

**Title of Project:** Rejuvenation of Forage Stands with AerWay  
**Report Title:** Annual Report  
**Report Covering Period:** April 1, 2001 to March 31, 2002  
**Organization(s):** Peace River Forage Association of BC  
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**Objectives:**

- To evaluate the AerWay aerator under a variety of soil, microclimate and forage stand conditions
- To enable more ranchers and farmers to experiment with the AerWay aerator as a mechanical means to rejuvenate forage stands.
- To coordinate the timely movement and maintenance of the machine as more cooperators experiment with it.
- To compare this method with other methods of forage rejuvenation.

**Accomplishments:**

- Hired Julie Robinson as a summer student again for summer of 2001 to work on 8 projects for PRFA of BC including this project.
- Organized annual overhaul & repairs (bearings & teeth replacement, etc. by Walter Fritsche & Ken Langevin).
- Organized two options for extra weight on the Aerway to improve soil penetration (cement blocks, water tanks).
- Hired Monte Bentley on contract to coordinate AerWay movements in fall of 2001 and to continue where Julie left off interviewing all users.
- Compiled all interviews and a final report (Monte Bentley).

**Tasks in progress:**

- Maintaining list of producers (15) who want to use the AerWay on alfalfa/ grass hayfields and pastures in spring or fall of 2002.
- Moving towards a lower key, self sufficient method of coordinating the AerWay through forage directors for the next season.

**Extension and demonstration:**

- Finalized and distributed a second Forage Fact about producers experiences with the AerWay.
- Presented results at AGM of Peace River Forage Association on Dec. 1.

**Finances:**

Total Approved Project:	\$10,700.00	
Total Approved PRAD funds:	\$ 8,560.00	
Revenue from PRAD to Mar. 31, 2002	\$ 7,704.00	
Revenue from PRFA	<u>\$ 2,140.00</u>	
Total Revenue		\$ 9,844.00
Expenditures, as of March 31, 2002		\$11,153.12
Excess / (Deficit)		(\$ 1,309.12)

**Variances from original work plan , schedule or budget:** none

**Summary comments:** This project has been a great example of spreading the benefits of PRAD funding to a large number of people in the region.

**Attachments:**

- Detailed financial summary.
- 2<sup>nd</sup> Forage Fact by Monte Bentley attached as a summary.
- Complete report (20 pages) by Monte Bentley available on request.

# Pasture Land Aeration Update

## AerWay's Features:

- \* 12 foot ballasted unit
- \* alternating tines on a metal roller
- \* can be pulled with 85 to 100 HP field tractor
- \* unit includes water tanks for adding weight
- \* 1000 lb weight can be added to each side for better soil penetration
- \* axles can adjusted to an aggressive angle

## Tapping into Local Knowledge for Factors of Aeration Success

Aerators perforate the soil surface without destroying the crop cover. The tines upon penetration, shatter and fracture the soil, loosening the soil structure and relieving soil compaction.

There are a significant number of forage producers using aerators in the Peace Region. Tapping into local knowledge about aeration has revealed some important considerations: degree of penetration, timing, soil nutrients, precipitation, and ground moisture all play a large role in determining how successful field aeration will be in improving forage production.



Phil Clavier was impressed with the improved penetration of the AerWay due to the addition of water tanks by PRFA of BC in the spring of 2001.

*"Early effects on plant growth are evident by greener, more vigorous plants around the aeration depressions."  
Philip Clavier*

## Repeated Aerway Use Shows Promise

**Dennis Madden**, a local cattle rancher, has been aerating his home pasture each spring for four years. He wants to maintain the soil sod for the purpose of spring calving. Dennis aerates after calving to incorporate bedding residue. He also wants to loosen the soil to counteract any compaction due to high cattle density on the spring soil. This field is used for pasture during the summer.

The first year the field was aerated, there were no yield differences in the pasture. This was attributed to the lack of precipitation following the aeration. The aeration holes were still evident in the fall.

Dennis persisted with aerating after calving and with more precipitation he has noted a sustained yield increase in this field. His plant populations have remained stable as well. Cattle manure and bedding residue are the sole source of added soil nutrients for this field.

As annual AerWay use for aerating land becomes more common, producer generated information will become available. There is also interest in measuring soil density and compaction profiles. Comparisons of soil compaction on fields that have been repeatedly aerated versus non-aerated fields are being planned.

## For more information call:

- \* Glenn Hogberg,, Progress (250 ) 843 7653
- \* Monte Bentley, Progress (250) 843 2306

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of British Columbia





Monte Bentley interviews Ben Hansen about nutrients.

*"Aeration results may be less visible in areas of thicker forage and better ground moisture, due to the plant cover and the fact the soil clumps are smaller and are not thrown as far."*

*Ken Langevin*

#### Rental Rates (spring 2002)

\$2.50/ac members  
\$3.00/ac non-members

#### Contact:

Glenn Hogberg at  
(250) 843 7653

*"A spring harrowing, rolling or drag bar to follow aerating would prevent any interference of sod clumps with swath turners or cutting knives."*

*Waine White*

## Soil Nutrients, Moisture, and Aeration Work Together

Field aeration will not overcome poor forage production if soil nutrients are in short supply. Increased forage production will not result from field aeration unless timely precipitation follows aeration.

Producers who aerate in the fall take advantage of the snowmelt in the spring to capture moisture. A common concern is whether there will be sufficient soil moisture in the fall for adequate aerator tine penetration into the soil. Producers who aerate in the spring find ample soil moisture, therefore excellent penetration but good forage production results are dependant on adequate precipitation following aeration.

**Ken Langevin** aerated in the fall of 2000. He had adequate aerator penetration and with the substantial rains in 2001, he was able to graze his home quarter much later than usual. However, **Phillip Clavier** notes that in seasons where there is more than adequate rainfall there will be increased yield in all fields not just aerated ones.

In October of 2000, **Gordon Lazinchuk** ran an aeration and fertilizer rejuvenation comparison on pasture land. The field has a light, acidic, grey wooded soil (grey luvisol). The plant population was mainly composed of several grasses.

The field was aerated with the aggressive setting on the Aerway. He broadcast a fertilizer blend, adding 70 lbs/ac of nitrogen over the entire field. While he had no measurable results compared to his non-aerated sections, of note is an area where the spreader did not work and the fertilizer was spread over 3 to 4 feet.

In this strip, the plant concentration was greater and plant growth was vigorous. To Gordon, this indicated that his field's main limiting factor was available nutrients. Fields with a marginal organic layer such as this field, have a lower nutrient availability. He is interested in incorporating field liming with his future pasture management.



The "AerWay Men", Walter Fritsch and Ken Langevin did the annual repairs and maintenance of the aerator last spring.

## New Directions and New Uses for AerWay

Currently trials are being conducted in the Baldonnel Two Rivers area on the ability of the Aerway to rejuvenate fescue seed fields. These plots are in cooperation with **Don Pederson** and the Peace Region Forage Seed Association. Traditional rejuvenation methods (several operations of ploughing, discing, rolling) are compared to new methods using the AerWay to replace some of the field operations.

There are a number of other questions the PRFA of BC are interested in pursuing. How do fields that are aerated yearly compare to fields that have similar history but have not been aerated. How do the soil compaction profiles and soil densities compare? How do the various aerators in use in our area compare? How are they being used? These are some of the new directions for AerWay use that the PRFA of BC hopes to provide future updates on.

**Compiled by:** Monte Bentley, Julie Robinson and Joy Sather in Winter of 2002

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