in November, but we did make them a priority once again and always appreciate the learning and networking opportunities.

Winter finally arrived the last week of November, and I migrated into my office to catch up on my off-farm career and a lot of over-due record-keeping. I also took the opportunity to travel to a few farms to discuss forage strategies in November, including the ALP Conference farm tours. When one of the ALP Conference producer panel participants, Karl Denwood, mentioned his success with a couple of years of corn-grazing, he received a lot of interest from the audience, myself included. I made a quick trip out to Lone Valley Farm near Arrowwood, Alberta in the last week of November to see the system for myself. Karl and his wife Megan run a Dorper ewe flock, a lamb feedlot of home-raised and purchased lambs, do their own butchering, and direct-market meat around southern Alberta.

Some of the 450 ewes at Lone Valley Farm were in corrals with new lambs afoot. I had also come to see Karl's creep-feeding system, utilizing dry distillers' grains (DDGs) combined with a custom mineral, and the lambs looked great. The lactating ewes are bunk-fed a diet based around wrapped bales of cereal-silage, which fits their system well.

The main ewe flock, however, were out in the corn field where I was hoping to see them. It was fascinating to see the ewes emerge from a forest of corn stalks several times their height onto the previously grazed field, where only the odd naked stalk remained. Karl

shared a few details of their experience so far. In 2024 the corn got about 6 feet tall and had small cobs due to a dry growing season but still yielded well relative to other crops. 2025 is a different story. Karl applied all of the manure available on the farm to the corn field before planting this spring. A warm June and wet July produced an impressive stand of corn. An herbicide application pre-planting gave the crop a clean start, and the crop only needed one in-crop herbicide application to achieve a clean field, critical for the corn to perform. I estimated the stand at up to 12 feet tall, with cobs 4-5 feet off the ground. Kernel counts gave me a yield estimation of 150-170 bushels per acre! Karl confirmed that a nearby cattle operation had estimated a 16-18 tonne per acre silage yield from this crop. For the Arrowwood area, I think you'd call this crop a bumper.

Karl drove his skid-steer back and forth through the corn field earlier in the fall to create lanes to run electric fence. He is currently moving fence approximately once per week. More frequent moves would give a more consistent diet to the sheep, but there is a trade-off in labour requirements, and he is working on finding that balance. The initial plan was electric net-fencing, but this proved short-lived due to tangling in corn stalks. He is currently running three poly wires and has had no problems keeping the ewes where they belong. The ewes have access to back-graze the field and have to walk back to the yard for water, and this space to move plus their contentment on the corn prevents them from testing the fences.

On the day I was there, the ewes had been given access to new corn a day earlier. They had been knocking down stalks and stripping kernels off cobs to start the new break but had also done a number on the smaller leaves and tassels. In the grazed area of the field, Karl showed me how they will progressively work their way through the corn plants, starting with the kernels, then the leaves, tassels, husks, cobs, and finally work their way down the stalks, leaving only the lignified lower portion of the stalks behind. They also have access to a greenfeed bale in a feeder at the far side of the field, and Karl uses the bale as a gauge on when the ewes are getting less content on the corn. The large mineral feeder showed a lot of traffic. This is one of the most critical components of the system. Karl feeds a custom mineral premix from Blue Rock that is built to compensate for the mineral imbalances, mainly a lack of calcium, that comes with grazing an exclusively corn diet.

As the ewes get further into gestation, Karl will let the ewes leave more residue behind on the corn field and will supplement with more high protein bales to balance the diet. The fall-lambing ewes who are currently in the corrals will be sent out to the corn field after weaning to clean up whatever is buried under snow or left behind by this group.

How much feed is grazing corn providing? Karl introduced 230 of his 145-lb Dorper ewes to the field mid-October; another 70 ewes joined them mid-November. By the beginning of

December they've grazed 2.5 acres, plus four 1000-lb greenfeed bales for supplementary protein. That works out to 4256 ewe-grazing days per acre, or in shepherd-talk, the 300 ewes are using a half-acre of grazing-corn and 800 lbs of greenfeed per week. The remaining 9.5 acres of corn will last these 300 bred ewes at least another 135 days. Karl estimates he'll also get a further 6 weeks of clean-up grazing out of the dry fall-lambing group, bringing the total ewe-days per acre close to 4800 (including the greenfeed bales).

From a nutritionist's perspective, does this add up? The actual feed intake of these ewes is the big unknown, but assuming 4 lbs DMI and the math in the last paragraph, 300 ewes grazing for 170 days is 93 DM tonnes. Subtract 20 bales of greenfeed and get 84 DM tonnes of corn, which is 7 DM tonnes per acre, which lines up nicely with the 170 bushel corn grain yield I estimated for this field. Impressive!

What does it cost to grow corn? A basic roundup-ready corn hybrid will cost you up to $120 per acre. Adding insect resistance traits will bring you closer to the $150 mark, while a non-GMO, open-pollinated variety may be below $50 per acre. Most corn-growers utilize an herbicide pass before planting and at least one post-emergence. Non-GE varieties will be cheaper to plant but more expensive chemistry will be needed for weed control. Any weed competition is highly detrimental to corn yields; a sprayer or maybe a row-cultivator is going to be a part of every corn program. Corn appreciates a fertile field, and it sure responded to Karls generous manure application. A big corn crop will pull a lot of nutrients out of the soil on a per acre basis, but if measured per ton of forage produced, it is typically less demanding than many other forage-crops we grow on the prairies. It can also make more biomass per inch of precipitation than any other crop we grow on the prairies, other than possibly kochia in some environments.

Winter corn-grazing is not new to the cattle industry on the prairies, but I came away from this farm visit appreciating the vision it took for Karl and a couple of other innovative shepherds to adapt this system to sheep. And appreciating how much we underestimate the ability of sheep to go out and forage, even when the grass is 12 feet tall!