# Forage Advisor

TerraLink Horticulture Inc.

BC Dairy Conference Special Edition

November 2010

Bred For Success

## BMR Silage Corn - More Milk. Better Herd Health. More Profit.

Bred specifically for the highest digestibility possible, Mycogen® brand Silage-Specific™ BMR corn hybrids maximize milk production unlike anything else. These award-winning hybrids use the very latest in agronomic advancements. With a lower lignin content, the highest fiber digestibility (NDFD) and a higher dry matter intake, BMR varieties are able to produce more milk than any other silage corn on the market. You have a higher return on investment and ultimately, more profit.

Sixteen university and independent scientific reports published since 1999 show cows fed BMR hybrids produced an average of 4.8 lbs more milk per cow per day than cows fed non-BMR hybrids. Silage-Specific BMR hybrids have up to 40% less lignin than conventional hybrids. With a 10 - 14 % increase of digestible fiber, BMR hybrids allow for increased dry matter intake and higher-forage diets, which make more nutrients available to the cow for milk production. They also allow for lower grain feeding which improves rumen health, lowering the risk of acidosis. University studies have consistently shown increased intake levels with BMR corn silage of 3 - 5 lbs dm/day. Reviewed research results vary, but milk production is typically improved by 3.5 - 6 lbs/day. The increased milk/day appears to be a result of increased dry matter intake, rather than higher energy content ($NE_L$). Higher intakes should enable fresh cows to maintain weight better, get back in calf sooner and give you a longer curve on cow lactation.

Each year, as new generation BMR hybrids are introduced to the market we are seeing continual improvement in agronomics such as emergence and early season vigour, stress tolerance, stand-ability and forage yield. The improvement in forage yield and the reduction in the much publicized 'yield gap' between BMR and non-BMR hybrids is due to several factors: 1) New Genetics - solid agronomics such as emergence and vigour combined with a tall plant stature and competitively sized ear for above average tonnage potential 2) Insect Resistant Traits - In 2009 we saw the introduction of Bt yield protecting traits in BMR for the first time 3) High rate insecticide seed treatment option - our most popular BMR hybrids were available with high rate insecticide seed treatments which provided improved performance in corn on corn locations. This option will no longer be required as we continue to launch BMR hybrids with traits which includes corn rootworm resistance.

As the Mycogen Seed BMR corn silage program continues to grow and create interest with new dairy producers we recognize the need to provide feed industry representatives with more specific information and support on BMR, particularly agronomic and sample analysis performance. In 2009 in all regions of Ontario and Quebec all BMR hybrids continued to demonstrate superior NDFd forage digestibility averaging at least 10 percentage points higher than non-BMR hybrids.

Used for a number of years in the US and in Ontario and Quebec, BMR corn is something relatively new to BC dairy farmers. Only recently have hybrids suitable to

