Email to: Barry Willis, PRAD Administrator
Cc: Glenn Hogberg, Chair R & D Committee, PRFA of BC
Bill Wilson, Treasurer, PRFA of BC
Walter Fritsche, PRFA of BC Rep on PRAD Consultative Committee

Re: Project titled: Mechanical renovation of forage stands in the BC Peace - Land demonstration with the Aerway Model G Flex 12 foot.

1. We appreciate PRAD support of this successful project.
2. This project has stimulated considerable interest in trying mechanical aeration and renovation of forage stands (we now have a waiting list of producers wanting to try the Aerway).
3. There have been mixed successes with it, however (see detail in reports submitted by Walter Fritsche and Glenn Hogberg).
4. Several budget changes from the original proposal may require clarification:
   - The Aerway was not available for rent locally, as assumed at the time of the application. The Research & Development Committee purchased the Aerway and harrows, making it available for the PRFA to meet their commitment to carry out this evaluation project. As the group gained experience with using the Aerway, it was also made available to producers in the area wanting to experiment with it. There were 2 rental rates: one for members and one for non-members.
   - No technician was available to carry out the work required for the evaluations. Thus, considerable labor was done by the producers (Glenn and Walter) at the evaluation sites, to set up the comparisons, carry out the field work, monitor them, record and report the results.
   - Cooperators took on the responsibility of transport between sites, therefore no travel was charged in this budget. However, with the growing interest from a bigger area, this decision will be revisited in the next phase of the project.
   - The extremely dry soil conditions undermined the effectiveness of the Aerway for both seeding and renovation, so less evaluation work was done in the 1999 season than originally planned.

5. In summary, the directors would like to expand this project in the next few years to give more producers access to experimenting with this technology. With adequate funds the association would like to provide technical back up and some guidelines about conditions and management most likely to result in successful forage rejuvenation. The evaluation would also be a more fair representation of the true potential for this region in years with more moisture than we have had in 1998 and 1999. (see proposal submitted Dec. 15,1999).

The directors of the PRFA of BC hope to continue partnering with PRAD in a project that has great p.r. (public relations) potential for both our boards. Please contact any of the directors listed above or myself to clarify details of the project.

Sandra Burton

Project Title: Aerway and chain harrows vs. chain harrows on fall broadcast manure and winter feeding area on hayland

Objective: #1 To evaluate the benefit of making one pass with a 12 ft Aerway and chain harrows to help incorporate fall broadcast manure into hayland. #2 Also determine the advantage of spreading and incorporating the manure build up on hayland used as a winter feeding area.

Sponsors: Peace River Forage Association of British Columbia
Peace River Agriculture Development Fund

Site: Hogberg Ranch, Road 259, Progress, BC

Project #1 -------Fall Broadcast Manure------

Land

Field A1: 45 acres, 10 year old stand of alfa-alfa, brome and timothy, south slope

Field A2: 22 acres, 9 year old stand of Alfa-alfa, brome and timothy, relatively flat

Treatment

Field A1 On April 22nd and 26th 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a 20 meter strip left in the middle that was just chain harrowed. Direction of travel was north and south, up and down the slope.

Field A2 On May 1st 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a test strip left in the middle that was just chain harrowed 4 passes wide (approximately 12 meters wide). Direction of travel was east and west.

Observations There was about 1-1/2 inches of rainfall shortly after treatment followed by a dry summer. The Aerway did make 5-6 inch deep slices into the ground. The harrows did a good job of breaking up and spreading the manure. The area that was just harrowed would have been hard to visually identify if it were not marked with stakes.

Project #2 -------Winter feeding on hayland------

Land

Field B: 60 acres, 9 year old stand of alfa-alfa, brome and timothy, slight south slope and flat

Field C: 40 acres, 8 year old stand of Alfa-alfa, brome and timothy, south slope and flat

Treatment

Field B On May 1st and 2nd 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a 24 meter (8 passes) strip left in the middle that was just chain harrowed. Direction of travel was north and south.

Field C On May 3rd 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a test strip left in the middle that was just chain harrowed 6 passes wide (approximately 12 meters wide). Direction of travel was north and south.

