

FORAGE FIRST

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SIXTH ANNUAL FORAGE QUALITY SEMINAR SUCCESSFUL

Nearly 100 forage enthusiasts were on hand at the Farmington Community Hall on January 25th to enjoy an evening of good speakers, to meet the outstanding forage producer in the Peace River for 1992 and also to find out who had the best samples of feed analyzed in the Peace Country this year.

This years program was cosponsored by the BCMAFF and the Peace River Forage Association of British Columbia.

Denise McLean, District Agriculturist from Smithers gave us some insights regarding how hay certification is accomplished and announced that by spring we will have a National Hay Certification Program available. Denise was a key player in setting up the Saskatchewan hay certification program whose standards have been a basis for the national program.

Murray Tenove, BCMAFF Ag Engineer, Dawson Creek talked on some accepted forage seeding and renovation techniques with a fair bit of emphasis on no till.

The success of the Tomslake short duration: high intensity rotational grazing project was discussed by Rob Davidson, the Gallagher Fencing Rep and the Peace River Organic Producers Association fieldman.

Bob France, Beef Nutrition Specialist, BCMAFF in Vernon, outlined the pre and post calving nutritional requirements of cattle with emphasis on energy and minerals.

Bob Tubb presented the BCFC Peace River outstanding Forage Award to Viggo Pederson of Grandview Farms, Fort St. John.

Tom Pittman and Jim Forbes District Agriculturists at Fort St. John and Dawson Creek respectively announced the agricultural producers who had the top samples of forage in each of five classes. 179 samples of forage from the Peace River Country were analyzed at Griffen Labs in Kelowna.

The top three samples were recognized in each class with a Certificate of Accomplishment.

GRASS HAY CLASS							
	Name	Address	Fibre	TDN	Protein	CA	P
1.	T. Shipton	Rolla	23.4	72	9.8	.47	.11
2.	J. Garlinski	Dawson Creek	30.4	65	11.3	.56	.15
3.	T.Schwertner	Tomslake	30.2	64	10.1	.62	.21

GRASS LEGUME HAY CLASS							
	Name	Address	Fibre	TDN	Protein	CA	P
1.	John Miles	Cecil Lake	20.6	73	17.4	1.43	.16
2.	C.W. Lawrence	Dawson Creek	27.6	66	15.3	1.49	.17
3.	B.Vanderhorst	Dawson Creek	31.8	62	16.0	1.41	.21

LEGUME HAY CLASS							
	Name	Address	Fibre	TDN	Protein	CA	P
1.	John Miles	Cecil Lake	19.2	74	18.6	1.71	.16
2.	Langs Livestock	Lower Cache	20.6	73	17.9	2.90	.18
3.	Bruce Kutschker	Tomslake	23.4	71	13.9	2.10	.14

CEREAL GREENFEED & SILAGE CLASS (Top 3 samples were greenfeed)							
	Name	Address	Fibre	TDN	Protein	CA	P
1.	Leon Reaume	Dawson Creek	31.0	63	16.9	.57	.22
2.	E. Schindler	Tomslake	34.2	62	16.2	.67	.28
3.	J. Miller	Rolla	22.0	76	10.8	.39	.23

GRASS & LEGUME SILAGE CLASS							
	Name	Address	Fibre	TDN	Protein	CA	P
1.	F. Habersack	Tomslake	28.0	66	14.5	1.25	.17
2.	A.G. Clarke	Baldonnel	26.6	65	12.9	.79	.24
3.	Bob Tubb	Tomslake	33.0	61	11.8	1.58	.16

This year the emphasis on the forage sampling process were redirected to put emphasis on how you balance your livestock ration with the feed you have and not to just win a first place in the competition. Both DA's have been balancing a lot of rations for livestock producers who had their feed analyzed. Anyone who had feed samples analyzed were able to compare their samples to both the top and the average for FIBRE, TON, PROTEIN, CA,P, Dry Matter and trace minerals.

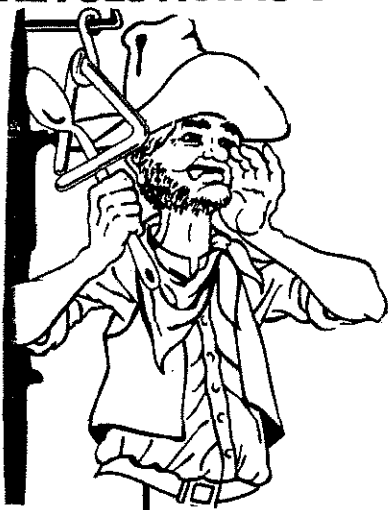
The following chart is most instructive about what should generally be done to balance feed rations for this winter based on age class of animals involved.

% SAMPLES THAT MEET REQUIREMENTS WITH ONLY MINERAL SUPPLEMENTATION						
	Grass	Gr/Leg	Legume	Cereal	G/L	Total
600lb heifers gaining 1.5 lbs/day	0%	2%	22%	2%	0%	4%
900lb Bred Hfrs 1.5lbs/day gain,last 90 day preg	5%	2%	22%	2%	0%	5%
900lb Lactating first-calf Heifer	14%	67%	100%	43%	78%	57%
1300lb Mature Cows giving 20 lbs of milk	14%	71%	100%	47%	89%	60%
1300lb Mature Cows last 90 days of pregnancy	62%	90%	100%	76%	100%	83%
1300lb mature cows middle 90 days of pregnancy	67%	98%	100%	93%	100%	93%

As you can see most young animals require grain and/or protein supplement all winter whilst bred older animals appear to need the energy and protein boost primarily after calving.

