SEEDS GUIDE

2023 - 2024

FORAGE

CEREALS

SOYBEANS

synAgri Grow crops differently



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PREFACE

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PREFACE

Welcome to our 2023-2024 Seed Guide. Our objective is clear: to provide you with a comprehensive and efficient seed portfolio that meets the needs of Synagri's customers. Each year, we conduct trials of numerous high-potential varieties at various test sites. To be included in our Seed Guide, products must meet several criteria and demonstrate good yields over a minimum period of three years.

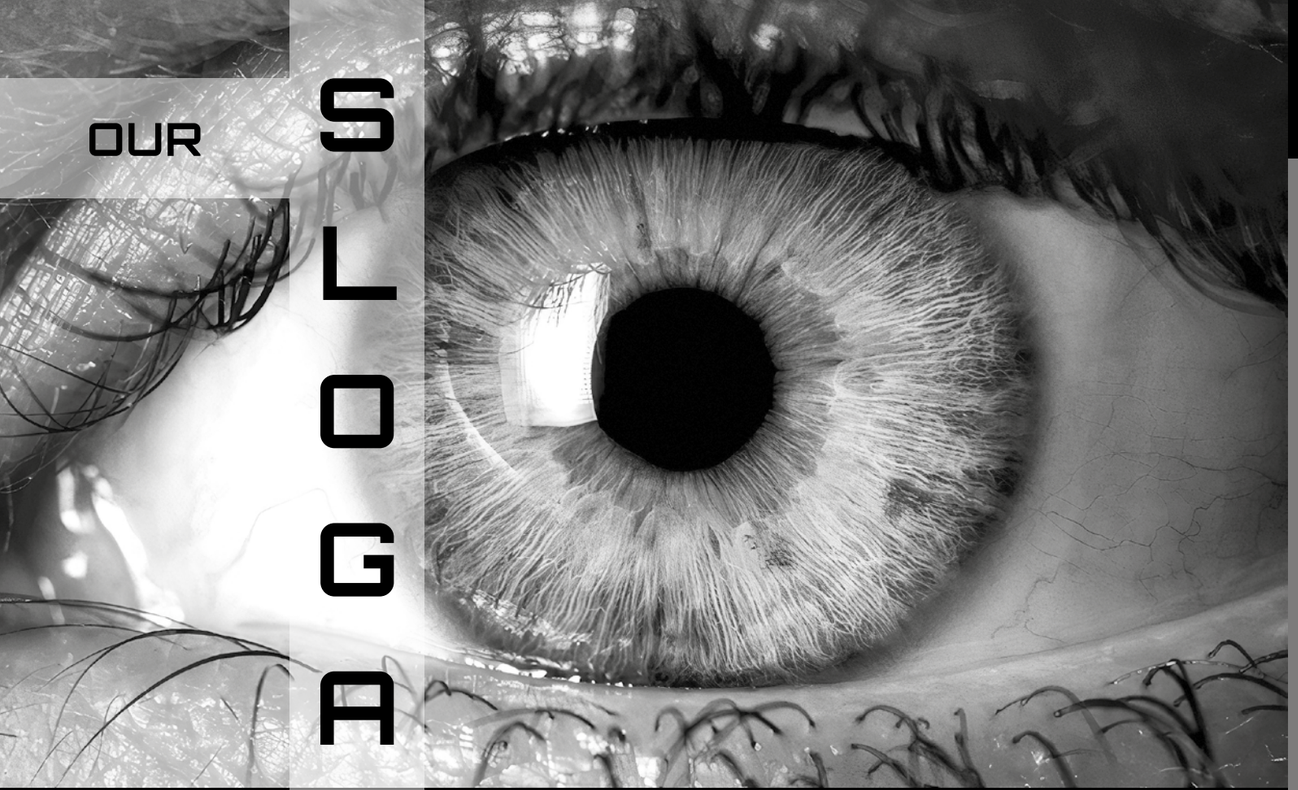
For cereals, a new product launch cycle commences in 2023-2024. Our selections from the past years are now ready for marketing. This new product launch cycle will span the coming years.

Our forage activities are effectively adapting to the growing demand for cover crops. Our offering of varieties and possible mixtures surpasses what is presented in the Seed Guide.

Please do not hesitate to reach out to one of Synagri's Seed team members. We would be delighted to assist you.

Thank you for taking the time to read our Guide.

Jocelyn Tousignant, agr.
Seed Manager



OUR SLOGAN

N IS MUCH MORE THAN A SLOGAN

GROW CROPS DIFFERENTLY

IT REPRESENTS OUR MISSION

"Supporting agricultural producers to make them more productive"

OUR PARTNERS

YARA

BAYER

fcc Financement agricole Canada

Mosaic

Nufarm

BASF We create chemistry

UPL OpenAg™

CORTEVA™ agriscience

FMC

ADAMA

Belcan SEMENCES • SEEDS

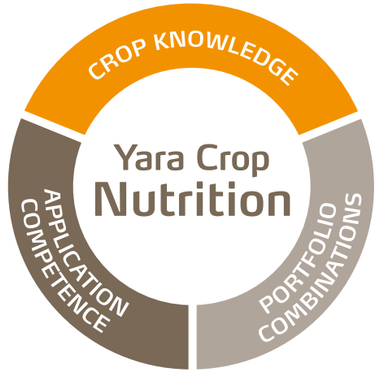
Gowan CANADA

Meuneries Mondou

UNIVERSITÉ LAVAL

Knowledge grows

Your committed crop nutrition partner



Yara grows knowledge to responsibly feed the world and protect the planet. Yara's activity and influence on a global scale is part of the food - resources - climate relationship. Sustainable agricultural development is at the heart of its commitment: strengthening food security while reducing emissions and their environmental impact and supporting rural development.

Operating for more than 20 years in Canada, Yara's Contrecoeur. Quebec terminal is ideally situated for accessibility in the main agriculture regions in Eastern Canada. Yara's commercial team is committed to supporting customers and increasing grower profitability through a comprehensive crop nutrition portfolio and more than 100 years of global and regional agronomic insights.

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SEEDS

QUALITY ASSURANCE

The seed sector is a constantly evolving industry. Increasingly, seeds serve as the primary carriers of new technologies and represent the essence of the varieties we trust. It is essential to establish rigorous quality control measures to ensure complete integrity.

Throughout the production process, our varieties undergo systematic inspection, sampling, analysis, and evaluation of their germination levels. At each stage, they must adhere to the standards outlined by the Seeds Act and the Regulations of the Canadian Food Inspection Agency (CFIA). The Canadian Seed Grower Association establishes guidelines for field production and issues crop certificates. Now, It's SEED CANADA who is representing seed growers, analysts, breeders, distributors, processors, retailers, service providers and all stakeholders along the seed value chain from coast to coast. Synagri actively participates in all these associations to meet the highest quality standards.

A high-quality seed is the first guarantee of a successful harvest!

You are aiming for the

ORGANIC
Market!

We offer seeds and products adapted to your needs.

- Cereals
- Forage
- Corn
- Soybeans
- Fertilizers
- Crop protection and health products

Products labelled as GMO-free are gaining traction in the consumer market. Whether from Asia, Europe, or America, many consumers seek information about the origin and traceability of products containing GMOs. At Synagri, we offer a comprehensive portfolio of GMO-free products, including soybeans, corn, grains, and forage plants.

SOYBEANS
For several years, we have been offering a diverse range of conventional Synagri and Belcan soybeans, including GMO-free options. These soybeans cover a range of Corn Heat Units (CHU) from 2,500 to 2,900. All our conventional soybeans can be ordered with or without seed treatment.

CORN
Through our partner Horizon Seeds, SYNAGRI will offer several hybrids, with production taking place in Ontario. In addition to our range of conventional corn, these different corn hybrids undergo evaluations at the CEROM research center and by various growers in Quebec and Ontario. These non-GMO hybrids perform exceptionally well under our conditions. All seed lots undergo PCR analysis (% GMO) by an accredited laboratory. The results are provided to all producers who request them before seed delivery. This ensures that the future buyers' standards are met, as it all begins with the seed.

FORAGE

Christian Duchesneau, agr.
Forage and Turf Expert and Farm
Succession Program Coordinator

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he Synagri range of conventional and organic forage seeds enables us to provide agricultural producers with exclusive pre-inoculated and untreated mixtures that cater to the needs of our customers. Our varieties are developed through trials conducted at the CEROM (Center Grain Research Center) considering current climate conditions for better winter survival, animal feed requirements for improved feed value, soil conditions and management, as well as crop rotations for greater diversity in varieties.

These characteristics make our Synagri seeds high-performance products that are highly valued by our producers. Additionally, we offer a comprehensive range of additives for various applications. These include **PROTECTFOIN PLUS** and **TOP-SIL** for dry hay, **MOLD-ZAP** and **BIO-PLUS** for hay silage, and **BIO-PLUS** and **TOPSIL** for corn silage. We also provide **MOLD-ZAP** for total mixed rations.

