THINK GREEN!

June/July 2002

Ontario Forage Council

Chairman's Message

by Barton MacLean, Chair, OFC

As I write this message, the rain continues. What a change from last year! Harvesting the forage crop will prove to be a challenge, but the opportunity to fill the barn and silos after last year's drought is welcome.

The Ontario Forage Council has a long history of representing the interests of the forage industry. During the past year your directors have implemented numerous changes which will enhance the information and educational component of our Mission Statement – "A lobbying, information and educational organization that provides a collective voice to represent the multi-level interests of the Ontario forage industry at the Provincial, National and International level."

Barton McLean

Ray Robertson has been contracted as the Ontario Forage Council's Manager. Ray is a farmer and has a strong background in working with agricultural groups. His background in soil conservation will help us develop the benefits that forages can bring to this field as well as the production benefits.

Ray Robertson

Joan McKinlay

Joan McKinlay will be assisting Ray in the area of communications. Joan is a former Soil and Crop advisor with OMAF. Joan's experience, knowledge and communication skills will be a real asset to the Forage Council. Together with the supporting staff at the Agricultural Services Centre located in Markdale, they will provide support and guidance to our organization.

The first visual sign of the new changes is the Web Site, which will be up for use and viewing in early July. It will provide forage producers and related organizations with a much needed link to industry information and research at a Provincial, National and North American basis. The newsletter, "Think Green" will be rejuvenated with a new look to provide added benefits to our corporate, producer and individual members.

A series of Forage Information Days are currently in the planning stages by the program committee. I look forward to seeing the agenda for these meetings which will be held next winter.

I would like to express the Council's appreciation to the Agricultural Adaptation Council for their support of our initiatives. I have been encouraged by the tremendous support of our Corporate and Producer Organization Members for the changes we are implementing.

These networking capabilities will enable us to better provide a strong unified voice for the betterment of all parties involved in the forage industry.

check out the new Ontario Forage Council website at www.ontarioforagecouncil.com

Summer Seeding Forages

by Joel Bagg, Forage Specialist, OMAF

The most reliable time to seed forages is in the spring. With an April or early May seeding, moisture is usually adequate and the legumes are well established for winter survival. However, spring seeding is not always possible due to a number of factors, including wet field conditions.

Summer seeding of alfalfa forage mixtures can be a viable alternative to spring seeding. Fields seeded this summer can be treated as established stands next year with full yield potential. Do not use companion crops with summer seedings. They compete too strongly for available soil moisture, and will reduce stand establishment.

The following are some points to consider regarding successful summer seeding of forages:

Seeding Date

There are two critical risks associated with summer seeding of alfalfa. Seeding too early in the summer increases the risk of dry conditions during germination and seedling development. Summer seedings fail if seeds germinate and then starve for moisture. Seeding too late increases the chance of freeze-up before the alfalfa seedlings are adequately established. Seeding must be early enough to allow the alfalfa to accumulate sufficient root reserves to survive the winter.

Alfalfa needs about 6 weeks of growth after germination to survive the winter, and will survive best if the crown develops before a killing frost. Recommended summer seeding dates are:

- > 2900 CHU areas-Aug 10th- 20th
- 2500-2900 CHU areas-Aug 1st- 10th
- < 2500 CHU areas- July 20th - 30th.

Lack of moisture for adequate germination is always a risk. If soil conditions are extremely dry, and no rain is in the forecast, abandon the plans for summer seeding.

Most grass species can be successfully seeded up to 2 or 3 weeks later than alfalfa. Birdsfoot trefoil and reed canarygrass have slow seedling development, so summer seedings of these species are rarely successful.

Seedbed Preparation

Seed to soil contact is important for germination, particularly in dry summer conditions. A loose, lumpy seedbed dries out quickly. A fine, firm seedbed can be more difficult to prepare in summer on clay loam soils, compared to loams, sandy loams and silt loams. Soil should be firm enough at planting for a footprint to sink no deeper than 3/8 inch. Packing before seeding can help. Seed shallow (¼ inch). Always pack the soil after seeding.