EDITORIAL

GRASSROOTS, GRASSLAND REVOLUTION IS UNDERWAY



Looking through fall and winter issues of "The Stockman Grass Farmer" you discover some exciting things are happening in the U.S. dairy farming sector.

Dairymen all over the northern tier of states are going into two new (for the U.S.A.) systems of dairying.

The first is **seasonal dairying**. That is, you simply dry up the cows for the cold, winter season. Guess what this does? You don't have to put up hay/silage all summer to feed all winter so you don't need all those fancy (and expensive) pieces of heavy metal around your farm nor the labour to handle them. Furthermore, your buildings and equipment can be less substantial (and more economical). Some experts reckon that seasonal dairying is viable because only about 10% of the total milk supply is required for the fluid milk market and can therefore be produced in places like Arizona, California and Dixie. Conversely in these states you can dry up the cows during the hot summer months. Another point some experts make is that cheese is both more flavourful and nutritious when made from summer milk versus winter milk. Within the farming spectrum it looks like at this stage the farmers involved in this type of dairying are the innovators.

Secondly, is grass dairying. One extension expert in the midwestern U.S. said that the major fact his ag university discovered in 1991-92 was that the grass stands still and the cows move around it.

However, quite a number of the early adopters type of dairy farmer already appear to believe that grass dairying has a lot to offer their farm as opposed to the old system of confinement - bring the feed to the cow and searching for the elusive, ever increasing milk yield per cow. Farmers with grass dairying also notice less capital investment is required in buildings, the heavy metal of machinery and labour. Grass dairying means tractors, upright silos, silage harvesting systems and the associated large labour pool may be largely replaced with things like solar electric energizers and

portable electric fence, plus a dairy owner or manager prepared to move the fences and the cows regular and do a little farm work with a small tractor or a four wheeler.

Dairy farmers going into grass dairying (and/or seasonal) believe the grass comes first where in the standard confinement dairy the cow comes first. By focusing on grass all of nature becomes a well thought out opportunity and you only have to get the animals production cycle in tune. On the other hand, if you focus on the animal or the market you tend to see nature as a problem, which is an incorrect observation.

Here are some examples of dairymen going into these two new types of dairy farming:

* **The Upper Peninsula of Michigan.** Two brothers. Seasonal dairying aiming for 12,000 lbs of milk/cow and the net profit to stay in business for the long term. Involves 360 breeding heifers and milking cows on 310 acres of intensively managed pastures. Dry cows are wintered under rough but healthy conditions similar to beef cows in Western Canada. With heavy culling they are getting productive cattle suited to producing economically in their environment. Cows all calve within a 48 day spring calving season. Their goal is to move from 100 milking cows rapidly towards 300 cows for a 200 day lactation.

* **Wisconsin** This is the heart of America's dairyland. All size dairymen are turning away from confinement dairying and going back to grass, the system of agriculture that originally made the upper Midwest America's dairyland. Included in this group is Wisconsin's largest dairyman. He grazes his 1300 lactating cows on just 550 acres of grass in a pasture operation. Another Wisconsin grass dairyman has discovered he can stockpile as pasture 50% of his total winter feed requirement per cow and hence move closer to a total grass dairying program and its better net profit picture.

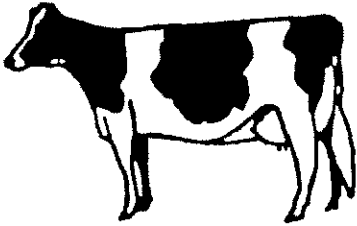
* **Pennsylvania** The new president of the America Forage and Grassland Council has gone to grass dairying and has cut his line of machinery down to one small farm tractor. A leading dairy nutrition consultant in this state predicts that in the near future Pennsylvania dairymen will be able to graze yearlong when they perfect how to stockpile enough grass for the winter grazing period.

* **Ohio** The shifts to grass dairying and seasonal dairying aren't just for big operators. Actually more small operators are probably switching because they need more net income to stay in business. An example is an Ohio Dairyman who has gone to grass dairying. He nets in dollars the same with his 35 cow grass dairying enterprise as he used to with his 55 cow confinement style dairy.

The important thing about this grassland revolution, it is being almost entirely driven at the grassroots by innovative farmers.

Several good reasons exist for this shift in farming technique:

1. **Grass and Seasonal dairying**, depending on the farmers preference, provide a net return of around \$1000 per cow in the U.S. Compare the standard



confinement dairying operation using a lot of grain and feed delivered to the cows. Well, an estimate of one state agricultural department in the midwest indicates confinement dairy costs are \$13/cwt and these folks are selling into an \$11/cwt market that is not likely going anywhere but lower.

2. **New Zealand Dairies have set an example** for people in North America who are looking for a better way economically. 140 lactating cows, not necessarily purebred Holstein, on 140 acres produce an average of \$416 per cow return, at a price of only \$3.88/cwt of New Zealand milk. The New Zealand dairy farms appear to be healthy at this price and growing in number while at the same time the New Zealand lamb industry is shrinking significantly. New Zealand is a grass based dairy country without high capital investment costs in machinery or buildings plus better labour efficiency per manyear of labour-management on the farm. About 7 hours gets more cows milked and more work done around the farm than 12 hours does in the U.S.A. 100 cows per man are common in New Zealand and some outfits have a lot better ratio due to their state of the art milking parlour setups.