CULTIVARS

STELLAR II Alfalfa... one high-efficiency star

- Mid to early maturity
- Multifoliate at 77%
- Selected for its yield, forage quality, and persistence
- Excellent winter resistance
- Fast growing alfalfa

Fall Dormancy

4

(1 being the most dormant with less yield and 9 being less dormant with more yield)

Winter Hardiness

1,6

(1 being the most resistant and 6 less resistant)

SHOCKWAVE II Alfalfa... likes it damp

- Trifoliate type
- Branch root system above the water table
- Superior resistant to disease
- Mid to early maturity
- Higher yield potential
- Excellent persistence and regrowth

Fall Dormancy

4

(1 being the most dormant with less yield and 9 being less dormant with more yield)

Winter Hardiness

1,4

(1 being the most resistant and 6 less resistant)

DOMINATOR Alfalfa... the inevitable

- Multifoliate at 60%
- Rapid regrowth
- Fast growing alfalfa
- Unequalled forage quality
- Perfect alfalfa for an intensive management
- Excellent persistence
- Exceptional winter hardiness

Fall Dormancy

5

(1 being the most dormant with less yield and 9 being less dormant with more yield)

Winter Hardiness

1

(1 being the most resistant and 6 less resistant)

WL 344HQHQ Alfalfa... for its winning qualities

- Multifoliate at 85%
- Early maturing
- Superior digestibility and excellent feed value
- Very efficient in heavy soil
- Excellent forage yield
- Very good winter hardiness
- Highly resistant to root rot (aphanomyces races 1, 2 and 3)

Fall Dormancy

4,4

(1 being the most dormant with less yield and 9 being less dormant with more yield)

Winter Hardiness

1,7

(1 being the most resistant and 6 less resistant)

BOOST HG Alfalfa... highly digestible

- Non-genetically modified alfalfa with reduction in total lignin
- Improves animal feed intake by 5–10%
- Multifoliate at 73%
- Excellent persistence
- High leaf/stem ratio produces 3–5% more protein
- Allows greater harvest flexibility
- Can generate an additional milk production of 1 kg of milk per cow per day

Fall Dormancy

3

(1 being the most dormant with less yield and 9 being less dormant with more yield)

Winter Hardiness

1,5

(1 being the most resistant and 6 less resistant)

		ALFALFA				
		STELLAR II	SHOCKWAVE II	DOMINATOR	WL 344HQ	BOOST HG
CHARACTERISTICS	MATURITY	REM[1]	REM	EM	EM	REM
	MULTIFOLIATE	YES	NO	YES	YES	YES
	FALL DORMANCY	4.0[2]	4.0	5.0	4.4	3.0
	WINTER HARDINESS	1.6[3]	1.4	1.0	1.7	1.5
	MANAGEMENT TYPE	Conventional	Conventional	Intensive	Conventional	Conventional
	REGROWTH	Very fast	Average	Very fast	Fast	Fast
DISEASE RESISTANCE	YIELD	Very high	High	Very high	High	High
	ANTHRACNOSE	HR[4]	HR	HR	HR	HR
	BACTERIAL WILT	HR	HR	R	HR	HR
	SPRING BLACK STEM	HR	HR	HR	HR	HR
	PHYTOPHTHORA ROOT ROT	HR	HR	HR	HR	HR
	VERTICILLIUM WILT	HR	HR	HR	HR	HR

1. MATURITY: EM = early maturing, REM = relatively early maturing
2. FALL DORMANCY: from 1 to 9.1 being the most dormant with less yield
3. WINTER SURVIVAL: from 1 to 6.1 being the most resistant
4. DISEASE RESISTANCE: HR = highly resistant, R = resistant

CULTIVARS

LAUTHORITY double cut red clover... very efficient

- Diploïd variety selected for his winter hardiness and his high leaves/stem ratio
- High disease resistance
- Rapid spring vigor
- High forage yield
- Superior persistence

TUUKKA Timothy... high leaf-stem ratio

- Semi-late maturity
- Fast regrowth
- High forage quality
- Excellent spring vigour
- Tolerance to cold
- High yield variety

DAWN Timothy... excellent regrowth

- Early maturity
- Excellent regrowth
- Very leafy
- Excellent disease resistance
- Excellent as dry hay for horses
- Excellent mixed with alfalfa, clover or orchardgrass

AC SUCCESS hybrid bromegrass... two-in-one

- Inter-species cross of Smooth and Meadow Bromegrass
- Excellent winter hardiness
- Very good forage quality
- Early spring growth
- Good seasonal growth pattern

PEAK Smooth Bromegrass... better than candy

- Highest performing in our climatic zones
- Higher yield in hay
- Superior regrowth
- May have a longevity of more than five years
- Its abundant leafiness produces quality hay with high nutritional value, highly appetizing and better digestibility
- It can easily tolerate 3 cuts and a cut of 10 cm in height improves its persistence
- Heads 3-5 days before the earliest Timothy

DIVIDEND VL Orchardgrass... unequalled maturity

- The latest maturing orchardgrass on the market
- This later maturing makes it easier to synchronize with the harvesting of other species
- Good potential yield in combination with alfalfa
- The first signs of maturity show up only in the second week of June
- Its maturity is a great advantage over all other orchardgrasses
- Very slow progression and maturity which lengthen the harvesting period

CULTIVARS

DAUPHINE Tall Fescue... extremely flexible

- Part of a new generation of tall fescues with extremely flexible leaves
- Better palatability and digestibility than other tall fescues
- Remarkable drought tolerance and persistence with excellent regrowth

NEW

TETRAX Meadow Fescue... incredible digestibility

- Among the few Tetraploid Meadow Fescues available in Canada.
- Averages over 25 points higher Relative Forage Quality than other Meadow Fescues
- Ideal companion grass for alfalfa, with consistent regrowth in each cut

MELQUATRO Annual Ryegrass... very high yield

- Italian tetraploid type, does not mature the year it is seeded
- Very high yield
- Excellent spring vigor
- Superior growth
- Produces a high-quality forage
- Excellent intercropping choice

ELUNARIA Annual Ryegrass... try it, and you will love it

- A tetraploid annual ryegrass of the westerwold type, does mature the year it is seeded
- A green tall stature plant
- Very good spring vigor
- Mid-late maturity
- Excellent choice if you want to do some frost seeding or spring reseeding
- Provide full-season production and a good regrowth capacity

MATHILDE Perennial Ryegrass... up to the challenge

- Tetraploid perennial
- High efficiency and long lasting
- Very dense growth
- Excellent forage quality
- Very good winter survival capacity
- Ideal for pasture or for short rotations

HYKOR Festulolium... yield and persistence

- A cross between Italian ryegrass and tall fescue
- Compared to meadow fescue and tall fescue, HYKOR festulolium offers better nutritional value – measured by higher sugar and energy content
- High-yield potential
- Excellent persistence because of its deep root system
- Very good resistance to drought

SIMPLE ALFALFA MIXTURES

PRO-ENERGY Mixture

Recommended seeding rate: 17 kg/ha

WL 344HQ	Alfalfa	80%
TUUKKA	Timothy	20%

- The predominance of the highly nutritional alfalfa improves the Forage mixture quality
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

MAXI-MILK Mixture

Recommended seeding rate: 17 kg/ha

DOMINATOR	Alfalfa	70%
DAWN	Timothy	30%

- For dairy producers who follow an intensive management program
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

DAIRY Mixture

Recommended seeding rate: 17 kg/ha

WL 344HQ	Alfalfa	60%
TUUKKA	Timothy	40%

- The predominance of the highly nutritional alfalfa improves the quantity of protein and energy per hectare
- A balanced and performing mixture
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

VARI-SOIL Mixture

Recommended seeding rate: 17 kg/ha

SHOCKWAVE II	Alfalfa	40%
STELLAR II	Alfalfa	20%
TUUKKA	Timothy	40%

- Does well in various, sloping or rocky lands
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

PERFO-GAIN Mixture

Recommended seeding rate: 18 kg/ha

DOMINATOR	Alfalfa	80%
DAWN	Timothy	17%
DIVIDEND VL	Orchardgrass	3%

- Mixed on an alfalfa base containing orchardgrass to increase the regrowth of your grasses and the palatability of hay or silage. The orchardgrass is coated so that it can be seeded using a small seed box
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

LACTO-PLUS Mixture

Recommended seeding rate: 17 kg/ha

STELLAR II	Alfalfa	70%
TUUKKA	Timothy	30%

- For a higher digestibility forage
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

RUSTIK Mixture

Recommended seeding rate: 17 kg/ha

STELLAR II	Alfalfa	60%
DAWN	Timothy	40%

- The predominance of the winter hardy alfalfa brings superior longevity to this mixture
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.28): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

DUALFALFA Mixture

Recommended seeding rate: 17 kg/ha

BOOST HG	Alfalfa	25%
WL 344HQ	Alfalfa	25%
TUUKKA	Timothy	50%

- The addition of two alfalfa cultivars combines quality, longevity and yield
- Reduce to 15 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

ULTRA-HAY Mixture

Recommended seeding rate: 12 kg/ha

STELLAR II	Alfalfa	20%
TUUKKA	Timothy	80%

- Make an excellent hay for horses and combined with other grasses
- Requires an early spring nitrogen application