Heaving

Summer seedlings are more prone to heaving in late winter, especially if root development was limited due to slow germination or cool fall weather. Avoid summer seeding on heavier soils that have a history of alfalfa heaving.

Weed Control

Winter annual weeds like pennycress and shepherd's purse can be a common problem. It is not unusual to have to spray early August seedings. If warranted, a low rate of 2,4-DB and MCPA can be used for broadleaf weed control, but be sure that the alfalfa is in the 1 to 4 trifoliate stage. Caution must be used to avoid delaying growth due to the herbicide effect. Refer to OMAF Publication 75 "Guide To Weed Control." If these weeds are not controlled, they will show up in the first cut next spring, but should not be a problem after that. Annual grass and broadleaf weeds will be killed by fall frosts. Perennials, such as quackgrass, must be controlled before seeding.

Volunteer Grain

Competition from volunteer grain can be a serious problem. Tillage can reduce the problem. If there is enough moisture, a light cultivation will prompt the grain to germinate. A second cultivation 10 days later will destroy much of this grain. Moldboard plowing to bury the grain is more effective than disking, but may dry the soil out too much. In pure alfalfa stands, a grass herbicide can be used.

Alfalfa Following Alfalfa

Seeding alfalfa after alfalfa is high risk!

Old stands of alfalfa release a toxin that reduces the germination and growth of new alfalfa seedlings. This is termed alfalfa "autotoxicity". Establishment problems can result if the existing stand was not plowed or sprayed at least 3 weeks before reseeding. These toxins are present for up to 6 months, sufficient to permanently reduce new stand yields.

For maximum yields, one year of an alternate crop is required. The toxins are not present the first year in new seedings, so seeding failures can be reseeded without an autotoxicity effect.

Summer seeding of alfalfa is an alternative to spring seeding. Good management and attention to some of the potential pitfalls is required to minimize the risk of establishment failure.

For more information refer to "Summer Seeding Forages" on the OMAF Forage website at www.gov.on.ca/OMAF/english/crops/field/forages.

Predicting Harvest Date For Top Quality Alfalfa

by Dr. Doug Yungblut

No other management factor has a bigger impact on forage quality than harvest date

Nothing will put more milk in your tank or more growth on your beef cattle than top quality forage. And no other management factor has a bigger impact on forage quality than harvest date. But knowing when the time is just right to start knocking down first or second cut hay is the trick.

Research done in New York State compared the effectiveness of three different methods of predicting harvest date as it relates to alfalfa quality – PEAQ (Predictive Equations for Alfalfa Quality), Growing Degree-Days and laboratory analysis.

PEAQ has proven to be the simplest, most practical and most accurate measure. You can use a specially-designed PEAQ measuring stick or a tape measure and a piece of paper. PEAQ sticks are available for $15 from through Pioneer sales representatives.

Follow these 5 simple steps to produce the best alfalfa hay or haylage you can.

Step 1: Select a representative one-square foot area in the field.

Step 2: Determine the stage of the most mature stem in the area using the following criteria.
Vegetative Stage: Stem over 12 inches tall with no visible buds or flowers.
Bud Stage: One to two nodes with visible buds and no flowers visible.
Flower: One node with at least one open flower.

Step 3: Measure the height of the tallest stem in the one square foot area from the soil surface (crown base) to the tip of the stem, not the tip of leaf.

Step 4: Based on the most mature and tallest stem, determine the RFV and NDV values. Use the chart below to estimate Relative Feeding Value (RFV) The Neutral Detergent Fibre (NDF) table is available in my article on the OFC website. RFV is an industry standard for expressing forage quality that is based on two types of fibre levels – NDF and Acid Detergent Fibre (ADF). NDF indicates potential daily forage dry matter intake and ADF provides an indication of forage digestibility. Refer to the Quality Needs of Cattle table below for the ideal RFV for your type of operation. Find the inches measurement you recorded in Step 3 and read across to the appropriate stage of the most mature stem you checked in Step 2.