3. **Leisure Time is important.** Seasonal dairying and grass dairying in the U.S.A. give the dairy farmer more time to spend with his family and to have other involvements rather than just being enslaved 365 days per year to the cattle herd.

Now a number of groups apparently do not like these new systems of dairy farming. These include about 75 to 90% of the following: U.S. Department of Agriculture folks; milk production marketing groups; land grant universities and their related agricultural extension people statewide; agricultural, pharmaceutical, chemical and machinery companies. Why is this??

Well, H. Allan Nation, the Editor of "The Stockman Grass Farmer" newspaper provides this reasoning. Every person functions using routine patterns; these are called **Paradigms**. Most of our life is governed by established routines, and virtually all of our perceptions. Once a person has a paradigm setup that he figures is working well for him this of course often severely limits his thinking process.

Nation suggests the federal and state agricultural people, the agribusinesses and others are very attached to and hence caught in the established **U.S. Conventional Dairy Farm Paradigm**: Maximum production per cow. Bring the feed to the cow. Grain not grass is the answer. Get bigger or get out. Purebred Holsteins are the only breed. Solve our problems using more high tech inputs. More bigger machinery is better.

These groups minds are in fact chained to this particular line of thinking which has been heavily promoted throughout agricultural society for around 50 years and don't realize that 1990's economic wellbeing requires a different approach for farmers. The concept of grass dairying and seasonal dairying to these very powerful group's minds is such a **radical** change they just cannot conceive of it.

While the pendulum is swinging these groups are either playing ostrich or being vocal in unpleasant form against the change in progress.

As is usual the change to the new (a paradigm shift) is coming from outside the mind locked establishment. In this case, outside means innovative and forward thinking dairy farmers.

DIRECTORS PROFILE



MISTY HILLS SHORTHORNS

Jim and Louise Scafe moved to the Upper Cutbank District near Dawson Creek in 1971 from Vancouver Island, starting with one section of deeded land. Their operation has now expanded to 10 1/2 deeded quarters and a forestry grazing license which joins the deeded land. Along with raising

cattle and logging they also found time to raise four children on their Peace Country livestock operation. Jay 24, Roy 22, Joe 15, Christina 13.

Originally their livestock base was 25 cows and one horse. This now numbers 215 head of registered cows in three breeds. A large shorthorn herd and smaller Salers and Braunveih herds.

Annually they sell 30 registered shorthorn bulls. As well, they have a good heifer calf market. After they select their replacements they have a high demand for the next cut from commercial cattle ranchers. Primary selection criteria at Misty Hills focuses on good feed and legs, tight udders with small teats and easy calving. The Scafes do not believe in pulling calves, even from heifers. Their shorthorn bulls also have very good reproductive soundness, including large scrotal measurements; plus, an easy going disposition to insure handling is a pleasure and not a wild west show.

Most of the cowherd is Aled for one cycle and then bred with bulls for the rest of the summer. The cow herd runs in the forestry area from June to mid September, then they come home to the hayfields.

Having their own sawmill and timber areas has been an asset as besides producing extra farm income they have been able to build several useful agricultural buildings like the 60 x 150 ft calving barn and the 40 x 160 ft hayshed.

Hay and silage are both put up for winter feeding. Jim and Louise prefer silage but it takes a lot of labour at harvest time. 500 acres of their own land is put up for winter feed plus another 350 acres on shares. Red clover and timothy have been the featured mix but a lot of this is now being replaced with alfalfa and brome.

The Scafes became members of the Forage Association because they are interested in visiting with other producers about grass and cattle and learning how to grow more and better summer pasture and winter feed supply to allow them to maintain and increase the size of their cattle herd.

DIRECTORS PROFILE

SHIPTON FARMS, FEEDLOT, BULL TEST STATION.

Albert Shipton started the Shipton farming and livestock operation in the early 70's in the Flatrock, Cecil Lake Districts while he was involved in sales management with Massey Ferguson.



In 1976 after graduation from North Peace Senior Secondary School in Fort St. John Steve Shipton became more involved in management at Shipton Farms. This was also the year they started back-grounding and finishing calves and building up the cow herd.

1979 saw Steve and Tina Mercer tie the knot; then they got busy raising a family and now have three boys: Michael(9), Jeffery(6) and Jordan(4).

Expansion continued. Albert and Steve started custom feeding calves and custom feeding/calving cows in 1985. 1989 saw the first purebred bulls on test for the livestock producers who formed the Peace River Livestock Test Centre that year. The Shiptons also started feeding out bulls for the feeder and finished market at this time. 50 registered bulls are on test this winter at Shiptons.

Today Steve and Tina Shipton own 3,040 acres and rent another 2000 acres. Depending on the year they grainfarm three to five quarters for the feedlot. They are assisted by both sets of parents who are sort of retired. George and Eileen Mercer live at the farm while Albert and Jeanie Shipton come out from Fort St. John to help in the busy seasons. Their other chief source of help is neighbour Ken McNab.

The feedlot capacity is 2,000 head, but the capacity in any particular year is directly related to hay tonnage because forage is first in their rations. 1991 and 1992 were both dry so numbers have been held around 850 head. Last summer they even had to travel 70 miles to the Milligan Creek area for a supplemental haying program. Steve describes it as the driest year ever and "a nightmare" when combined with the record breaking cold spell around Christmas.

The Shiptons started grinding forage with a tub grinder in 1976 because grain prices were too high. Now they are able to mix good hay with poor hay or fescue straw and use this ground roughage (3/4" length) as the base for all their feedlot rations. By feeding more hay they can use less grain in the ration and get the same job done more economically. Their costs of gain are quite competitive with the bigger feedlots in Central and Southern Alberta. A Belarus 7111 is used to power the Bearcat Tubgrinder.