COMPLEXE ALFALFA MIXTURES

SIMPLE MIXTURES BIRDSFOOT TREFOIL-CLOVERS

BIO-SEM Mixture

Recommended seeding rate: 16 kg/ha

STELLAR II	Alfalfa	40%
LAUTHORITY	Red Clover	15%
TUUKKA	Timothy	45%

- The contribution of red clover ensures better establishment of alfalfa in difficult soil conditions
- Reduce to 11 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

BIO-MAX Mixture

Recommended seeding rate: 14 kg/ha

LAUTHORITY	Red Clover	40%
TUUKKA	Timothy	60%

- The timothy performs better in the second year where it accelerates fast drying in the field
- Adapts to all types of soil
- Reduce to 10 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

TANDEM Mixture

Recommended seeding rate: 14 kg/ha

LAUTHORITY	Red Clover	50%
TUUKKA	Timothy	50%

- Highly productive and easy to establish
- Reduce to 10 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

VARYLAND Mixture

Recommended seeding rate: 15 kg/ha

STELLAR II	Alfalfa	40%
LEO	Birdsfoot Trefoil	25%
TUUKKA	Timothy	35%

- Recommended for rolling landscape with variable drainage
- Combination of alfalfa and birdsfoot trefoil results in longer productivity

PRAIRIAL Mixture

Recommended seeding rate: 14 kg/ha

LAUTHORITY	Red Clover	40%
GLACIER LADINO	White Clover	5%
TUUKKA	Timothy	55%

- An ideal combination for hay or pasture
- Easy to seed and adaptable to many types of soil
- Reduce to 10 kg/ha if combined with one of these Mixes (see p.26): EXTRAGRASS +, TWO-BROMEGRASS +, ME 903 or BROM-FEST

COMPLEXES MIXTURES: CLOVERS OR GRASSES

SUPRA-CUT Mixture

Recommended seeding rate with a cover crop: 8 kg/ha and 26 kg/ha alone

MATHILDE	Perennial Ryegrass	34%
DAUPHINE	Tall Fescue	17%
TETRAX	Meadow Fescue	16%
DIVIDEND VL	Orchardgrass	33%

- Best suited for an intensive management
- For an exceptional yield cut after cut

SUPRA-CUT Mixture

Recommended seeding rate with a cover crop: 10 kg/ha and 32 kg/ha alone

PEAK	Smooth Bromegrass	15%
AC SUCCESS	Hybrid Bromegrass	35%
DAUPHINE	Tall Fescue	18%
TETRAX	Meadow Fescue	17%
ELUNARIA	Annual ryegrass	15%

- A mid-season grass mixture which can be grown with a mixture of alfalfa or red clover

TWO-BROMEGRASS + Mixture

Recommended seeding rate with a cover crop: 12 kg/ha and 20 kg/ha alone

PEAK	Smooth Bromegrass	40%
AC SUCCESS	Hybrid Bromegrass	60%

- A mixture of a two-brome variety combining yield, quality and palatability
- Smooth bromegrass is erected and meadow bromegrass is leafy with abundant growth

ME 903 Mixture

Recommended seeding rate with a cover crop: 10 kg/ha and 28 kg/ha alone

PEAK	Smooth Bromegrass	35%
AC SUCCESS	Hybrid Bromegrass	35%
DAUPHINE	Tall Fescue	15%
TETRAX	Meadow Fescue	15%

- A mid-season grass mixture which can be grown with a mixture of alfalfa or red clover

BROM-FEST Mixture

Recommended seeding rate with a cover crop: 10 kg/ha and 28 kg/ha alone

PEAK	Smooth Bromegrass	35%
AC SUCCESS	Hybrid Bromegrass	35%
HYKOR	Festulolium	30%

- A mid-season grass mixture which can be grown with a mixture of alfalfa or red clover

PASTUR-2000 Mixture

Recommended seeding rate: 20 kg/ha

Clovers and Timothy: 10 kg/ha Bromegrass and ryegrass (separately): 10 kg/ha

LAUTHORITY	Red Clover	10%
GLACIER LADINO	White Clover	20%
DAWN	Timothy	20%
AC SUCCESS	Hybrid Bromegrass	35%
TETRAX	Meadow fescue	15%

- A very productive and general-purpose pasture mixture for intensive management
- Very palatable for all types of livestock

SEEDING RATES

	Number of seeds	Pure stand		in association	
	kg	kg/ha	lb/acre	kg/ha	lb/acre
EXTRAGRASS +		32	28	10	9
TWO-BROMEGRASS +		20	18	12	9
ME 903		28	25	10	9
BROM-FEST		28	25	10	9
REED CANARYGRASS	1,200,000	12	10	4-9	3-8
MEADOW BROMEGRASS	175,000	13	11	5-10	4-9
SMOOTH BROMEGRASS	300,000	18	16	5-10	4-9
ORCHARDGRASS	1,450,000	11	10	3-5	3-4
FESTULOLIUM	250,000	20	16	3-5	3-4
MEADOW FESCUE	500,000	16	14	6-8	5-7
TALL FESCUE	500 000	16	14	3-5	3-4
CREEPING RED FESCUE	1,350,000	0	0	3-6	2-5
TIMOTHY	2,500,000	10	9	5-7	4-6
SUDANGRASS	132,000	35-40	31-36	10-15	8-13
BIRDSFOOT TREFOIL	815,000	10	9	2-7	2-6
ALFALFA	500,000	14	12	6-10	5-9
MIXTURE DITCHES AND SLOPES		50	45		
JAPANESE MILLET	340,000	20	18	8-10	7-9
PEARL MILLET	155,000	15	13	6-8	5-7
MUSTARD	220,000	12	10		
SWICTHGRASS	570,000	10	9		
KENTUCKY BLUEGRASS	4,800,000	150	133	3-20	2-18
PHACELIA	517,000	12	10		
4010 FORAGE PEA	5,000	100	90		
FORAGE RADISH	88,000	15	13		
OILSEED RADISH	88,000	15	13		
ANNUAL OR PERENNIAL DIPLOID RYEGRASS	500,000	20	18	3-5	3-4
ANNUAL OR PERENNIAL TRIPLOID RYEGRASS	250,000	35	31	3-5	3-4
INTERCROP ANNUAL RYEGRASS		15	13		
BUCKWHEAT	33,000	90	80		
FALL RYE		132	118		
SORGHUM OR BMR SORGHUM	75,000	35	31	10-15	9-13
WHITE CLOVER (Ladino, Dutch or Huia)	1,750,000			1-2	1-2
BERSEEM CLOVER	360,000	14	12	5	4
BLOSSOM CLOVER	528,000	15	13		
CRIMSON CLOVER	330,000	20	18	5	4
RED CLOVER	600,000	10	9	5-7	4-6
COMMON VETCH	15,500	40	36		
HAIRY VETCH	35,500	25	22		

COVER CROPS

In recent years, there have been noticeable changes in cultivation practices within the agricultural industry. One significant change is the increasing use of cover crops.

Agricultural producers are not only focused on achieving high yields and profitability but also on improving the health of their soils. They have recognized the importance of incorporating cover crops into their practices. This involves planting an intercrop alongside corn, soybeans, or cereals, utilizing green manure after harvesting cereals, or implementing riparian strips to minimize water and wind erosion. All these methods contribute to the goal of establishing a vegetal cover before the winter season.

By incorporating cover crops, farmers aim to achieve multiple benefits. These include reducing soil erosion, improving soil fertility, enhancing water infiltration, suppressing weed growth, and promoting biodiversity. The use of cover crops demonstrates a commitment to sustainable and environmentally-friendly agricultural practices.

Overall, the adoption of cover crops reflects a growing awareness among agricultural producers of the importance of preserving and nurturing the long-term health and productivity of their soils.

At Synagri, we have therefore relied on field trials with producers who are investing in these new practices to develop our new cover crop mixtures. Our observations have therefore enabled us to determine which species form the best possible combinations. Depending on your main crop, different mixes are available.

Do you want to increase the quality and structure of the soil, add nutrients?
Minimize erosion?

Control weeds?

If the answer is yes, we have got you covered!

THE CHOICE OF SPECIES

Forage peas

Fodder peas are one of the most efficient legumes for producing biomass. Hardy and fast growing, it excels as a green manure. It is fixing nitrogen, in addition to producing a good amount of organic matter, and it is easy to bury. Compared to faba bean, the root mass of the pea is very low. Dried aerial parts decompose very quickly.

Faba bean

Faba bean is an annual plant with erect stems that can reach 1.50 meters in height. The faba bean has a powerful swivel and fasciculate root system, which deeply structures the soil. It is excellent at fixing nitrogen in the soil. A faba bean field crop can enrich the soil up to 55 kg of nitrogen per acre. It is cold resistant and tolerates poor or clay soils.

Common vetch

It is cold tolerant, grows very well in the fall and starts very quickly in spring. Can be sown in combination with other species, as it is not very competitive at the early growing stage. It provides a very good biomass. It is therefore more than interesting in hilly soils where there is less organic matter. It is an annual plant that does not survive the winter unlike the hairy vetch.