Step 5: Repeat the above procedure in five to 10 different areas in the field. To obtain NDF and RFV averages for the entire field, add the results and divide the total by the number of samples.

PEAQ estimates alfalfa quality of the standing crop. Begin cutting 20 to 30 RFV points or 1.5 per cent NDF ahead of your quality goal. Alfalfa declines in quality at an average rate of 3.5 to 5 points of RFV per day, depending on weather and genetics.

Doug Yungblut is livestock nutrition manager at Pioneer, P.O. Box 730, Chatham, ON N7M 5L1 or e-mail at douglas.yungblut@pioneer.com

Stage of Development	Relative Feeding Value	Milk Production from various RFV (litres/day)	Pounds of hay per pound of beef
Pre-bloom	**150**	**39**	**9.3**
First flower	**140**	**35**	**14**
Mid-bloom	**136**	**30**	**15.6**

Quality Needs of Cattle— Livestock Type	Relative Feeding Value Range
High-producing dairy cow / Dairy calf	140 – 160
Late-lactating dairy cow / Heifer 3 – 12 months / Stocker cattle	125 – 145
Heifer 12 – 18 months / Beef cow with calf	115 – 130
Heifer 18 – 24 months /Dry cow	100 - 115

Forage Councils Champion the Industry

by Joel Bagg, Forage Specialist, OMAF

Forage Councils have been representing the forage industry for a long time. Their objective is to "promote the profitable production and sustainable utilization of quality forage and grasslands." Strong, well funded, research and extension focused Forage Councils exist in many provinces and states, including Alberta, Manitoba, Quebec, Minnesota, Wisconsin, Michigan and Ohio. By bringing the industry partners together, the Forage Councils improve communication and resource allocation. The Councils enable forage industry partners to better address issues, opportunities and funding. The Forage Councils also ensure that there is adequate publicly funded applied research to maintain a competitive industry.

With enough interest and support, the possibilities for future Forage Council activities in Ontario are limitless. It is important that the industry partners take advantage of this opportunity to fund and further strengthen our Ontario Forage Council and enhance the role that it plays.

Pasture Records

by Jack Kyle, Provincial Pasture Specialist, OMAF

What Pasture records are you keeping for the 2002 grazing season? Is your pasture more or less productive than last year? How does 2002 compare with the last year with similar weather conditions?

Do you have records to show the results of each of the past year's performance of both the pasture and the livestock? If you have these records you will be able to draw a number of comparisons that will provide valuable management information.

A good set of records that provide details of what has happened will allow you to accurately compare one year to the next. A pocket notebook and or a three-ring binder can form the basis for a good system and it can be expanded from that point to a complex computer spread sheet if you are so inclined.

Your records should include weather data- amount of rainfall, frost dates, and extreme summer temperatures. Forage or sward information should include species mix in the pasture, fertilizer applied, and pasture growth at different times during the grazing season. Livestock information should include size, type and number of animals on the pasture, frequency of moves to new paddocks, beginning and ending dates of grazing season, amount of residual forage and any supplemental feed required. This is a long list but the records can be as complicated or as simple as you wish.

There are a number of tools to help measure the amount of forage. Height and density are the two important components and use of a grazing stick will help to determine the quantity of forage present. A notebook will provide the basics for the record keeping and over time will give a very interesting picture of your grazing management.

This information will allow you to make accurate comparisons to other years and allow you to analyze this year's results. By recording and accumulating this information you will be able to make grazing decisions that will have a positive benefit to your operation.

Each year is different in the grazing business but with information you will be able to analyze the differences.

Did lack of rain or too much rain affect the production?

One of the things that happens with plant growth is lots of rain makes for green grass yet cattle gains often are not as impressive as the grass growth. In a dry year it often looks like the gains will be very low and yet at weigh-off the gains are often better than might have been expected.

With a good set of notes and records you will be able to manage your pasture for maximum returns.