Handling facilities and corrals are not fancy, but they

are practical and one man can do a lot of sorting, feeding or weighing without much help.

For years they had a farrow to finish hog operation, but it was too labour intensive and actually put them in conflict with their cattle enterprises. So this was discontinued in 1992 to give Steve more time to spend with his family (at the hockey rink!) and friends.

Instead of hogs they plan to expand and maintain their cow/calf herd at several hundred head and also concentrate on the Bull Test Station and their feedlot cattle.

Piedmontese bulls are their current choice for using on their crossbred Heinz 57 cows. Steve likes this breed of bull because they have good luck at calving time, the bulls are very fertile and have small bone and lots of heavy muscle which translates to plenty of growthy, well muscled calves at fall weaning.

Shiptons have tried a lot of haying systems and in 1992 they used an 858 New Holland round baler that makes bales 8 feed wide and up to 2300 lbs. As well they put up 1500 one tonne bales with a 4800 Hesston 4 x 8 square baler. This latter baler worked good last summer as there are no leaves left on the ground and never having to stop to unload a bale saves time in the field.

Case tractors are in abundance at Shiptons, two 2290's and one 2090 and they are now looking for something heavier to handle the bigger bales. The Big Belarus was used with the Hesston baler.

Alfalfa is their first hay choice, but they also like sweet clover too as long as it is baled early.

Right now they get 4 1/2 months of good grazing and they plan to plant some different varieties of grasses and legumes and stretch it out to 6 months. More dugouts for livestock water are planned as is more fencing and cross fencing, likely high tensile electric for intensive grazing.

In July - August they begin creep feeding their calves to train them to come to feedbunks and electric waterers later on in their life. In the near future they hope to starting weaning calves and leaving them on the pasture and moving the cows away.

Steve likes to talk cattle and enjoys being around them. He invites all the Bull Test Patrons and other cattle enthusiasts to come and visit on any Saturday as he tries to hold that day open for visitors.

Shipton Farms joined the Forage Association for several reasons:

1. Learn more from other producers what interesting things they are doing with their forage programs.
2. To get involved with forage projects with other producers and so be able to get more production / net dollar return per acre.
3. To try and encourage development of a forage crop insurance program with more complete protection for the producer.
4. In several years want like to see a Hay Certification Program in place since forage grows so well in their area.
5. Alfalfa is important to them and a lesser bloating or even non-bloating variety will be welcome at their place.
6. Also, a compacted hay and straw sales program needs to be investigated for the Peace.



DROUGHT PROOFING

Cowboy Arithmetic is good for a lot of things. Turns out now it is good for analyzing weather records and cycles as we try to assess the drought conditions that devastated the B.C. Peace in 1992 and what to do in 1993.

It has been suggested that by using Cowboy Arithmetic Formulas it is easy to determine that it has been quite a bit drier in the B.C. Peace from 1982 - 1992 than it was from 1972 - 1982. Hence, we have really been in a drought cycle since then. 1985 was the first real dry year according to our Cowboy Arithmetician. Since 1985 our growing season precipitation cycle has been blessed on the average with only one good general summer rain and in 1992 we didn't even get that! Hence, poor, poor grazing and terrible, terrible hay crops!

And 1993 doesn't look real promising based on lack of snow cover, at this date. Certainly we are going to need one or two early spring/summer general rains (or maybe a big wet spring snow) to approach an average, acceptable growing season this coming summer.

Assuming our Cowboy Arithmetic Weatherman is on track, is there somehow you as a farmer/rancher can drought proof your management to some degree?

Well, last year you saw a number of management techniques employed by local producers that will lead to less drought consequences financially for the short term. Sell off unproductive cows (below average weaning weights), sell off surplus below average yearling breeding heifers, sell off older productive bred cows for bred price before they become culls for lesser price in a couple of years, build more dugouts, cleanout existing dugouts, use PFRA pumps to top up your water system for winter, cut and bale weedy or coarse fields usually not harvested (or anything else that stands still) for winter livestock feed.

Short term drought management of course is kinda like a bandaide.

Long term drought management is what counts if you plan to be in the livestock and forage business for the rest of your family's lifetime.

Certified believers in holistic management of resources believe two things that are relative to Drought Proofing and Drought Management; and, perhaps they are correct?

1. Most droughts are manmade due to an oversupply of the wrong agricultural technology and an undersupply of correct agricultural management.
2. The key to being a successful agricultural producer during drought times is to have an effective water cycle in operation on your farm or ranch all the time.

What is an example of an effective water cycle? Well, the soil should be covered with vegetation or litter; it must have and maintain an adequate organic content. Constant animal activity helps improve soil porosity and is generally helpful in developing and maintaining an effective water cycle whereby rain and snow melt go into the ground; some of this moisture is absorbed by plant roots in the soil and used for plant growth plus eventually some water gets through to recharge the aquifers below. As well, spring and small creek water sources will be rejuvenated.

Our Cowboy Arithmetic Weatherman told me of one cattle operation in the B.C. Peace where it looks like to him they have been paying a lot of attention to the water cycle and have achieved a reasonable degree of drought proofing. The evidence: **No reduction in yield per acre of winter feed production in 1992**, in this case silage.

This farmer's program started officially in 1985, and actual casually before. At that time he decided to think and manage in drought mode. His key philosophy: **Trap as much snow as you can and keep it as long as you can.** Keep the wind off your silage fields with shelter belts around the fields.