Crimson clover

As can be seen in the photo on the left, this clover is a hairy-looking annual legume with flamboyant blood-red flowers. It grows to a height of 30 to 50 cm; its pale green leaves are covered with soft hairs. It has a single taproot which contains several nodules. It tolerates a wide variety of soil conditions, but performs best in well-drained, humified and loamy soils.

Berseem clover

This annual clover grows to a height of 30 to 120 cm. It has a hollow stem, slightly hairy leaves, and a yellowish-white flower. Its germination is like crimson clover, but it tolerates a drier seedbed. It has a short taproot that sits in the top 30 cm of the soil. It prefers loamy and clay soils. It tolerates poorly drained soils and drought better than crimson clover.

THE CHOICE OF SPECIES

Oats

Oats can be established in all types of soils, under all conditions. Its dense and deep root system effectively aerates the soil and helps reduce soil erosion, in addition to helping prevent the presence of weeds. It is a cold hardy annual grass that can be sown late. It is also a good source of carbon, which increases the humus level in the soil.

Annual ryegrass

This annual grass is interesting to sow with a legume. It has a structural root system for the soil that complements that of the legume. Ryegrass loves nitrogen and helps reduce leaching losses. On the other hand, it competes well with nitrogen-loving weeds. This is the most used plant as an intercrop in corn. Remember it can survive a mild winter... especially the biannual Italian type.

Chicory

Biennial plant with fast regrowth. Perenniality of 2 to 3 years. Tendency to go to seed quickly... Very good tolerance to the drought thanks to its deep root which can reach 1,5 meters of depth. Prefers sandy soil to avoid the risk of root rot. Not very demanding on the pH (from 5,5 to 7). Appreciates organic matter rich soils.

Fall rye

Here is a robust and rustic plant, adapted to all types of soils. It protects the soil from erosion and leaching, sanitizes and structures it. Rye creates a dense vegetation cover that survives the winter. It is buried the following spring before the crops are established. It is growing fast and tolerates frost. It also has an allelopathic effect... which prevents the establishment of other plants, especially a crop like corn. So, be careful with its use in rotations.

Kale

Cool Season Biennial. Kale is a leafy bush Brassica broadleaf. It can grow on poor land. The root system helps loosen up the top part of the soil profile. Kale has good salinity tolerance, and will help smother weeds. It has good fall frost tolerance and will tolerate shading. Leaves are large. Drought tolerance is good.

THE CHOICE OF SPECIES

Forage radish

It is an interesting annual plant to use as a green manure, because it has natural nematicide properties. The pivot of its root system is very powerful: it therefore has a very strong restructuring power of soils. Thanks to this pivot, the biomass produced by this radish is much greater than that of mustard, for example, without trapping more nitrogen. Its growth is rapid since its flowering occurs 7 to 9 weeks after sowing. It is less sensitive to heat and drought than mustard, and therefore suitable for early sowing.

Phacelia

Phacelia is a fast-growing plant that is used as a green manure to improve the composition and structure of the soil. Its rapid growth allows it to smother unwanted weeds. Not very demanding on the nature of the soil. It is cold and light frost resistant. Its flowers are very honey and attract many insects. It grows to a height of between 30 and 60 cm.

Ethiopian mustard

The rapid growth of mustard is just one of the qualities that make it an excellent green manure. Its deep roots help to decompact heavy soils and its aerial parts buried in the soil provide it with a first-rate nitrogen supply. Its role as a nematicide is very interesting in plots where potatoes have been grown. Because it grows very quickly and does not fear root competition, it covers the soil without delay and protects it from erosion.
A plant can reach 50-80 cm tall in a single month.

OUR COVER CROPS MIXES...

SYN-CO STABILITY mix

- 70% Forage peas
- 5% Forage radish
- 5% Kale
- 20% Oats

Recommended seeding rate, 85-95kg/ha

This mixture offers stability in the field since these are species that maximize rapid plant cover during their establishment. It is important to bury the mixture before the radish goes to seed otherwise it can become problematic the following year.

SYN-CO BIOMASS

- 95% Forage peas
- 2.5% Forage radish
- 2.5% Kale

Recommended seeding rate: 63 kg/ha

This mixture contains species that establish quickly, provide a large biomass and adapt to cold temperatures to grow later in the season. It is important to bury the mixture before the radish grow into seeds, otherwise it can become problematic the following year.

SYN-CO NITROGEN mix

- 20% Faba bean
- 20% Common vetch
- 10% Crimson clover
- 10% Berseem clover
- 40% Forage peas

Recommended seeding rate, 75-90kg/ha

This mixture is composed only of annual or biannual legumes to promote optimum nitrogen supply. These are plants that will normally be destroyed by winter. It provides a precedent crop for subsequent plants which require a significant need for nitrogen fertilization.

SYN-CO LATE mix

- 92% Oats
- 4% Forage radish
- 4% Kale

Recommanded seeding rate, 54 kg/ha

This mix is ideal when there are less than 6 weeks left in the growing season. It allows the recovery of fertilizing elements and the recovery of organic fertilizers. The removal of unused nitrogen is done quickly and in large quantities. Rapid growth and high biomass production.

OUR INTERCROP MIXES

Why intercrops?

EROSION UP TO	NITROGEN LOSS UP TO	PHOSPHORUS LOSS UP TO	RUNOFF UP TO
100%	70%	86%	78%

SYN-CO INTER1 mix

- 44% MELQUATRO annual (italian type) ryegrass
- 56% Crimson clover

Recommended seeding rate, 20kg/ha

This mixture contains ryegrass which helps structure the soil, promotes better bearing capacity for machinery and tolerates flooding. As for clover, it provides a source of nitrogen for the next crop, it tolerates drought, controls weeds, promotes soil biodiversity and is normally destroyed by winter. An economical mix...

SYN-CO INTER2 mix

- 24% MELQUATRO annual (italian type) ryegrass
- 58% Crimson clover
- 18% Forage radish

Recommended seeding rate, 20kg/ha

This mixture contains ryegrass which helps structure the soil, promotes better bearing capacity for machinery and tolerates flooding. Clover provides a source of nitrogen for the next crop, is drought tolerant, controls weeds, promotes soil biodiversity, and is normally destroyed by winter. As for the forage radish, it promotes water infiltration (aerates the soil), stores nitrogen and helps control weeds. A complete mix ...

OUR RIPARIAN MIX

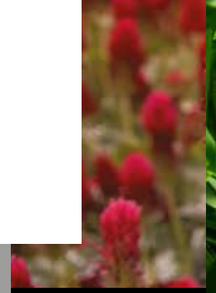
SYN-CO RIPARIAN

- 30% Creeping red fescue
- 10% Kentucky bluegrass
- 20% Timothy
- 10% Alsike clover
- 10% Annual ryegrass
- 20% Perennial ryegrass

Recommended seeding rate, 40 kg/ha

A riparian strip is much more than a simple collection of herbaceous and woody plants. It generates many ecological and economic services. In fact, it controls erosion, filters pollution, and it is an efficient ecosystem that welcomes flora and fauna. It also serves as a visual landmark in the landscape and helps to reduce certain costs. Undertaking the restoration of a riparian strip is no small feat. Indeed, it is one of the most important actions to ensure the water quality of lakes and rivers.

TABLES



Species table

Legend:
E = EXCELLENT
VG = VERY GOOD
G = GOOD
A = AVERAGE
P = POOR

	Annual ryegrass	Fall rye	Radish	Mustard	Crimson clover	Berseem clover	Common vetch	Faba Bean	Forage pea	Phacelia	Oats	Chicory	Kale
Seeding rate (kg/ha)	4-25	25-132	8-15	5-12	7-20	7-14	11-40	40-200	20-100	5-12	17-70	5-6	8-15
Dry matter (t/ha/yr)	2,2-10	3,4-11	4,5-8	3,4-10	3-4	3,5-4,5	4,5-9	6-7	4,5-5,6	1,2-4,5	4-5	8-16	4-8
Nitrogen fixers					VG	E	E	E	E				
Nitrogen recovery	VG	E	E	VG	A	G	G	P	A	E	VG	E	E
Soil builder	VG	E	VG	VG	E	VG	E	E	G	E	VG	E	VG
Erosion control	VG	E	VG	VG	VG	VG	G	G	VG		A	E	VG
Weed suppression	VG	E	E	VG	VG	VG	E	G	G	A	E	E	E
Allelopathic effect	G	E	VG	VG			G		A	P	TB		VG
Quicker growing	VG	E	VG	VG	A	A	VG	G	VG	A	E	E	VG
Flood tolerant	VG	G	A	A	G	G	G	A	A	P	A	P	A
Drought tolerant	A	E	A	VG	G	A	VG	G	G		G	E	A
Decreasing compaction	G	A	E	A	G	G	VG	G	A	P	P	E	E
Frost tolerance	-8°C	-15°C	-15°C	-7°C	-13°C	-13°C	-15°C	-5°C	-9°C	-7°C	-3°C	-3°C	-18°C
Small box					X	X				X		X	
Brome box	X		X	X									X
Box drill		X	X	X			X	X	X		X		X