**2009 Summary of BMR In-Vitro Wet Chemistry Analysis**

2009 Eastern Canada Corn Silage Crop; Analysis Conducted by Cumberland Valley Analytical Services

| | All Samples Analyzed | | | The Same Farm | | % Change |
|---|---|---|---|---|---|---|
| | F2F297 | G3*BMR | Non-BMR | BMR | Non-BMR | |
| Sample Count | 64 | 315 | 55 | 32 | 36 | |
| Dry Matter (%DM) | 33.1% | 34.0% | 36.0% | 33.0% | 36.2% | |
| **NDF 30 HR Digestibility (%NDF)** | **68.0%** | **70.7%** | **60.6%** | **71.3%** | **59.9%** | **18.9%** |
| Crude Protein (%DM) | 7.4% | 7.8% | 7.7% | 8.0% | 7.8% | 3.0% |
| Rumen Degr. Protein (%DM) | 5.2% | 5.6% | 5.6% | 5.7% | 5.6% | 1.2% |
| Acid Detergent Fiber (%DM) | 24.0% | 24.3% | 25.5% | 24.0% | 25.1% | -4.5% |
| Neutral Detergent Fiber (%DM) | 40.8% | 41.5% | 42.6% | 41.7% | 42.3% | -1.5% |
| Ash (%DM) | 4.1% | 4.1% | 3.9% | 3.9% | 3.8% | 2.5% |
| Total Digestible Nutrients (%DM) | 72.4% | 72.4% | 71.3% | 72.5% | 71.5% | 1.4% |
| Net Energy Lactation (mcal/lb) | 0.755 | 0.755 | 0.743 | 0.758 | 0.745 | 1.7% |
| Net Energy Maintenance (mcal/lb) | 0.774 | 0.774 | 0.759 | 0.776 | 0.760 | 2.0% |
| Net Energy Gain (mcal/lb) | 0.495 | 0.495 | 0.482 | 0.497 | 0.484 | 2.7% |
| **Milk Per Ton (lbs.)** | **3,511** | **3,511** | **3,213** | **3,495** | **3,153** | **10.8%** |
| Non Fiber Carbohydrates (%DM) | 45.4% | 44.3% | 43.6 | 44.2% | 43.8% | 1.0% |
| Non Structural Carbohydrates (%DM) | 37.1% | 29.5% | 33.5% | 30.6% | 31.1% | -1.6% |
| pH | 3.80 | 3.95 | 4.15 | 3.93 | 4.48 | |

*G3 denotes 3rd generation or newer BMR genetics and includes the following hybrids: F2F383, F2F387, F2F485, F2F488, F2F489, F2F569

parts of the BC climate become available. Recent farm trials in the Fraser Valley of BC, despite the challenging 2010 spring weather, appeared to yield positive results. BMR corn silage analyses show the 30 hour digestibility around the 70 - 75% NDF mark. With extensive crop breeding and improvement, BMR will now yield within 5% of the market, yet deliver even greater benefits.

**2005-2009 BMR Forage Quality Testing Average**

| | BMR | non-BMR |
|---|---|---|
| % NDFd* | 70.1% | 56.7% |

* Analysis used is 30 hour in-vitro NDFd performed by Cumberland Valley Analytical Services

Dairy producers when selecting a hybrid should also decide on the quality of feed they will produce. They should select for highest digestibility of the overall plant as energy delivered from digestible fiber will easily offset any differences in energy derived from cob. You can easily adjust starch levels in your diet but you can't correct digestibility of a forage you feed. Dairy producers should weigh the nutritional benefits along with the agronomics associated with BMR hybrids to determine whether BMR has a place on their operations. Perhaps the most obvious situation where BMR may have an advantage would be in high corn silage diets. Your herd will thrive on silage grown from Pro∞perity™ Silage corn hybrids – and so will your bottom line! Please contact TerraLink's forage department for more information on BMR Corn production, harvest and storage and feeding of your herd.

Spend Less on Fertilizer

# Avail® Saves You Money

Here are two facts:

1. 80% of the phosphorous fertilizer you apply gets tied. Your crop doesn't have access to it and that money is gone.
2. When you use Avail® phosphorous treatment, you can use 20% less fertilizer. It is cheaper to use Avail® than to not use it.