Stockpile Grazing – Alternatives for Extending the Grazing Season

by Andrew Rafail, Grazier/Pasture Special Projects, OMAF

With increasing fuel and production costs, more economical and yet still viable alternatives are playing a larger role in conventional agriculture. Pasture has long been accepted as a source of forage during the summer months, however with proper management, stockpiled pasture can be a practical and inexpensive source of quality forage throughout the fall and winter months.

Stockpiling pasture is the process of allowing the forage in a field or paddock to accumulate until the growing has either slowed significantly or stopped altogether. This stockpiled forage is then available for grazing throughout the colder fall and winter until there is permanent snow cover. Stockpile grazing is chosen primarily for the reduced feed and feeding costs. Animals, which are on pasture later in the season, also spread their own manure back onto the pasture, further saving the farmer the cost of hauling and spreading manure over the area.

Proper management is the key to successful stockpile grazing. The quality and/or yield of the stockpiled forages can be controlled in much the same manner as first cut hay. The initiation date, which is the date at which the pasture is allowed to start to grow and accumulate for the cold months, is exceedingly important. An earlier initiation date (mid July) can provide a higher yield and somewhat lower quality, while allowing summer grazing to proceed for a longer period and pushing back the initiation date to mid-late August will result in a loss in yield and a gain in quality. The decision as to when to initiate the stockpiling will depend on various factors, such as the requirements of the livestock that will be grazing the forage, the date which the stockpiled area is required, and the amount of pasture that can be set aside for stockpiling purposes.

Stockpile grazing can also be incorporated into a rotational grazing system, however it is important to keep in mind that as the grazing season progresses, the winter progresses as well. It is beneficial to use the stockpiled pasture furthest away from the barns (or feeding area) first and move progressively closer. This is to ensure that in the event of an early winter storm, etc. the livestock will be closer to the feeding area and the supplemental feed (if necessary) will not have to be hauled quite as far.

The species selected for a successful stockpile grazing system are also important. In general, the types of forages that should be chosen are the narrow leafed grasses, as they seem to be the best for storing on the stem. Traditionally, species such as timothy, tall fescue and bluegrass have been chosen for stockpile grazing, however with proper management the range of stockpile forages can be extended to include annual grasses such as Sorghum-Sudan grass hybrids and even forage brassicas.

For more information contact Jack Kyle at: jack.kyle.omaf.gov.on.ca

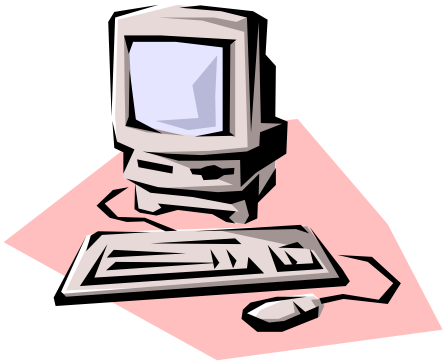
References

Stockpiling shows potential for extending grazing season in Canada www.eap.mcgill.ca/MagRack/SF/Winter%2095%20H

Year Round Grazing Cuts Winter Feed Costs www.cattletoday.com/archive/1999/october/Cattle_Today39

OMAF Infosheet: Options for Extending the Grazing Season. by Marlene Werry, OMAF Beef Specialist

OMAF Fact Sheet: Stockpiling Perennial Forages for Fall and Winter Grazing; Order #99-009



Ontario Forage Council Website

The Ontario Forage Council now has its new website up and running! The website is an excellent resource with a wealth of information and links to other forage research sites. The website includes:

- technical information on forage production, harvesting, storage and marketing, pasture production, corn silage and livestock,
- results of Forage Variety Testing,
- links to other valuable research resources ,
- listing of our Corporate Members,
- OFC Publications Archives.

You will find the OFC website at www.ontarioforagecouncil.com.