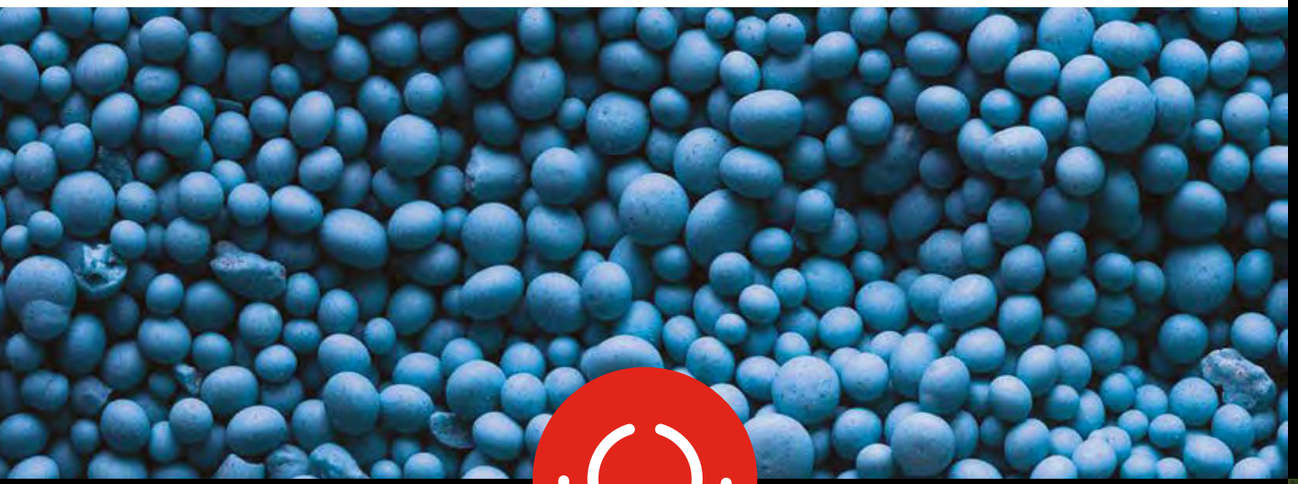
Note: The seeding rate varies depending on whether sown in combination or in pure

Mixes table

Legend:
E = EXCELLENT
VG = VERY GOOD
G = GOOD
A = AVERAGE
P = POOR

	Syn-Co stability	Syn-Co nitrogen	Syn-Co inter1	Syn-Co inter2	Syn-Co riparian	Syn-Co biomass	Syn-Co late
Seeding rate (kg/ha)	85-95	75-90	20	20	40	60	54
Nitrogen fixers	VG	E	G	G	P	E	P
Nitrogen recovery	G	A	G	VG	A	A	VG
Soil builder	G	VG	E	VG	VG	G	VG
Erosion control	VG	VG	VG	VG	E	TB	G
Weed suppression	G	VG	VG	E	G	G	E
Allelopathic effect	G	A	G	VG	G	A	VG
Quicker growing	VG	G	G	VG	G	VG	E
Flood tolerant	A	G	G	A	G	A	A
Drought tolerant	G	G	G	A	A	G	G
Decreasing compaction	A	G	G	VG	G	A	A
Frost tolerance	-9°C	-10°C	-10°C	-12°C	-5°C	-10°C	-9°C
Small box		X	X	X	X		
Brome box			X	X	X		
Box drill	X	X				X	X

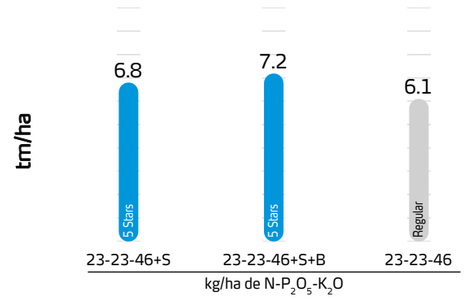
The composition of solid and liquid manure may not always align with the specific nutrient requirements of forage plants. To maintain soil fertility, balance, and ensure optimal growth and high-quality yields, the use of synthetic fertilizers becomes necessary. Synthetic fertilizers provide forage plants with the essential nutrients they need to thrive. In particular, the use of starter fertilizers is crucial for the success of forage crops. When plants are already established, they have an early demand for nutrients, especially during the spring season. However, during this time, the soil tends to be cold and wet, which limits its capacity to supply nutrients to the plants. This is where starter fertilizers come into play, providing the necessary nutrients directly to the plant's roots, bypassing the limitations of the soil conditions.



STARTERS IN FORAGE PLANTS

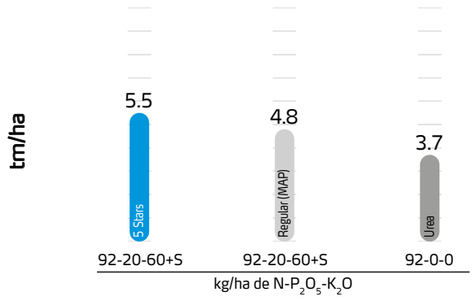
RESULTS

ALFALFA FERTILIZATION TESTS IN THE ESTRIE REGION, 2010. YIELD (KG/HA) AT THE 2ND CUT



Input after 1 application (after the 1st cut)

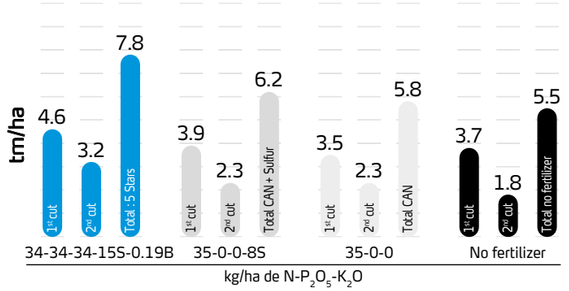
GRASS FERTILIZATION TESTS IN THE ESTRIE REGION, 2008. YIELD (KG/HA) AT THE 2ND CUT



Input after 2 applications (in the spring and after the 1st cut)

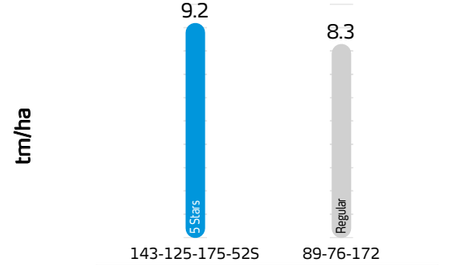
FERTILIZATION TESTS ON A 60% GRASS AND 40% LEGUMES (CLOVER) PRAIRIE, LAC-SAINT-JEAN, 2014 AND 2015

Yields (MT/ha) according to the treatments



Input of a spring application

PROGRAM COMPARISONS (5* VS. REGULAR). TOTAL YIELDS AFTER FOUR CUTS IN SAINT-ALBERT, 2016.



Input after 3 applications (after 3 cuts)

PROTECT-FOIN PLUS... for dry hay or silage

Protect-Foin Plus is a 70% buffered organic acid (56% propionic and 16% acetic). It is a liquid mold inhibitor for legume and grass hay with high moisture content. It is non-corrosive. It helps reduce heat build-up and mold in pressed hay between 20% and 35% humidity when used as directed.

Recommendations			
% moisture	Small Bales	% moisture	Large Square or Round Bales
16 - 19	3 liters/TM	15 – 18	3 liters/TM
20 – 24	5 liters/TM	19 – 22	6 liters/TM
25 – 29	10 liters/TM		
The density is 1.065 kg per liter			

Seal the silage silo (last 15-20 MT) by adding PROTECT-FOIN PLUS (5 L/ton) on the top of the silo.
Protect-Foin Plus is available in 20, 200 and 1,000 kg formats.

BIO-PLUS... for silage

200 g water soluble or 20 kg granular product (treats 40 MT of corn silage or 20 MT of grass silage). It's a unique and natural non corrosive product that combines 3 lactic bacteria and 3 enzymes.

A HOMOFERMENTATIVE inoculant

- Produces only lactic acid
- Lowers pH very quickly by preserving all sugars and producing very little heat
- Minimizes the loss of dry materials
- Improves the digestion of forage

MOLD-ZAP... for total mixed rations (TMRs) and silage

This is a unique mix of propionic and other buffered organic acids that blend to form a powerful mold inhibitor in TMRs and preserved foods.

The MOLD-ZAP:

- Reduces the heat caused by mold in TMRs, in coated feed and in silage exposed to air
- Improves savour thanks to its natural lemony taste
- Improves the quality of ingested feed
- Reduces waste in animal feed
- Helps reduce losses in animal production

Application rate

1 kg/ton of finished feed (maximum 2 kg/ton in a TMR)

To seal the silo (the last 15 to 20 tons) add MOLD-ZAP (3 kg/ton)

PRESERVING THE QUALITY OF DRY HAY

Investing in the conservation of your hay is important. The vagaries of weather, namely the drought periods in recent years, have led to fodder shortages; hay is scarce, and this has an impact on its price. It is therefore important to properly store all harvested hay.