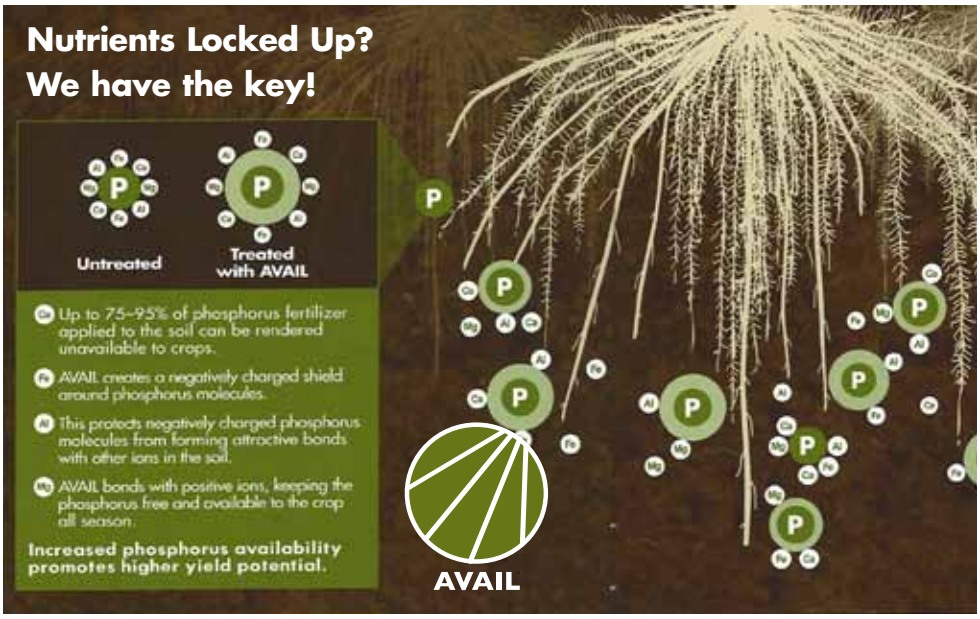
**How Does it Work?**

Avail® increases phosphorous fertilizer efficiency by creating a "shield" around phosphorous molecules to block chemical bonds being formed between the cations of aluminum, calcium, iron and magnesium. This keeps more phosphorous available to your crops. Which cations get shielded depends on the pH of the soil. In calcareous soil it is likely calcium, and in the Fraser Valley it is more likely the metals because conditions are more acidic.

**Avail® is Not New**

The science behind Avail® is not based on wishful thinking. Although it is fairly new in British Columbia because it was only recently registered in Canada, Avail® has been used for several years in the USA. Many scientific university tests have been conducted world-wide on a variety of crops in a variety of conditions. You can see these results for yourself by going to the manufacturer's web site (SFP) at www.chooseavail.com. Choose to listen to testimonials by farmers, or click on "RESEARCH DATA" at the top right, then click "WEST" to access research work done in climate and soil types like ours. Choose any of the research trials and look at them for yourself. Or, go back to the main page, click on "SCIENCE BEHIND AVAIL" and read more about how Avail® works.

**Take Our Word for it. Save Money.**




Fly Control

# Knowledge of the Pest

In order to effectively manage and control fly pests, it is important to understand the breeding habits and life cycles of the key fly pest species. With this knowledge we can help design a site-specific BETTER PEST MANAGEMENT strategy for you.

Adults are attracted to practically all types of organic matter, especially animal feed and manure, broken eggs and dead animals.

An adult housefly may live about 30 days and a female can lay up to 900 eggs. She lays her eggs in clusters.

Larvae (maggots) use the moist, organic matter as food. After completing their development they crawl to a dryer area where they can pupate.

The pupal stage is a resting and development stage in which each larvae develops into an adult fly.

The adult fly then emerges from the pupa. The entire cycle from adult fly to eggs - to larvae - to adult flies - to more eggs - takes only 7 to 10 days in hot weather.

**Natural Enemies of the Pest**

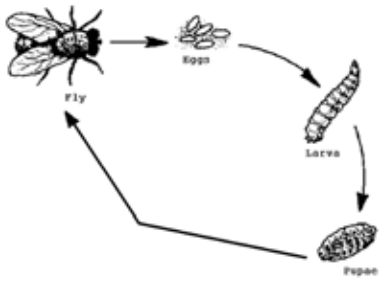
Anywhere manure accumulates and stays reasonably dry there will be an abundance of mites and beetles that prey on fly eggs, maggots, pupae and even adult flies that use them for their own reproduction. Dry manure means a more active and effective population of natural predators and parasites. Cultural methods undertaken to manage manure and biological methods implemented to kill flies are therefore complimentary.