OFC's CORDIII Research Funds

In 2002 Ontario Forage Council will direct its CORD III Research Funds to the following projects:

- Development of Alfalfa Varieties,
  Research being conducted by Steve Bowley at the University of Guelph
- Forage Variety Testing,
  Research being conducted by Steve Bowley at the University of Guelph
- Effect of Corn Variety & Grain Level on Steer Growth & Development,
  Research being conducted by Phil McEwen at Ridgetown College

Development of Alfalfa Varieties with Modified Carbohdrate Profile and Enhanced Stress Tolerance

by Steve Bowley, University of Guelph

Alfalfa is a major source of protein for our livestock industries. Although it is a high value crop, it has two major limitations; namely, winterhardiness and energy content

Conventional methods, including both forage production practices and plant breeding, have not dramatically changed the energy content of alfalfa forage; therefore, a more intensive genetic approach is required to create the necessary genetic variability. Research supported by the Ontario Forage Council, Dairy Farmers of Ontario, Ontario Agri-Food Technologies, and the Natural Sciences and Engineering Research Council of Canada has supported research on novel methods to modify carbohydrates in alfalfa. This research was designed to introduce novel genes or alter the expression of existing genes in alfalfa in order to enhance the plant's ability to accumulate carbohydrates. Higher carbohydrate levels in the root/crown will provide for enhanced winterhardiness while higher levels in the herbage will provide for improved feed quality since they will be quickly available during digestion by a ruminant animal.

The proposed research involves both transgenic and non-transgenic approaches to modifying carbohydrates and stress tolerance. Due to the unique carbohydrate profile, changes in carbohydrate profile have to be performed using enzyme assays and HPLC. A number of specific traits are the subject of investigation including High Leaf Starch (HLS), Sucrose-phosphate synthase (SPS), Phosphofructokinase (PFP), Heat-Shock Transcription Factor (HSF), and methods to enhance expression of stress tolerance related genes during stress.

Forage Research

from Forage Focus, the Manitoba Forage Council newsletter

From the University of Manitoba...

Measuring forage consumption
Using a new technique developed in Australia, scientists are measuring "plant waxes" in the feces of grazing cattle to find out what types of forage cattle prefer, and how much the animals actually consume.

Forage and Milk Production
Studies have shown that pasture grazed cows have much higher levels of linoleic acid (one of the two essential fatty acids in human nutrition) in their milk than those fed on hay or silage. Side-by-side comparisons are underway to find out the reasons why and to determine if adding whole seed canola or solin supplements to the feed will mimic this "pasture effect."

Mould resistant alfalfa
Forage researchers have developed a new testing procedure that will identify alfalfa plants with an inherited resistance to moulding. This may lead to new mould resistant varieties in the future.

Forage cubes as feed supplements
Trials are underway to determine if forage cubes can be used as a simple and effective way of providing feed additives—minerals and ionophores—to beef cattle. If successful, it will be a boon for cow-calf producers feeding forage based rations, since supplying feed supplements in the correct amounts can be a challenge.

From the Brandon, Manitoba Research Station...

Investigating effects of afternoon-cut hay
Studies show that hay cut in the afternoon contains more sugars and therefore more digestible nutrients. Researchers are back grounding claves to determine how this may affect feed intake, average daily gain and feed efficiency.

Improved Production with Rotational Grazing

by Jack Kyle, OMAF Grazier Specialist

Rotational grazing is an effective way to significantly increase your pasture production per acre. By rotational grazing I am referring to moving the livestock to fresh pasture every 2 to 7 days.

There are a number of benefits to this type of management system for pastureland. Growing good pasture is the same as growing a hay or haylage crop. The grasses and legumes need adequate time to re-grow after a mower or a cow has mowed them. In the early part of the season it takes about 20 to 25 days for the forages to re-grow and develop significant dry matter for the animals. As we move into the summer season this time frame lengthens out to 30 to 45 days depending on heat, moisture and species.

You wouldn't think of cutting an alfalfa hay field every 7-10 days. Why would you then subject a pasture field to this type of treatment? Reducing the acres that animals have access to on a daily basis will mean less tramping of the forage, more even distribution of the manure which acts the fertilizer for the pasture and more acres free to re-grow without getting bitten or tramped.