Some years ago he quit summer fallowing in his crop rotation. Instead he ploughs older hayfields that need rejuvenation in the fall and leaves rough to catch snow and for soil structure to be weathered. Then in the spring he works down and crossseeds. Oats and Peas one way and barley and peas the other. Alfalfa is underseeded plus one grass variety. Some commercial fertilizer is used the year he seeds. However, to add to the fertility of his land he grazes cattle on his fields as long as he can in the fall and feeds them there during the winter.

Yields and forage quality are targeted for a certain level and then the land resources are managed to achieve the desired results. Feed to winter 100 bred cows year in, year out is produced on 300 acres.

SOLAR ENERGY AND LIVESTOCK WATERING UPDATE

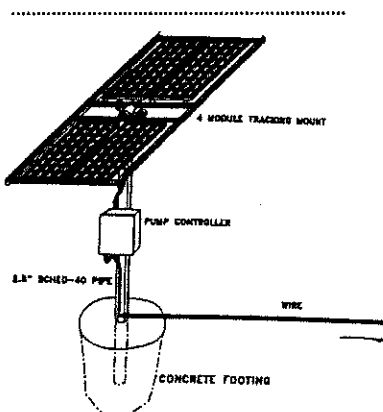
Right now there appears to be quite a lot of interest in photo-voltaics amongst livestock producers in the B.C. Peace and in setting up livestock watering systems using solar energy.

Perhaps the site where the most useful information can be obtained the quickest is at Tomslake on the Horst David Farm. Horst is a member of the Peace River Organic Producers Association and the Peace River Forage Association.

This project involving a solar water pump supplying water to cattle on a short duration; high intensity pasture rotation system was jointly financially sponsored by the P.F.R.A. and the B.C.M.A.F.F. The farm organization receiving the funding for this project was P.R.O.P.A.

The grazing part of the project has successfully demonstrated how a grain farmer can receive substantial income per acre from custom grazing his neighbours cattle rather than continuing to produce grain on a depressed market.

Cattle were supplied by Bob Tubb and Bruce Kutschker, both members of the Peace River Forage Association.



Technical Assistance was provided by: Murray Tenove and Jim Forbes, B.C.M.A.F.F.; Hugh Eberle, P.R.F.A.; Rob Davidson, Gallagher Fence Products and PROPA Fieldman; Sandy Harvie, Canadian Agritechnology Partners, Olds, Alberta.

The system is uniquely designed to provide adequate water for 80 cow/calf pairs or equivalent yearling cattle (1200 gallons/day) for the summer grazing season. It is a fixed system and cannot easily be expanded due to the type of pump involved (submersible).

To design a solar watering system exactly like the one at Tomslake in 1993 will cost a farmer or rancher \$4,963. These costs have increased substantially over the spring of 1992 when the Tomslake experiment was set up, because of three factors: 1. Canadian \$ exchange rate high 80's toward mid 70's. 2. U.S. manufacturing cost increases of 6 - 8 % on various components. 3. Change of pump value from \$310 to \$900 due to unserviceability of the Shurflo model.

The complete cost breakdown (1993 costs): two 48 watt solar panels - \$1,060; a two panel mount passive tracker - \$450; CAP F5 Submersible Pump - \$900; two 12 volt RV Batteries - \$240; Battery charge controller and low volt disconnect - \$320; complete wiring harness - \$145; Battery Box - \$55; 10 feet of 2" poly pipe for pump - \$10; Float switch - \$75; Pump fittings package and Miscellaneous \$50; Metal Tracker Mount post with concrete base - \$100; 7 foot circular 490 gallon drinking trough - \$265; 50 feet 10 gauge submersible cable \$38; 1,000 feet 1 1/2 polyplastic waterline \$760; 1500 feet 1" polyplastic waterline - \$495. Costs not included: freight from Olds, Alberta; labour to set up ; GST; PST.

For cattle producers who want to set up a solar water pumping system that can start small and gradually be added to when more cattle need watering Canadian Agritechology Partners offer this setup for **\$3,925** that will water 133 cow/calf pairs (2000 gallons per day.) Cost breakdowns: Two 48 watt solar panels - \$1060; a two panel mount passive tracker - \$450; CAP 203 centrifugal pump - \$940; two 12 volt RV Batteries - \$240; Battery charge controller and low voltage disconnect - \$320; complete wiring harness - \$145; Battery box - \$55; 20 feet 2" poly pipe (pump to trough) \$20; float switch - \$75; pump fittings package (both sides of pump) - \$250; metal tracker post with concrete base \$100; 7 foot circular 490 gallon drinking trough \$265. Costs not included: GST; PST; Freight from Olds, Alberta; Labour to setup.

The most basic solar pumping package offered is as above without the tracker and steel cement post for **\$3,565**. Using the same CAP 203 centrifugal pump and stationary solar panels you get 1600 gallons of water per day, enough for 107 cow/calf pairs or equivalent yearlings (160 head).

If you want a larger solar waterpumping system CAP can set you up one for 4100 gallons per day (273 cow/calf pairs) for **\$5,870**. Included are four solar panels with tracker, four six volt RV Batteries and the same CAP 203 centrifugal pump.

The CAP 203 centrifugal pump system can also be expanded to deliver 6,000 gallons per day using six solar panels with tracker. Estimated cost of this system which will water 400 cows and calves or 600 yearlings is **\$7,191**.