Letting nature take its course would be acceptable under most natural conditions. However, high animal density in poultry, dairy, feedlot and farming operations produce large amounts of animal waste in short periods on relatively small areas. Fly populations can be correspondingly great. Therefore, it is necessary to supplement natural populations of predators and parasites with commercially produced fly parasites to increase the number of flies that are killed.

**Using Fly Parasites**

The most important natural enemy of flies are fly parasites

called parasitic wasps. These tiny insects are completely safe to humans and animals. Frequent releases of fly parasites will reduce fly populations.




The adult fly parasite searches fly breeding areas for fly pupae. Once found, the fly parasite drills a hole through the armored puparia and lays an egg on the protected fly pupa. The parasite egg hatches and the immature wasp eats and kills the developing fly pupa.

After feeding on the dead fly, a new adult fly parasite emerges from the fly puparia in about 2-3 weeks. The new parasites then search out and kill more fly pupae. Each female fly parasite will kill about 100 fly pupae in it's lifetime.

**Contact cody@tlhort.com at TerraLink to order your fly parasites and other beneficial insects.**

**Knowledge of Sanitation**

The primary cultural means to control flies is to reduce their ability to breed. Breeding sites should be identified by regular monitoring and actions must be taken to eliminate or mitigate fly breeding sites. Here are a few general suggestions:

- Stop water leaks promptly. This seems like common sense, but it's a big problem. Watering systems get nasty and clogged up, hoses crack, pipes crack, joints leak, and if you don't catch them early, you have a fly problem that won't quit. Check the water supply everyday.
- Manage feed storage areas. Keep feed cleaned up around silos and feed bins. This can be an ideal breeding site with enough moisture.
- Maintain adequate ventilation. Air flow through areas where manure collects is critical to maintaining dry manure. Dry manure means less fly breeding.

**Chemical Controls**

Although chemicals are important, complete reliance is not effective. The most effective use of chemicals is in conjunction with natural enemies and proper sanitation. Overuse of chemical insecticides will speed up the resistance problem and kill the beneficial predators and parasites in the manure.

- Baits can be used to control adult flies that are attracted to livestock and poultry operations.
- Sprays can be used to treat areas where adult flies congregate. Avoid spraying breeding sites; doing so will damage the natural enemy population.

Richardson Seed

# Profitability of Pasture Renewal

Increasing the productivity of your farm through pasture renewal is an excellent way of increasing your farm's profitability. Successful renovation of poor pasture gives high returns which few other farm investments can match. The potential gains, measured by independent advisers, show that returns from increased animal outputs far outwiegh regrassing costs with up to a 50% return on investment per year over an estimated 7 year life of the pasture.

**Reasons to Renovate**

- Increase Pasture Production
- Improve Animal Performance
- Replace Toxic Grasses
- Plant Improved Forage Varieties
- Utilize Forages that Extend the Grazing Period
- Kill Existing Undesirable Weeds and Grasses
- Become More Profitable

**Some Pasture and Field Planting Choices**

**ALFALFA** - An excellent choice for the dairymen, beef farmer or hay producer. A full season forage.

**ANNUAL RYEGRASS** - Great for overseeding. High yields.

**BRASSICAS & CHICORY** - Forage brassicas are fast-growing annual crops that are highly productive and digestible.

**Pasja Hybrid Forage Turnip** is an early maturing (50-70 days) hybrid forage brassica. It has been bred for rapid growth and high performance, with a high leaf-to-bulb ratio. Pasja can be used over a much longer period of time than the traditional rape cultivars. It has excellent re-growth ability and will provide good leafy summer feed. Tops can be grazed or chopped, and roots can be dug and fed as needed.

**BROME** - A very palatable, broad leafed grazing grass with good winter tolerance and disease / drought resistance.

**Common Smooth Bromegrass** is a long-lived, tall, leafy, sod forming perennial. It develops a deep root system and therefore tolerates drought and heat. It is adapted to both dryland and irrigated cultivation. Best suited for hay as a mixture with alfalfa. High in protein but low in energy. Recovery of smooth bromegrass after cutting is rated as moderate.