During baling, the application of buffered organic acids (a mixture of propionic and acetic acid) such as **Protect-Foin Plus** allows you to harvest hay with a few more humidity points. These additional humidity points provide a larger harvest window while ensuring high-quality hay.

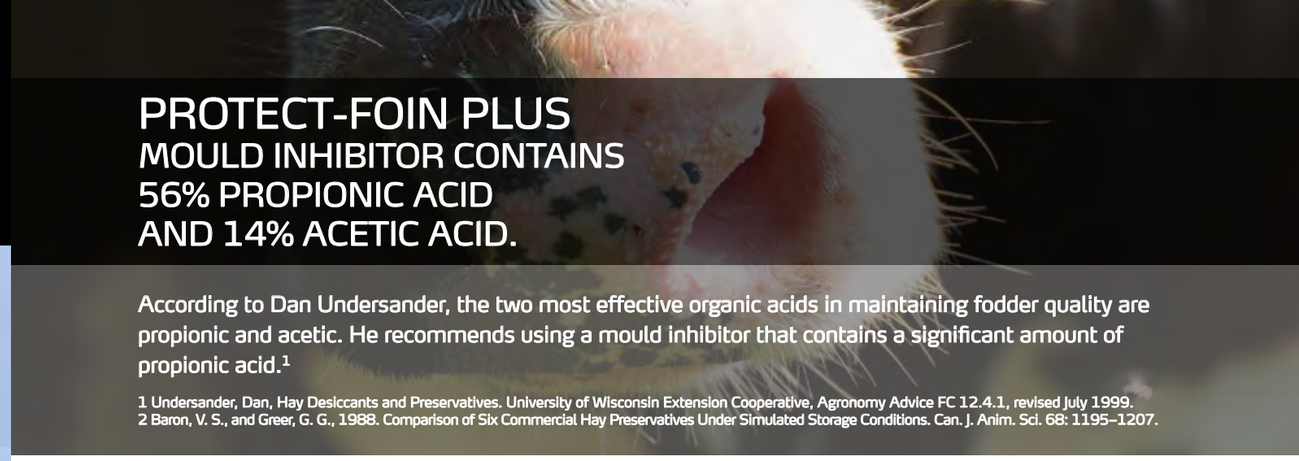
Protect-Foin Plus slows down the development of mould as well as temperature increases in hay bales. This limits the loss of soluble sugars and reduces the amount of dust in the dry hay.

PRESERVE THE QUALITY OF YOUR DRY HAY

Protect-Foin PLUS

The mold inhibitor PROTECT FOIN PLUS stops the development of mold and the production of toxins, it also preserves the quality of your forage.

Protect Foin Plus reduces the risk of heating and dustiness.



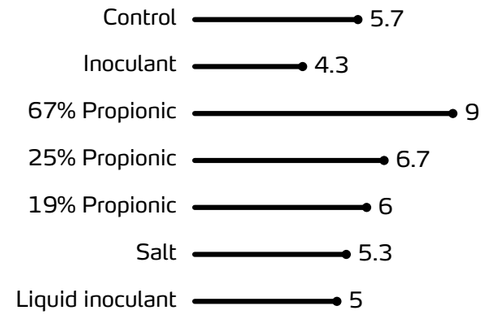
PROTECT-FOIN PLUS
MOULD INHIBITOR CONTAINS 56% PROPIONIC ACID AND 14% ACETIC ACID.

According to Dan Undersander, the two most effective organic acids in maintaining fodder quality are propionic and acetic. He recommends using a mould inhibitor that contains a significant amount of propionic acid.[1]

1 Undersander, Dan, Hay Desiccants and Preservatives. University of Wisconsin Extension Cooperative, Agronomy Advice FC 12.4.1, revised July 1999.
2 Baron, V. S., and Greer, G. G., 1988. Comparison of Six Commercial Hay Preservatives Under Simulated Storage Conditions. Can. J. Anim. Sci. 68: 1195–1207.

In a study carried out by researchers at Agriculture and Agri-Food Canada in Lacombe, Alberta, six preservatives were laboratory tested in dry hay, including three concentrations of propionic acid, an inoculant, salt, and a liquid inoculant (a mix of lactic acid, etc.). Several parameters were measured such as temperature rise and mould growth. The researchers observed the lowest mould-growth and temperature increases with buffered propionic acid.[2] They used a mould index to assess the effectiveness of different additives: the higher the index (close to 10) the less mould in the hay.

Comparison of Six Mould Inhibitors – AAC, Lacombe, Alberta



Protect Foin Plus allows you to press the hay at a slightly higher humidity level while avoiding temperature rises and preserving its nutritional properties. Mould produces mycotoxins like aflatoxin, vomitoxin, and zearalenone. The presence of these toxins can cause problems in terms of reproduction, consumption, and immune response. The addition of Protect-Foin Plus mould inhibitor stops mould growth and toxin production, in addition to preserving fodder quality.

MAXIMUM PERCENTAGE OF HUMIDITY FOR OPTIMAL CONSERVATION

Type of Bale	Maximum Percentage of Humidity Without Protect-Foin Plus*
Small square bale	18%
Small tight square bale	15%
Round bale	14%
Large square bale	12%

*Below 25% humidity, each dry matter point causes a loss of 1% of leaves. It is strongly recommended to apply Protect-Foin Plus when the percentage of humidity for each type of bale exceeds that indicated in the table.

CEREALS

Mylène Desautels, agr.
Cereals Expert / Seed Analyst
mylene.desautels@synagri.ca

In our CEREAL section, we take great pride in presenting a range of cultivars that have been meticulously developed through years of research and development at Synagri. These cultivars showcase outstanding yield potential and demonstrate resilience against diseases like wheat scab. We also offer varieties that possess excellent bread-making properties, characterized by high-protein levels. Additionally, our collection includes naked barley, which has shown its value in the animal feed industry.

Furthermore, we are excited to announce that new varieties will soon be introduced to our lineup. We encourage you to stay connected and remain updated as we unveil these upcoming additions. At Synagri, our commitment to innovation and providing farmers with top-quality cereal cultivars remains unwavering.

OATS

Mistral... for its whiteness

New white oat who have a good resistance of leaf diseases

Recommended seeding rates: 350 to 400 seeds/m² (135 to 155 kg/ha)

QUEBEC
YIELD

Zone 1	Zone 2	Zone 3
102%	91%	99%

Standability 3.5

ONTARIO
YIELD

Zone V
113%

MATURITY
97 days

Features index 1 to 9 (1 being more efficient)

NEW

OA1609-7... White spring Oat

Yield like AAC Nicolas
Good level of groats and B-Glucan
In evaluation by Quaker for human consumption

Recommended seeding rates: 350 to 400 seeds/m² (130 to 150 kg/ha)

QUEBEC
YIELD

Zone 1	Zone 2	Zone 3
108%	107%	103%

Standability 2.8

MATURITY
91 days

Features index 1 to 9 (1 being more efficient)

Synextra... the protein pro

Specific weight superior, solid and tall straw

Recommended seeding rates: 350 to 400 seeds/m² (135 to 155 kg/ha)

QUEBEC
YIELD

Zone 1	Zone 2	Zone 3
92%	98%	101%

Standability 4.8

MATURITY
93 days

Features index 1 to 9 (1 being more efficient)

AAC Banner... for oatmeal

Accepted by Quaker, oat with white almonds and a high level of B-Glucan, good disease tolerance.

Recommended seeding rates: 350 to 400 seeds/m² (125 to 145 kg/ha)

QUEBEC
YIELD

Zone 1	Zone 2	Zone 3
101%	91%	100%

Standability 3.6

MATURITY
98 days

WHEAT

We offer four bread wheats, as well as two feed wheat. Each one has specific unique characteristics.

AAC Synox... superior quality

- Mid maturity
- Outstanding bread-making quality protein % around 15-16
- Good tolerance to Fusarium
- Accepted by Ontario Wheat Board (OWB)

Crop management positioning

Recommendations:

- Seeding rates 450 to 500 seeds/m² (180 to 200 kg/ha)
- Nitrogen dose: 120 to 140 kg/ha
- Intensive management: 150 kg/ha
- Fungicide: T1: If needed
  T2: Recommended
  T3: Recommended
- Growth regulator: recommended, especially in conditions where there is a risk of lodging.

QUEBEC **YIELD**

Zone 1	Zone 2	Zone 3
104%	92%	94%

ONTARIO **YIELD**

Zone III	Zone V
105%	100%

Tolerance to fusarium — 2
Standability — 0.9

MATURITY
92 days

Features index 1 to 9 (1 being more efficient)

RGT Presidio... guaranteed yield

- A higher yielding wheat in all growing areas of Quebec
- Exceptional standability
- Suitable for high-performance management with phased fertilization and fungicides

Crop management positioning

Recommendations:

- Seeding rates 425 seeds/m² (165 kg/ha)
- Nitrogen dose: 125 to 150 kg/ha * according to yield potential.
- Fungicide: T1: If needed
  T2: Essential
  T3: Essential
- Growth regulator: in risk of lodging, otherwise not necessary.