Capital cost comparisons with centrifugal pump are: two panel stationary \$33.31/cow; two panel with tracker \$29.51/cow; four panel with tracker \$21.50/cow; six panel with tracker \$17.97/cow. Photovoltaics is often used interchangeably with solar energy. The process of converting sunlight into electric energy via solar panels is photovoltaics.

Trackers are recommended this far north to take full advantage of summer sunlight (six hours total by formula).

Battery storage (two to three days total depending on size of system) appears to be cheaper than building several thousand gallons of water storage.

All centrifugal pump systems have water trough within 20 feet of power source and are based on twenty feet of lift.

DC power is much different than AC. All solar (photovoltaic) energy is DC. With DC so you cannot waste power as the margin is pretty thin (unlike AC). Therefore, you have to engineer and plan your system carefully. To illustrate the point, if you think you have the equivalent of 20 feet lift but actually miscalculate and really have 30 feet lift your 4 solar panel with tractor CAP 203 centrifugal pump unit suddenly drops in watering capability from 273 cows and calves daily to 200 cows and calves daily.

Two common ways to error in feet of lift: water trough 10 - 15' too high from source and running several hundred feet of wrong diameter poly water pipe up too steep a slope.

Relative to costs, all components suggested for use here have been selected by CAP in 1993 because of both their durability and longevity, plus good warranty guarantee from the manufacturer.

DIRECTORS PROFILE



HOGBERG RANCH

Ralf and Ulla Hogberg moved up from Burnaby and started this ranching operation in the Progress District in July 1979, with 40 crossbred beef cows and 60 acres in crop. Today the ranch is a partnership involving Glenn and Ann Hogberg and their two young children Jason and Anette, plus Ralf and Ulla.

In 1993 the Hogbergs are calving 170 cows. Most of the cows are British crossbreds. Charolais bulls are used to produce 600 plus pound weaned calves at 200 days. Charolais bulls are favoured because of their reasonable disposition, colour predictability and good weaning weights. Ralf and Glenn do not like big cows and want to achieve a 50% calf weaned weight to cow weight ratio.

In 1986 they began using AI and have been using it since. For several years they have been on the Canadian Charolais Conception to Consumer Program. Most years they breed about 100 cows AI. The Hogbergs AI because they can use bulls with proven performance and select for particular desirable traits such as moderate birth weights and high weaning weights.

They now only buy and use performance tested bulls.

Being involved in the C to C Program showed them how they could improve their weaning weights 100 pounds, plus improve yearling weights significantly using the performance selection process.

Over the years the C to C Program has helped the Hogbergs establish a premium market for their male calves. The remainder of their non C to C reputation calves, heifers (less replacements) and steers are sold direct to a southern Alberta feedlot for a negotiated, predelivery price.

Their intensive calving management system has allowed them to wean high percentages of calves born. One year recently they achieved 199 weaned out of 200 cows calving.

To continue their crossbreeding program and retain hybrid vigour they went looking for another breed with good maternal traits. They chose Gelbvieh because of fertility, high milk production and good disposition.

In the last couple of years the Hogbergs have started developing a small Gelbvieh purebred herd that are run with the commercial cows.

Winterfeed is big, round, 1000 pound bales put up with a nine foot New Holland Haybine, a 10 wheel V rake and a John Deere Baler. Mix is alfalfa, brome and timothy. Yields average over two tonnes per acre on 380 acres. Hay crops are raised under an organic regime. All farming done is related to cow/calf production. Rolled oats are fed after calving and in times of hay shortage grain can be utilized more. They winter their own replacement heifers as well as herd bulls and bred females.

Feed analysis identifies the quality of their roughage and then the amount of hay fed daily is according to the nutritional requirements for each age/sex class of animal.

The grazing program runs from June first and primarily involves forestry grazing leases and permits. Hayfield aftermath is then grazed until sometime in November, weather depending. Most of the grazing is bush pasture though 130 acres of tame grass are involved.

The Hogbergs joined the Forage Association in order to trade information with other producers and resource people to help them learn how to improve their total summer grazing and winter feed supply to allow them to run more cows and get more beef production on the same landbase.

DIRECTORS PROFILE



SIX MILE LIMOUSIN

The Saskatchewan Bennetts pioneered in the Two Rivers area, homesteading in 1931. The farm grew over the years providing many useful opportunities for "hands on" learning experiences for Arnold and his three brothers and sister.

Arnold and Nelda married in 1957. They bought the home quarter in the early 1960's in Two Rivers, between the Peace and Beaton Rivers, 20 miles south and east of Fort St. John.

Family members are: Arna and Trev Baxter, Dylan(9) and Jessy(5); Jason Bennett; Jolene and Russ White, Arjay (5 months). Jason works full time and everyone else helps when needed. All family members are involved in the cattle enterprise.

They bought their first herd of 26 cows in 1965 from Margaret and Harvey Wood (Nelda's brother), mostly blacks, and black baldies. Then they traded 80 acres of land, Nelda's inheritance from Grandpa Wood, for the black Angus bull. The bonus was a black and white pinto mare! A few years later when the crops all snowed down they sold the cows to pay the bills. The horse stayed!

During the 1970's at Six Mile they had a large flock of sheep which the three children all helped with. Predator problems, poor lamb prices and low wool prices helped them decide to sell small and buy big so they were back in the cattle business again!

Now mostly they run commercial cows, a rainbow herd and have used Limousin bulls since 1983 and especially like the Limousin-Angus cross. They have Aled a few cows for the last seven years and now have several papered Limousin cows and bulls. Most of the calves are sold in the fall but they keep their own replacement heifers. Some Gelbvieh cross calves will hit the ground in the spring of 1993.