Observations

There was about 1-1/2 inches of rainfall shortly after treatment followed by a dry summer. The Aerway did make 5-6 inch deep slices into the ground. The harrows did not do as good job of breaking up the compacted manure and feeding debris as it did with the fall broadcasted manure; but it did enough disturbance so that there did not appear to be much plant loss due to build up of debris. The manure was broken into smaller pieces where the aerway was used compared to just the harrows. The area that was just harrowed would have been hard to visually identify if it were not marked with stakes. The hay was cut about the second week of July, the yield was comparable between the aerway/harrow and harrow treatments.

Comments

Expectations The Aerway both fractures the sub surface soil to a depth of up to six inches as well as slicing openings 4 – 7 inches at regular intervals allowing two things to happen:

Greatly increased capacity to absorb spring run off and summer rainfall.

Greatly increased loosening of the soil structure to allow for better root growth.

1999 Plan It is possible the results were disappointing yield wise because the Aeration was done in the spring after the run-off and we had a dry summer. As a result there was not much moisture to catch in the holes created. At least half of all the fields will receive a second pass in the spring of 1999. Comparisons will be looked at between one pass, two pass and just harrowing.

AIRWAY FIELD TRIAL - MAY 5, 1998

Project Title: Evaluation of different applications using a 12 foot Airway with chain harrows.

Objective: To evaluate the Airway presently used by members of the Forage Association on variable applications.

Sponsors: Peace River Forage Association
Peace River Agriculture Development Fund
B. C. Beef Development Fund

Site: Farm of Walter and Pamela Fritsche, Road 213, Dawson Creek

Project #1: Approximately 12 acres of hayland, an old stand of 11 years, was divided into two parcels. On Parcel A, 100 pounds of fertilizer was applied according to soil sample. A 36 inch test strip was left untouched between the two parcels. A 12 foot Airway was used at medium setting with chain harrows. Parcel A was harrowed a second time. Depth penetration of Airway was between 4 and 5 inches. The Airway was weighed with 1000 pounds of sand bags. Parcel B was only Airway'd and harrowed with one pass.

Project #2: Approximately 25 acres was divided in half. This hay stand is Alfalfa/Timothy mix and was reseeded 5 years ago. The low lying portion of this field has very little Alfalfa left due to winterkill. This portion was used as a test plot to re-seed Alfalfa in an established stand. 100 pounds of fertilizer plus 8 pounds of Peace Alfalfa was broadcast first with a fertilizer spreader as per soil sample. The Airway was used at the same setting as on Parcel A and Parcel B of Project #1, and chain harrowed a second time.

Observations: Project #1: Hay was cut on June 28, 1998 on Parcel A and B. Parcel A produced 10% more hay by bale count than Parcel B. No difference could be noted between Parcel B and the test strip. However, regrowth was somewhat better later in the fall on the Airway portion.
Project #2: A sizeable amount of Alfalfa germination had taken place by the time the hay was cut on June 25th. By mid-August some of the seedlings had dried out and

on some of the stronger plants, it was difficult to determine if they were dried up, or in severe dormancy. Next spring we will know if some survived the winter. A late check in September looked approximately the same as in mid-August.

Total rainfall from seeding time to the end of September was about 3 1/4 inches.