QUEBEC **YIELD**

Zone 1	Zone 2	Zone 3
100%	102%	101%

Tolerance to fusarium — 4
Standability — 0.4

MATURITY
95 days

Features index 1 to 9 (1 being more efficient)

Major... high tolerance to Fusarium

- None-bearded wheat, late maturing with long straw
- Admissible to Pool C of the OWB since 2012
- Major is one of Quebec bread wheat with the best tolerance to Fusarium head blight (index 2) in Eastern Canada

Crop management positioning

Recommendations:

- Seeding rates 495 to 575 seeds/m² (200 to 230 kg/ha)
- Nitrogen dose: 125 to 150 kg/ha
- Fungicide: T1: If needed
  T2: If needed
  T3: If needed
- Growth regulator: Recommended in conditions where there is a risk of lodging

QUEBEC **YIELD**

Zone 1	Zone 2	Zone 3
101%	105%	95%

ONTARIO **YIELD**

Zone III	Zone V
98%	98%

Tolerance to fusarium — 1
Standability — 0.7

MATURITY
96 days

Features index 1 to 9 (1 being more efficient)

Sirlaurier... new in our forage offering

- Feed wheat
- For use in mixture or seeding alone
- Excellent yield and tolerance to Fusarium

Recommended seeding rates: 425 to 550 grains/m²

- Conventional: 180 to 185 kg/ha for an average seeding density of 425 seeds/m²
- High performance: 220 to 230 kg/ha for an average seeding density of 550 seeds/m²

QUEBEC **YIELD**

Zone 1	Zone 2	Zone 3
100%	95%	102%

Tolerance to fusarium — 1
Standability — 0.7

MATURITY
97 days

Features index 1 to 9 (1 being more efficient)

NEW

Audika... for quality and yield

- Excellent yield in all zone
- Good tolerance to diseases like rust and oïdium
- Excellent resistance to fusarium head blight
- Bread-making quality protein around 14%

Recommended seeding rates: 450 to 500 grains/m² (170 to 190 kg/ha)

QUEBEC **YIELD**

Zone 1	Zone 2	Zone 3
112%	109%	105%

Tolerance to fusarium — 1
Standability — 2.0

MATURITY
91 days

Features index 1 to 9 (1 being more efficient)

* 91 : Plant's breeder right of the International Union for the Protection of New Varieties of plants.

TRITICALE

NEW

Spring Triticale CIRCUIT

- Higher yield
- Excellent disease tolerance
- Good maturity
- Also used as a cover crop and forage supplement

QUEBEC
YIELD

Zone 1	Zone 2	Zone 3
101	112%	119%

Recommended seeding rates: 450 to 500 seeds/m² (190 to 200 kg/ha)

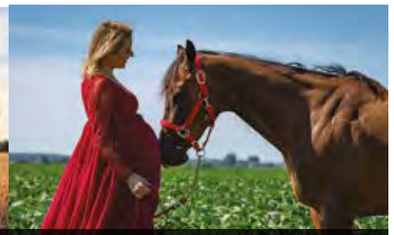
Tolerance to fusarium — 3
Standability — 1.8

MATURITY
97 days

Features index 1 to 9 (1 being more efficient)

LES FERMES BÉGIN
Sainte-Germaine, Boulé, QC

C.P.R. GRENON FARM
Saguenay, QC



C.H.L. INC.
Saint-Nazaire-d'Acton, QC

★★★★★

Photo Contest
WINNERS

Photo of My Field, my Pride Synagri

2022

LES CULTURES LORKA SENC.
Sainte-Croix, QC

FERME JEANIPA INC.
Saint-Marcel-de-Richelieu, QC

FERME PARADEN INC.
Honfleur, QC

Stack the odds even more in your favour.

Get enhanced weed control with Liberty 200 SN.

Just when you thought triple-stacked herbicide-tolerant soybeans couldn't get any better. Liberty® 200 SN herbicide helps you achieve a weed-free environment thanks to its unique Group 10 mode of action. In addition to rapid and complete burndown of tough-to-control broadleaf and grassy weeds, it gives you added flexibility across multiple herbicide-stacked soybeans that contain the LibertyLink® trait, and Enlist E3™. So let triple-stacked soybeans handle the yields – Liberty 200 SN will handle the weeds.
Visit **agsolutions.ca/Liberty200SN** to learn more.

Liberty® 200 SN
Herbicide

BASF
We create chemistry

Always read and follow label directions.

Through dozens of tests carried out over three years, we have compared the financial profitability of several doses of nitrogen in wheat. You can clearly see in the graphs below that the higher the nitrogen dose, the higher the yields. The challenge is to determine at which nitrogen dose it is no longer profitable to add more. We were able to measure that the most profitable nitrogen dose levels are as follows:

Presidio wheat: **125 to 140 kg/ha**. With more intensive management, **150 kg/ha** is ideal.
AAC Synox wheat: **110 to 130 kg/ha**. With more intensive management, **150 kg/ha** is ideal.

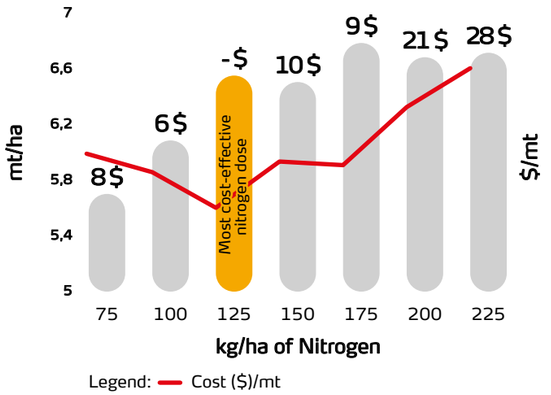
In fields with a lower yield potential, doses of 100 kg/ha are more suitable.

NITROGEN IN WHEAT

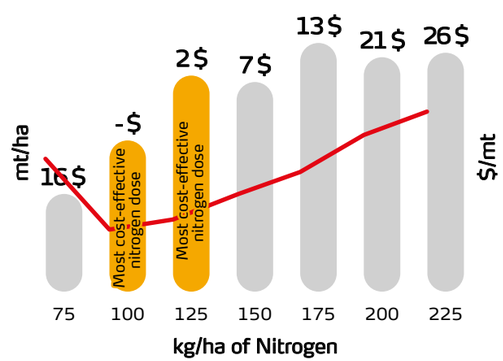
RESULTS

YaraBela® AXAN 27-0-0-3.75 (S)
YaraVera® AMIDAS™ 40-0-0-5.5 (S)

PRESIDIO – NITROGEN LEVEL
DIFFERENCE OF COST/MT VS. THE LOWEST



AAC SYNOX – NITROGEN LEVEL
DIFFERENCE OF COST/MT VS. THE LOWEST



Ideally, applications should be done as follows:

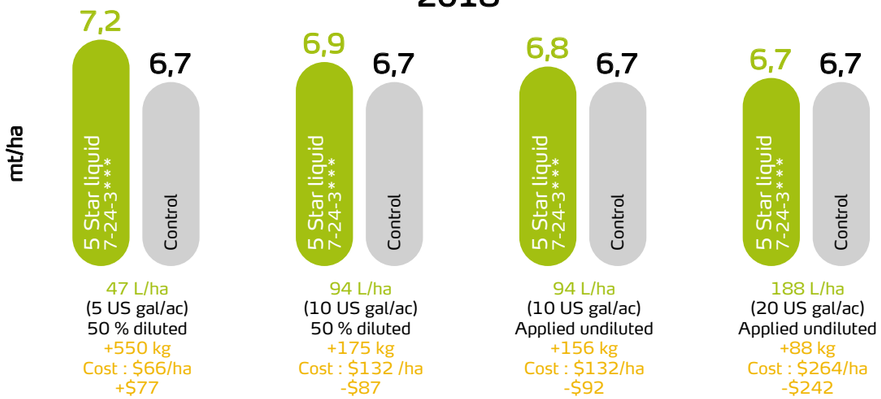
- **50 to 60 kg/ha** of incorporated nitrogen in preplant (with **YaraVera® AMIDAS™**)
- **55 to 90 kg/ha** of nitrogen at Z29 (with **YaraBela® AXAN** end tillering – beginning of stem elongation)
- Nitrogen can also be fractionated by reducing by **25 kg/ha** the dose at Z29, which will be added at Z39 (end of stem elongation, before boot stage) to improve protein level.

The primary goal of a liquid starter fertilizer, such as the 7-24-3 (5*), is to promote early plant growth and facilitate rapid root establishment. The effectiveness of a starter fertilizer lies in its ability to provide readily available phosphorus and facilitate quick absorption by the plant.