Bennetts do all their own fencing and fence maintenance. At last tally it was 15 1/2 miles of fence and they aint done yet!! Their program uses high tensile 12 1/2 gauge smooth wire, electrified with solar powered electric fencers. Arnold and Nelda bought their first one in 1986 and now have three in use. On level ground two wires are usually adequate. On rolly, uneven hillside type pastures they may use up to four or five strands.

In 1992 they tried some experimental aerial seeding on approximately 100 acres of Forestry grazing permit along the Peace River. A standard Forestry pasture mix was used. Some hand seeding (cyclone seeder back pack) was done on the higher slopes, spreading mostly crested wheatgrass. Unfortunately, 1992 severe drought conditions did not produce much for their extra efforts. They hope 1993 rains will show them a difference!

The Forestry grazing permit one mile from home is about 300 acres, mostly native graze along the Peace breaks. Bennetts also rent a private 300 acres approximately 1 1/2 miles away, also Peace River hillside pasture, mostly native grass. These pastures are both smooth wire fenced, solar powered. Fencing this terrain was a real challenge - very steep and rolly; in places too steep for the D6 cutting the fence line!

Three have three saddle horses are available for the Cowgirls! The Boss and the Foreman favour a Suzuki 4 x4. The "Four Wheeler" is excellent for routine fence line checking and fence maintenance, for transporting mineral and salt on the steep narrow trails. The "Four Footers" work better in thick brush, sharp narrow coulees and on the rolly side hills.

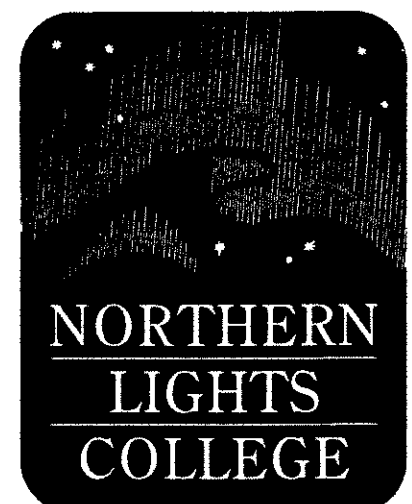
A 30A Hesston Stak Hand is used to hay about 320 acres of Peace alfalfa. Most of the 260 acres of mixed legume and grass hay and 300 acres of fescue straw are baled with a 1565 MF round baler. Timothy, oat, wheat or barley straw is also baled when available.

They now farm mostly fescue and hay; fescue serving well in three ways: a seed crop, round straw bales for bedding and when needed fall graze. A few acres of oats are seeded every year for green feed bales and for seed grain to roll for feed.

Early winter, as weather permits, round bales are fed in the pasture fields about 1/2 mile away. Fall of 92 they started using a Hay Buster in their feeding program.

When it's too cold and snows are too deep for a tractor Bennetts self feed at the alfalfa stacks, using a special feeding cable, "Posi- Shock" brand. Some of this electric feed cable has been used for over 10 years. This feeding method is economical, efficient and almost no feed wasted.

Bennetts joined the Peace River Forage Association of B.C. to get more information about new varieties and better ways of doing things, for the exchange of practical ideas with other growers and to obtain information from forage growing trials.



The initial focus of Centre activity is Bison and Reindeer.

In Canada there are roughly 18,500 bison, often referred to as Plains Buffalo. Bison cow numbers are expected to increase from 4,000 in 1990 to 12,000 in 1995 Canada wide and this will mean 2,500 animals available for slaughter annually from that herd base. Over 80% of the Canadian Herd is located in the four Western provinces with an estimated 9,000 plus being right here in the Peace River Bioregion of B.C. and Alberta (1993).

The primary research and development focus for Bison has been determined to be two fold:

#1. Production Related. Hence, several projects evaluating feedlot gain, bison rations and carcass quality have been undertaken in conjunction with the Peace Country Bison Association, one of six regional chapters of the Canadian Bison Association.

#2. Market Strategy Development. This is currently an on going process involving the Centre, the PCBA and consultants.

Reports on both production projects and marketing strategies are available from the Centre.

Reindeer were imported from the Mackenzie Delta in the N.W.T. early in 1990. Originally they were driven there in a herd of 3,000 from Alaska beginning in 1929. The epic journey ended in 1935 with most of the animals delivered being born on the trail.

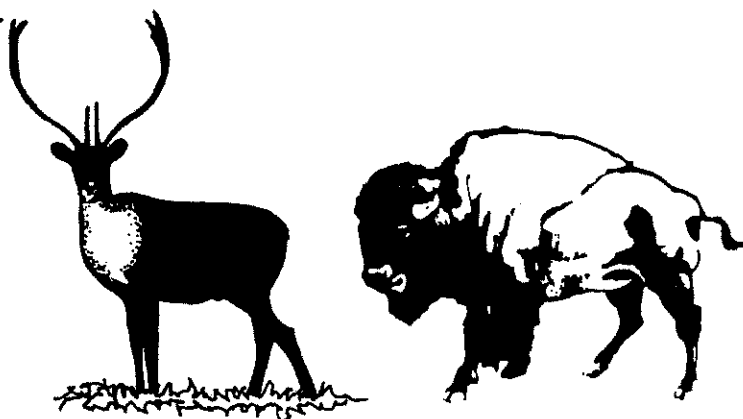
Currently several hundred head are located on over a dozen of farms in the B.C. Peace. Projected major markets estimated by the initial investors are: antlers for pharmaceuticals, calves for breeding stock and carcasses for meat sales.