Respectfully submitted W. Fritsche

Walter Fritsche
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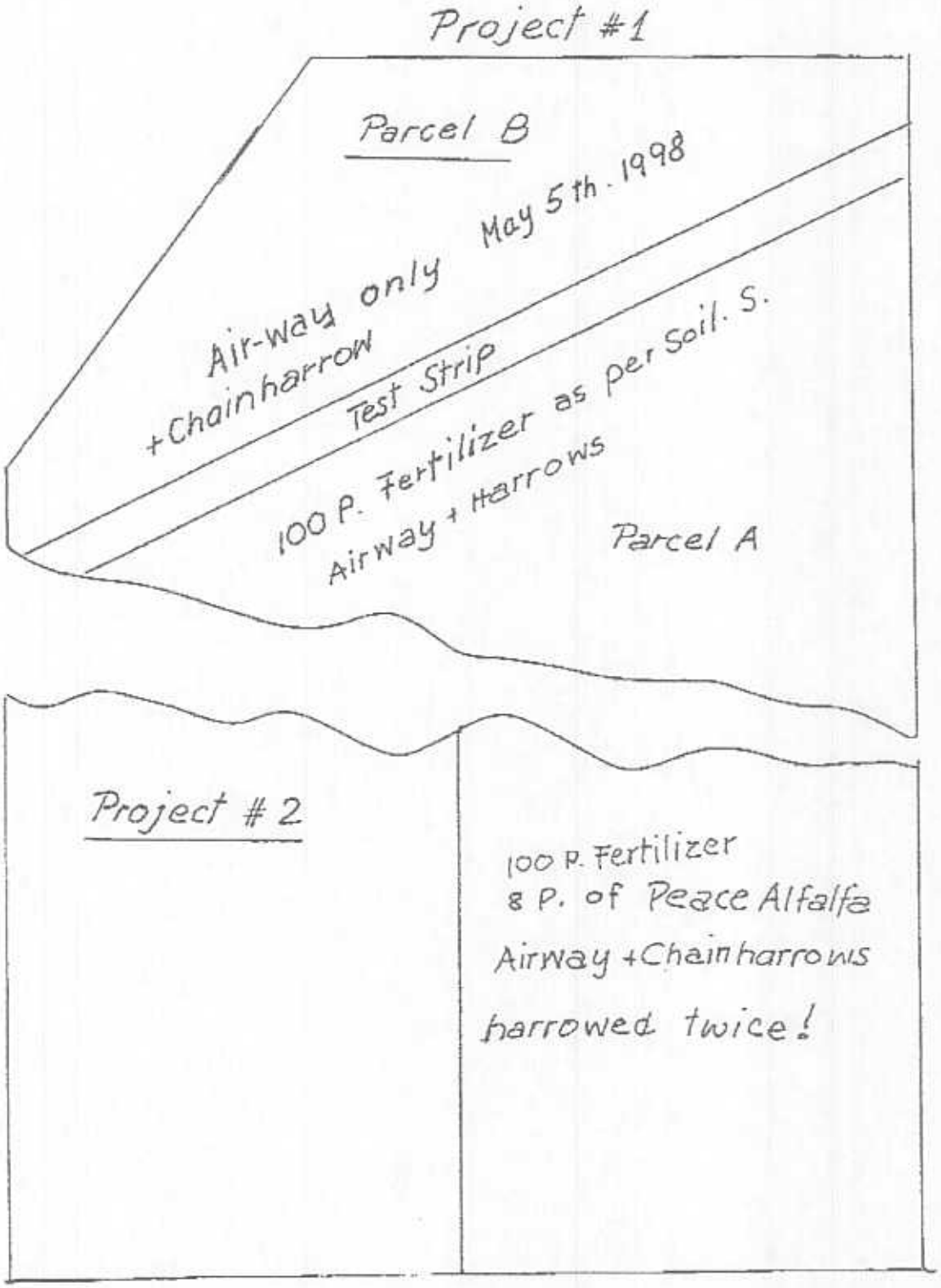
Dawson Creek, B. C.
Phone 250 - 782-5187to


Project #1
Parcel B
Air-way only May 5th. 1998
+Chainharrow
Test Strip
100 P. Fertilizer as per Soil. S.
Airway + Harrows
Parcel A
Project # 2
100 P. Fertilizer
8 P. of Peace Alfalfa
Airway + Chainharrows
harrowed twice!

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Land

Field A1: 45 acres, 10 year old stand of alfa-alfa, brome and timothy, south slope

Field A2: 22 acres, 9 year old stand of Alfa-alfa, brome and timothy, relatively flat

Treatment

Field A1 On April 22nd and 26th 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a 20 meter strip left in the middle that was just chain harrowed. Direction of travel was north and south, up and down the slope.

Field A2 On May 1st 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a test strip left in the middle that was just chain harrowed 4 passes wide (approximately 12 meters wide). Direction of travel was east and west.