**Fleet** is the first Canadian variety of meadow bromegrass. It offers quick recovery time and good resistance to frost allowing for longer fall grazing. It stands up well under heavy grazing and/or poor soil conditions.

**CLOVER** - high quality forage for beef and dairymen. Can also be utilized as a winter cover crop.

**FESCUES** - new varieties combine high yields and high feed value.

**Premium Orchardgrass / Tall Fescue (CMV-r) Mix** is a quick establishing cereal that will die down after the first few frosts. Prefers alkaline and light soil. Used most commonly as a cover crop in the Fraser Valley but can be harvested for feed. (Cocksfoot Mottle Virus-resistant)

**Barolex** is an exciting new tall fescue with great potential through quick establishment, soft leaves, high palatability and high DM-yields. It has a very dense sod with leaf quality almost the same as perennial ryegrass. Barolex is medium-late in maturity.

**FESTULOLIUM** - Festulolium is a cross between meadow fescue and perennial ryegrass.

**ORCHARDGRASS** - One of the most popular and useful forages. Excellent for hay and grazing.

**Baridana** is a late maturing orchardgrass. It is a very winter-hardy variety with excellent rust resistance. Baridana has recently been placed on the national list in Canada. Baridana makes a nice dense sward with few of the typical orchardgrass clumps. This makes Baridana a perfect orchardgrass for pastures. It scores high in digestibility and protein figures on forage samples.

**Kayak** is adapted to Northern and Interior areas of BC where winterhardiness is required. It is a high yielding orchardgrass that shows rapid regrowth after cutting. It is extremely winterhardy and can withstand the survival demands of severe winter environments.

**Terra Brand Orchardgrass** is well-suited to both pasture and hay production. Use Terra Brand for maximum production in a limited amount of time. Terra Brand produces high amounts of forage in the first harvest and, with its high capacity for regrowth, Terra Brand will produce high amounts of forage in subsequent cuts as well. Terra Brand has good drought tolerance and disease resistance, as well as excellent winter hardiness.

**Premium Orchardgrass Forage Seed Mixture** is a blend of two CMV-r (Cocksfoot Mottle Virus-resistant) orchardgrass varieties. Agriculture Canada (Agassiz), in conjunction with Richardson Seed, spent 10-15 years selecting forage varieties for the Fraser Valley that exhibit outstanding CMV resistance, in addition to other important traits, such as yield and stripe rust resistance. These varieties are the highest yielding selections of the most CMV resistant varieties in the marketplace.

**OTHER LEGUMES** - Common and Hairy Vetch, Winter Peas

**PASTURE MIXES** - Forage mixes formulated for specific regions and climates.

**Hay Baler Forage Seed Mixture** is a high-performance forage blend designed for high-quality hay production. This mixture contains a large portion of orchardgrass, to which Joliette Timothy and Barolex Tall Fescue have been added to enhance the feed value. A small percentage of annual ryegrass has also been added to act as a nurse crop until the stand gets established. The components of this mixture have been selected with productivity and palatability in mind to produce top-quality haylage.

**PERENNIAL RYEGRASS** - High yields, early maturity, winter hardy.

**Aubisque Tetraploid** is a perennial bunchgrass that has excellent dry matter yields and is suitable for intensive grazing and harvesting. Aubisque establishes quickly and is resistant to crown rust and powdery mildew. A quality forage yielder where adequate fertility and moisture is available.

**Common Perennial Ryegrass** makes a great combination of good seedling vigour, rapid development, high yields, and good quality forage make it a valuable pasture grass.

**TIMOTHY** - For the serious forage producer. Superior leaf-to-stem ration, quick regrowth, full season production.

**Tuukka** timothy was selected with the serious forage producer in mind. It has superior growth. It will provide season-long production of nutritious forage even in the second, third and fourth cuttings when the alfalfa growth is not so overwhelming. Tuukka is recommended for hay, grazing, silage or green chop (direct feeding). When mixed with alfalfa or clovers, Tuukka provides a long lasting companion that provides excellent season-long forage.