The Centre has worked closely on reindeer projects since the formation of the Peace Country Reindeer Association and the arrival of Reindeer to the B.C. Peace. The Reindeer Association has several proposals before funding agencies that are currently under review.

The Centre is dependant on securing its own funding in order to continue to serve the farming community. Funds have come from the Bison and Reindeer Associations to do the work that is underway today.

Therefore, other new agricultural organizations wanting to work with the Centre have to be prepared to bring funds for project work with them when they access the Centre.

Bruce Rutley, P.Ag. is the Coordinator for The Centre for Agricultural Diversification. Working with him on his Team are Fred Burton and Cori Clews. Their address is 11401 8th Street, Dawson Creek, V1G 4G2, Fax (604) 782-1427.



RESEARCH AND DEVELOPMENT PRIORITIES ESTABLISHED

At a meeting of the Research and Development Committee in late January, various projects under consideration were assigned a priority in one of three groups: Primary, Secondary, Tertiary. For 1993 the projects in the primary groups will receive the most immediate attention and also probably the most attention of the R & D Committee. Projects with a Secondary priority will be pursued as time and resources are available under the guidance of specific project coordinators with significant progress expected by yearend 1993. The Tertiary priority category of projects are those which have to be examined in greater detail to determine if and how they may be brought on stream.

Primary

1. Zero Till and Conservation Tillage Project Design and initial Setup on cooperating farms 1993 (Arvo Koppel)
2. Zero Till and Conservation Tillage Project funding as necessary 1994 (Arvo Koppel)
3. Forage Seminar/Competition with BCMAFF 1993 (Arnold Bennett, Bob Tubb)
4. Rotation/Continuous Grazing with two Water Systems Tomslake Project Design 1993 with BCMAFF, PFRA, PROPA (Glenn Hogberg)
5. Rotation, Continuous Grazing with two water systems Tomslake. Project initiation with cooperators. (Glenn Hogberg)
6. Documentation of Forage Industry Status and Economic Analysis of Peace River Forage Production(Johann Tietjen, Ernest Nimitz)

Secondary

7. Forage Crop Variety Trials (Barry Sones)
8. Hay Certification (Keith Carroll)
9. Pasture Rejuvenation Private and Crown land (Keith Carroll)

Tertiary

Several projects are in this category, Hopefully, within six months the topics currently under study plus any new project areas that occur will be completely sorted out and identified as to priority.

Members of the R & D Committee: Keith Carroll, Bear Mountain; Glenn Hogberg, Progress; Arvo Koppel, Doe River; Ernest Nimitz, Sunset Prairie-Sunrise Valley; Barrie Sones, Cecil Lake; Doug Summer, Hudson Hope; Johann Tietjen, Groundbirch.



RED ANGUS AWARD TO BAR K RANCH

The Canadian Red Angus Promotion Society recently named their 1992 commercial breeder of the year, the Bar K Ranch of Prince George, B.C. managed by Mark and Laura Grafton. Mark is in his second year as president of the B.C. Forage Council and was one of our featured guest speakers at our Association Annual meeting in Taylor December 1992.



B.C. FORAGE COUNCIL OUTSTANDING FORAGE PRODUCER AWARD TO GRANDVIEW FARMS

In one of several awards given by the BCFC this year, Viggo and Poul Pedersen of Grandview Farms at Fort St. John were the recipients of the councils outstanding forage award for the Peace River Region. Viggo and his brother milk 100 cows and run a top notch dairy operation in the North Peace. They have been members of the B.C. Forage Council for several years and their farm has also been the site for extensive forage variety testing by the BCMAFF for many years.

Criteria for judging were: How does this producer's forage production compare? How does this producer utilize home-grown forages in his or her feeding program in relation to the amount and / or importance placed on feeds from off-farm sources? How does this producer manage his or her pasture? How does the contribution of this producer to the BC forage industry compare to others? How does this producer compare in his or her involvement in the B.C. Forage Council?

The award was presented by Bob Tubb, Peace River BCFC Rep during the Forage Quality Seminar in Farmington on January 25th.

FORAGE CROP INSURANCE WILL NOW COVER HIGH YIELD FARMERS

Meetings with Lonny Steward, Forage Crop Insurance Program Supervisor for BCMAFF, Williams Lake by the Forage Crop Insurance committee of the Peace River Forage Association late in 1992 produced a couple of interesting and positive developments for forage crop producers in the B.C. Peace for 1993.

#1. The Forage Crop Insurance Committee (on behalf of the membership of our Forage Association) opened communications and dialogue and began the establishment of a positive relationship with the supervisor of the Crop Insurance Program, Lonny Steward, for future Forage Crop Insurance program development.

#2 Forage Crop Insurance may now be purchased based on individualized farm records of production. This means farmers with 2 or 3 tonne yields will now also be able to use the crop insurance program effectively if they have adequate farm harvest records for their fields to establish an average yield for their farms. This is a very positive and welcome change.

Members of the FCI Committee are: Glenn Hogberg, Progress; Arvo Koppel, Doe River; Jim Scafe, Upper Cutbank; Doug Summer, Hudson Hope; Harvey Wiles, Baldonnel.

DIRECTORS 1993 PEACE RIVER FORAGE ASSOCIATION OF BRITISH COLUMBIA

Glenn Hogberg
Steve Shipton
Bob Tubb
Ernest Nimitz
Arnold Bennett
Jim Scafe
Harvey Wiles

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