Observations

There was about 1-1/2 inches of rainfall shortly after treatment followed by a dry summer. The Aerway did make 5-6 inch deep slices into the ground. The harrows did a good job of breaking up and spreading the manure. The area that was just harrowed would have been hard to visually identify if it were not marked with stakes.

Project #1 -------Fall Broadcast Manure------
Update 1999

Land

Field A1: 45 acres, 11 year old stand of alfa-alfa, brome and timothy, south slope

Field A2: 22 acres, 10 year old stand of Alfa-alfa, brome and timothy, relatively flat

Treatment

Field A1 On May 6th 1999 one pass was made with the Aerway and chain harrows set at the least aggressive angle. Only the east ½ of the field was Aerwayed, up to where the 20 meter strip left in the middle that was just chain harrowed. in 1998. Direction of travel was north and south, up and down the slope.

Field A2 On May 6th' 1999 one pass was made with the Aerway and chain harrows set at the least aggressive angle. Again like field A1 only half of the field was treated, on this field it was the south side. The test strip left in the middle that was just chain harrowed 4 passes wide (approximately 12 meters wide) was left untreated as was the one in A1. Direction of travel was east and west.

Observations

There was about 6-1/2 inches of rainfall in 1999. The Aerway did make 5-6 inch deep slices into the ground, similar to the 1998 treatment. The summer was cool for the most part with slow growth of the hay crop. The half of the field that was aerwayed in 1998 and 1999 was difficult to distinguish visually from the half that was treated in only 1998. Bale counts were not significantly different taking the variabiltyof the field in consideration. We believe it will take more time to confirm if there is a benefit to using the Aerway for yield increase.

Project #2 -------Winter feeding on hayland------

Land

Field B: 60 acres, 9 year old stand of alfa-alfa, brome and timothy, slight south slope and flat

Field C: 40 acres, 8 year old stand of Alfa-alfa, brome and timothy, south slope and flat

Treatment

Field B On May 1st and 2nd 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a 24 meter (8 passes) strip left in the middle that was just chain harrowed. Direction of travel was north and south.

Field C On May 3rd 1998 one pass was made with the Aerway and chain harrows set at the least aggressive angle with a test strip left in the middle that was just chain harrowed 6 passes wide (approximately 12 meters wide). Direction of travel was north and south.

Observations

There was about 1-1/2 inches of rainfall shortly after treatment followed by a dry summer. The Aerway did make 5-6 inch deep slices into the ground. The harrows did not do as good job of breaking up the compacted manure and feeding debris as it did with the fall broadcasted manure; but it did enough disturbance so that there did not appear to be much plant loss due to build up of debris. The manure was broken into smaller pieces where the aerway was used compared to just the harrows. The area that was just harrowed would have been hard to visually identify if it were not marked with stakes. The hay was cut about the second week of July, the yield was comparable between the aerway/harrow and harrow treatments.

Project #2 -------Winter feeding on hayland------
Update 1999

Land

Field B: 60 acres, 10 year old stand of alfa-alfa, brome and timothy, slight south slope and flat

Field C: 40 acres, 9 year old stand of Alfa-alfa, brome and timothy, south slope and flat

Treatment

Field B On May 7th 1999 one pass was made with the Aerway and chain harrows set at the least aggressive angle on the east ½ of the field. The 24 meter (8 passes) strip left in the middle that was just chain harrowed in 1998 was left untreated. Direction of travel was north and south.

Field C

On May 7th 1999 one pass was made with the Aerway and chain harrows set at the least aggressive angle on the east ½ of the field. The test strip left in the middle that was just chain harrowed 6 passes wide (approximately 12 meters wide) in 1998 was left the same as it was in B field, untreated. In 1999. Direction of travel was north and south.

Observations

The observations made in 1999 were the same as field A1 and A2.

Comments

Future Plan

Overall we had expected a noticable yield difference in the second year between the treated and the test strips. We saw no difference. Each of the fields has half of the area treated with one pass of the Aerway for two consecutive years. We will now over the next few years compare the yield differences between one pass, two passes (over two years) and the test strips that were just chain harrowed.