**Climax** is the standard Canadian variety of timothy. It is a tall, broad-leaved, upright grass which out-yields most other varieties. Climax is suitable for silage, hay and pasture. It is medium-late in maturity.

Chemicals

# Weed Control Options

### GARLON

Garlon is a selective, systemic, herbicide that provides selective control of hard-to-control deciduous trees, pine and broadleaf weeds without harming grass. It is registered to control many broadleaf weeds and woody plants on sites and rights-of-way, pipelines, roadways, railways and electrical power lines including military bases, airports, industrial manufacturing and storage sites. Garlon is non-residual in the soil and degrades quickly in the environment, giving it a favourable environmental profile. Triclopyr, the active ingredient, does not bio-accumulate in body tissues. Animal metabolism studies demonstrate that triclopyr is rapidly excreted unchanged, primarily in the urine.
After treatment with Garlon , areas may be grazed by livestock or harvested for forage. See label for specific details on intervals and application rates.

**Woody plants:** Alder, ash, aspen, beech, birch, blackberry, cottonwood, dogwood, elderberry, elm, hawthorn, hickory, maples, pines, poplar, red maple, raspberry†, sumac, tamarack, wild rose, willow, witch hazel and others.

**Broadleaf weeds:** Burdock, chicory, curled dock, dandelion, field bindweed, lamb's-quarters, ragweed, smartweed, smooth bedstraw, vetch and wild lettuce.

### INTEGRITY

INTEGRITY™ POWERED BY KIXOR® HERBICIDE

Integrity will provide control of many annual grass and broadleaf weeds in corn (field and sweet). It can be applied as a pre-emergence or pre-plant incorporated treatment. Integrity combines the two active ingredients making tank mixes unnecessary. Most effective weed control achieved when applied and subsequently incorporated into soil by rainfall or mechanical tillage prior to weed seedling emergence from soil.

**Weeds, Rates and Timing**

Integrity may be applied as a pre-plant incorporated or pre-emergent treatment at a rate of 1.1 L/ha for season long control of the following weeds: Barnyard grass, Common ragweed, Crabgrass (smooth, large), Eastern black nightshade*, Fall panicum, Foxtail (green, yellow, giant), Lamb's-quarters, Redroot pigweed, Nutsedge, yellow*, Old witchgrass, Velvetleaf, Wild buckwheat, Wild mustard

* PPI application only

Integrity may be applied as a pre-emergent treatment at a reduced rate of 0.73 L/ha for early season control of the following weeds, when an in-crop application of another registered herbicide is planned:
Common ragweed, Crabgrass (smooth, large), Fall panicum, Foxtail (green, yellow, giant), Lamb's-quarters, Redroot pigweed, Velvetleaf, Wild buckwheat, Wild mustard

### REFINE SG


A broadleaf weed herbicide for seedling and established tall fescue, orchard grass and wheatgrass for forage or seed production. Controls/suppresses 21 broadleaf weeds. Rainfast in one hour and leaves no soil residue.

Apply postemergence to the following seedling or established grasses for forage or seed production: Meadow Bromegrass, Pubescent Wheatgrass, Smooth Bromegrass, Tall Wheatgrass, Creeping Red Fescue, Slender Wheatgrass, Tall Fescue, Streambank Wheatgrass, Orchard Grass, Northern Wheatgrass, Crested Wheatgrass, Western Wheatgrass, Intermediate Wheatgrass.

Apply postemergence to the following established grasses for forage or seed production: Kentucky Bluegrass.

Refine ® SG Herbicide will control the broadleaf weeds listed on the label for Refine ® SG Herbicide alone. For best results apply to emerged, young, actively-growing weeds that are less than 10 cm tall or across. Thorough coverage of target weeds is essential. Apply with ground equipment only. Make only one application per growing season. The above grasses may not be grazed by or fed to livestock within 7 days of application.

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Let us direct You to a dealer near You.

TerraLink