

HEIFER PASTURE REJUVENATION DEMONSTRATION

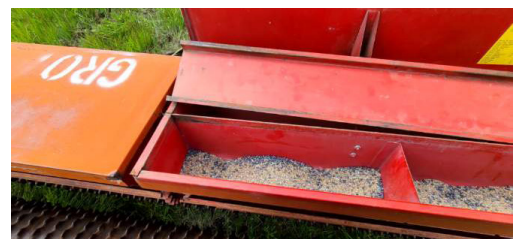
GRO and its predecessor, the Pembina Forage Association, has been managing a pasture for nearly its full fifty years of existence. Most of the demonstration activities on the pasture dealt with water and mineral placement or pasture paddock design. Over the years, a number of efforts were made to upgrade the nearly native pasture through uninvasive means, such as broadcast seeding over existing pasture, using mineral with legume seed mixed in it and other ways to be uninvasive yet attempt to add species to the trial. These methods have met with variable success, so it was determined to try more means of pasture rejuvenation.

One of sixteen paddocks from the quarter section of the heifer pasture was selected and removed from the 2024 rotation. Several different procedures of pasture rejuvenation were performed to demonstrate future improvement and forage yield increases and compare it to a control, which had no action taken. The methods included:

- Fall 2023 (December 2023) drone broadcast frost seeding rejuvenation blend (6.5 lbs/acre) to augment existing species and get worked in by frost action over the winter
- Spring (April 2024) drone broadcast seeding rejuvenation blend (6.5 lbs/acre) to augment existing species to compare with frost seeding
- Rototill three times, Valmar broadcast seed (20 lbs/acre) on June 28, 2024, and harrowed following with rejuvenation blend and grass seed to replace current stand
- Rototill twice, Brillion seed rejuvenation blend and grass seed (20 lbs/acre) and grass seed to replace current stand on June 26, 2024
- Direct seed rejuvenation blend (20 lbs/acre) to augment existing stand, seeded August 1, 2024
- Soil aeration on August 2, 2024, followed by Valmar broadcast rejuvenation blend (20 lbs/acre) to augment existing grass stand, followed by harrow incorporation
- Valmar broadcast rejuvenation blend (20 lbs/acre) over existing stand and harrowed afterward, broadcasted on August 2, 2024
- Wood ash application (2 tonne/acre) broadcasted on June 28, 2024
- Gypsum (recycled drywall) application (1 tonne/acre) broadcasted on June 28, 2024
- Hydrated lime application (2 tonne/acre) broadcasted on June 28, 2024
- Crushed lime application (2 tonne/acre) broadcasted on June 28, 2024
- Agricultural lime (1 tonne/acre) broadcasted on June 28, 2024
- Synthetic fertilizer blend (387.57 lbs/acre of a 18.3-2.1-28.5-4.3 blend) broadcasted on June 28, 2024. Actual N applied, 70.9 lbs, P 8.1lbs, K 110.5 lbs, S 16.7 lbs
- Humalite (207.2 lbs/acre) broadcasted on June 28, 2024
- Control plot, no action taken

Rejuvenation blend:

Pounds/ac	Percentage	Species
1	24.4%	Hairy Vetch - Hungvillosa
0.5	12.2%	Cicer Milkvetch
0.5	12.2%	Alfalfa - Imperial Select Blend
0.4	9.8%	Red Clover
0.4	9.8%	Plantain
0.36	8.8%	Yellow Blossom Sweet Clover
0.33	8.1%	White Clover - Bombus
0.2	4.9%	Chicory
0.2	4.9%	Balansa Clover
0.2	4.9%	Birdsfoot Trefoil



HEIFER PASTURE REJUVENATION DEMONSTRATION CONT'D

Visual observations were conducted in the summer of 2024. What we saw included:

- Plots 1 and 2 appeared to be slow to have new seed germinate, establish and grow
- Plots 3 and 4 had a large flush of weeds, including and especially creeping thistle, while there was some germination of new species
- Plots 5, 6, and 7 also appeared to have a slow start to the seeded species
- Plots 8-12 appeared to have some increased grass growth
- Plot 13 had some obvious increase in grass growth
- Plot 14 seemed to have a thicker, greener appearance than the control

More comprehensive, replicated observations will be conducted in the spring of 2025 for:

- Plant establishment on the reseeded plots (Plots 1 through 7)
- Total plant material replicated samples taken on all plots
- Quality analysis on composite samples for each plot
- Invasive species selective weed control conducted on at least half of plots 3 and 4
- Economic analysis of all plot treatments, including estimated equipment expenses had they been utilized over the entire field

GRO has been able to try only a small sampling of potential pasture rejuvenation methods. Others that could have been tried, had we been able to work them into our small strip trials included:

- Spring drone seeded followed by immediate grazing to have improved seed to soil contact
- Mixing small seeds with mineral to have them pass through the cow and seed in that method
- Quad broadcast seed grass and rejuvenation mix followed by grazing

These additional methods may be attempted and observed in subsequent years. For now, GRO will observe the methods tried to help ranchers come to conclusions as to which way of rejuvenating pastures might work best for them. As more data is collected, GRO will also be able to determine which method might be best for the heifer pasture, and more extensive use of the best method(s) will be attempted.