The Algoma Community Pasture has been on a rotational program for the past 10 years and during that time they have seen a 65% increase in the amount of beef produced on the pasture farm. These results are very typical of the kinds of improvement that producers are seeing in the pasture production when they adopt a rotational system.

Rotational systems can incorporate daily moves or weekly moves of the livestock to a fresh pasture. Daily moves are going to require about 30 paddock areas, which may not be practical for everybody. Weekly moves could be managed with 5-6 paddocks and still give each paddock about 30 days rest between grazings.

The benefits of rotational grazing will become evident in the first year but it will be in subsequent years that you will see an improvement in the amount of forage produced. Providing forage with adequate rest periods throughout the growing season will allow much stronger root systems to develop. This bigger root system will be able to pick up more nutrients and water from the soil and support more above ground growth.

You wouldn't think of cutting an alfalfa hay field every 7-10 days. Why would you then subject a pasture field to this type of treatment?

If you do not increase the number of livestock that you are pasturing then you will be in a position to make hay with the forage in a couple of your paddocks that will have more growth than is required by the livestock. This hay could be stored for use during the winter or may be used during the slow growth periods of August. Good pasture management requires that you be flexible in your management decisions and adapt to the needs of the plants and the animals.

OMAF Publication 19, Pasture Production, has more information on setting up and managing rotational grazing systems. This publication is available at OMAF offices or can be ordered by calling 1-888-466-2372 for a cost of $10.

Upcoming Events

Planning is underway for OFC Information Seminars in the Fall Winter of 2002/03. Watch for details in the September issue of "Think Green"

July	
14-17	American Forage & Grassland Council Annual Meeting and Minnesota Alfalfa & Forage Expo in Rosemont, Minnesota. Call 800-944-2342 or email www.umn.edu/mfgc for more info
September	
19-21	U.S. National Hay Association Conference, in Seattle Washington at the Sheraton Seattle Hotel. Call 800-707-0014 or email hayhna.aol.com
October	
2-6	World Dairy Expo in Madison, Wisconsin, Visit website at www.world-dairy-expo.com, phone 608-224-6455 or email wde@wdexpo.com. for info
29-31	Alfalfa Intensive Training Seminar in Pasco, Washington, Call 816-584-8169 or email info@alfalfa.org for further info
November	
21 & 22	The Canadian Hay Association's National Convention & Annual General Meeting will be CHA's biggest yet at the Coast Plaza Hotel in Calgary. Visit the Canadian Hay Association's website at www.canadianhay.com for further info
December	
3 & 4	Manitoba Grazing School, Brandon Keystone Centre, Brandon, Manitoba. Call Frazer Stewart at 204-482-5549 for further info
4-6	Western Canadian Grazing Conference. For further info visit the Alberta Forage Council website at www.forage.ab.ca

Know what you want when cutting forages...
If you are cutting barley to wrap barlage the highest quality is at the boot stage but the highest volume is later at the milk stage. Know what quality you need so you can maximize the volume of material. See the Ontario Forage Website website in the Annual Forages areas for more information on this.

The Ontario Forage Council gratefully acknowledges the funding assistance received from the Agricultural Adaptation Council

Ontario Forage Council Corporate Members

BASF Seed
Dairy Farmers of Ontario
GROWMARK
Maple Seed
Ontario Cattlemen's Association
Ontario Hay Producers Association
Ontario Soil & Crop Improvement
Ontario Seed Growers Association
Quality Seeds Ltd
Pioneer
Syngenta

New OMAF Publication 811 "Agronomy Guide For Field Crops"

Includes a 42 page Forage Chapter with the latest Ontario recommendations, including species, mixtures, establishment, fertility, insects, disease, forage quality, harvest, hay, haylage and corn silage management and storage.

Available ($20 + GST) at OMAF Resource Centre or call the Publications Office at 1-888-466-2372.

Visit the OMAF Forage website at www.gov.on.ca/OMAF/english/crops/field/

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