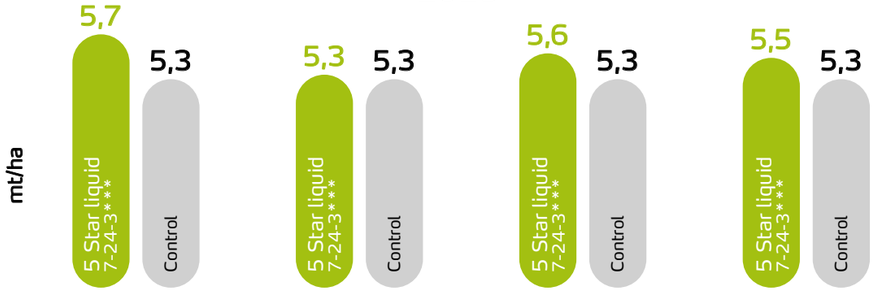
LIQUID STARTER IN WHEAT

RESULTS

LIQUID STARTER TESTS WITH 7-24-3 (5)* APPLIED IN POP-UP PLACEMENT (NEAR THE SEED) 2018



LIQUID STARTER TESTS WITH 7-24-3 (5)* APPLIED IN POP-UP PLACEMENT (NEAR THE SEED) 2019



Environmental stress conditions can have a serious impact on crop quality and yield. New OHM™ biostimulant from UPL has been proven to boost stress tolerance by optimizing nutrient utilization which results in increased root length, leaf size, biomass, plant vigour and higher yield potential. Its easy-to-use formulation can be tank-mixed with any UPL herbicide or fungicide in an integrated pronutiva® program for improved plant health in one pass.

Be ready for whatever Mother Nature has in store. Ask your UPL representative or retailer about OHM biostimulant or visit ohmbiostimulant.ca.

UPL OpenAg®

OHM™ BIOSTIMULANT

Leading crop protection for your soybeans.

We're ALL IN.

HERBICIDE		
Broadstrike™ RC	Diligent™	FirstRate™
Canopy™ PRO	Elevore™	Freestyle™
Classic™	NEW Enlist™ 1	
NEW Commenza™	Enlist Duo™	
FUNGICIDE	**SEED APPLIED TECHNOLOGY**	
Acapela™	Lumisena™	Lumiderm™

Every field is different, and no two years are the same - so we've got your back with a comprehensive lineup of crop protection solutions that meet your specific needs, every step of the way.

For more information, see your ag retail or visit **Corteva.ca**

CORTEVA™ agriscience

BARLEY

Bastile... high nutritional intake

- A 6-row hulless barley that is particularly well adapted to the colder regions
- Variety developed for animal feed to replace corn
  - in zones dedicated to small grains
  - to reduce the impact of toxin content (vomitoxins)
- Very high volumetric weight
- Average straw and appearance
- Excellent Fusarium index

YIELD
Possibility up to
2.1 mt/ac

SPECIFIC WEIGHT
(more than covered barley)
72.3 kg/hl

Tolerance to fusarium — 2
Standability — 1.6

MATURITY
87 days

Features index 1 to 9 (1 being more efficient)

Crop management positioning

Recommendations:

- Seeding rates 415 to 485 seeds/m² (170 to 195 kg/ha)
- Nitrogen dose: 80 to 110 kg/ha
- Fungicide: T1: If needed
  T2: If needed
  T3: If needed

Growth regulator: Recommended

In 2019, trials showed a 20% yield increase.

Oceanik... a little early

- It's a check for the tolerance to Fusarium in the RGCQ
- Excellent yield in Ontario zone III
- One of the earliest barley varieties

Recommended seeding rates: 375 to 440 seeds/m² (180 to 200 kg/ha)

QUEBEC
YIELD
96% Zone 1
95% Zone 2
91% Zone 3

ONTARIO
YIELD
99% Zone III
106% Zone V

Tolerance to fusarium — 4
Standability — 1.7

MATURITY
89 days

Features index 1 to 9 (1 being more efficient)

NEW

Waterloo... best yield in its category

In top 3 of the better in yield grains on market in all aeras.

- Long and solid straw
- Specific weight around 68 kg/hL

Recommended seeding rates : 375 to 440 seeds/m² (180 to 210 kg/ha)

QUEBEC
YIELD
107% Zone 1
103% Zone 2
104% Zone 3

Standability — 5
1.3

MATURITY
90 days

Features index 1 to 9 (1 being more efficient)

Coming soon: new results from the experiment on optimal quantities of naked barley to effectively replace grain maize in mixed feeding rations for dairy cattle. Stay tuned!

BASTILE Hulless Barley

can partially and advantageously replace corn in dairy cattle feed

AGRINOVA
RECHERCHE ET INNOVATION EN AGRICULTURE

Cristiano Côrtes, Ph. D.
Annie Perron, Agr.
Vicky Poirier, Agr.

Stéphanie Claveau, Biol., M. Env.
Gérard Landry, Agr.

YouTube
https://youtu.be/sNzg05bnotE

Context

In recent years, it has become increasingly popular among dairy farmers to optimize the use of farm-produced grains in their herd's feed. In more northern regions, such as the Saguenay–Lac-Saint-Jean region, the production of corn, the reference energy feed, is rather minimal due to the short growing season and the low corn heat units brought about by the climate. Companies are therefore constantly looking for crops with the characteristics needed to grow in northern conditions and that can be used to provide energy for their livestock feed. Since barley is an early cereal with a good energy source, it represents an interesting alternative.

Goals

To study the effects of hulless barley as a replacement for corn on the zootechnical and technical-economic performance of dairy cows under commercial farm conditions.

Methodology

Two homogeneous groups of cows at the start of the trial

Treatment	Corn (n = 15)	Hulless Barley (n = 15)
Lactation days	115	115
Parity	2.9	3
Milk production (kg)	41	41
Fat (%)	4.36	4.58
Protein (%)	3.51	3.45
SCC/ml	68,000	60,000
LPI	2,367	2,309

Ingredient	Corn	Hulless Barley
Supplement	1,208 g	243 g
Corn	3.4 kg	0
Hulless Barley	0	3.4 kg
Mineral	244 g	345 g

- Cow tracking;
- Bolus pH and temperature on two sentinel cows from each group;
- Milk components on six milk checks.

2018 Economic Study

irda RESEARCH AND DEVELOPMENT INSTITUTE FOR THE AGRI-ENVIRONMENT

Purchase price of ground corn ($/t)	Purchase price of ground hulless barley		
	$275	$250	$225
$255	$138	$169	$200
$265	$169	$181	$213
$275	$200	$194	$225
$285	$150	$206	$238

Savings between $6,900 and $11,900 per year for a herd of 50 cows

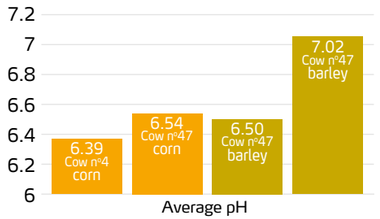
Purchase price of ground corn ($/t)	Hulless barley yield (t/ha)				
	3	3.5	3.8	4	4.5
$255	3.5	$179	$200	$212	$237
$265	3.8	$191	$212	$224	$250
$275	4	$203	$225	$237	$262
$285	4.5	$216	$237	$249	$275

Savings between $6,675 and $13,750 per year for a herd of 50 cows

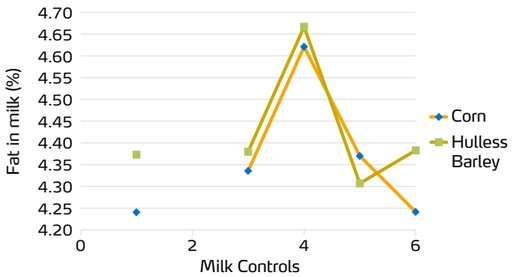
Zootechnical Results

Treatment	Corn	Hulless Barley	P-value
Milk production (kg/day)	36.9	37.1	0.91
Milk production 4% (kg/day)	38.4	39	0.72
Milk composition (%)			
Fat (%)	4.36	4.42	0.44
Protein	3.51	3.55	0.34
Lactose	4.61	4.56	0.08
Total solids	13.53	13.53	0.73
Urea (N mg/dL)	9.94	11.25	< 0.001
SCC/ml	145,000	116,000	0.44

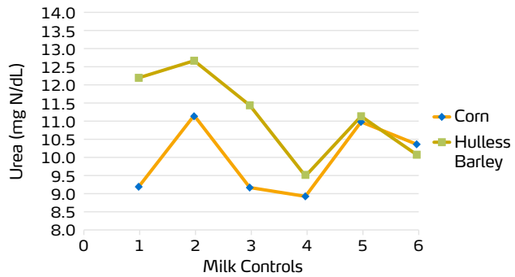
Average Ruminal pH Values of Four Sentinel Cows



Milk Fat Composition



Urea Milk Composition



Conclusion

- Substitution of 38.5% of corn by hulless barley = equivalent zootechnical performances
- Hulless barley: an interesting alternative for northern regions and organic farms (non-GMO hulless barley)
- It is preferable to include hulless barley in a PMR or a TMR (avoid any sorting)
- Instead of purchase, on-farm hulless barley production is more advantageous if a yield of 4 t/ha or more is achieved.

Financial Partners

Agriculture, Pêcheries et Alimentation Québec

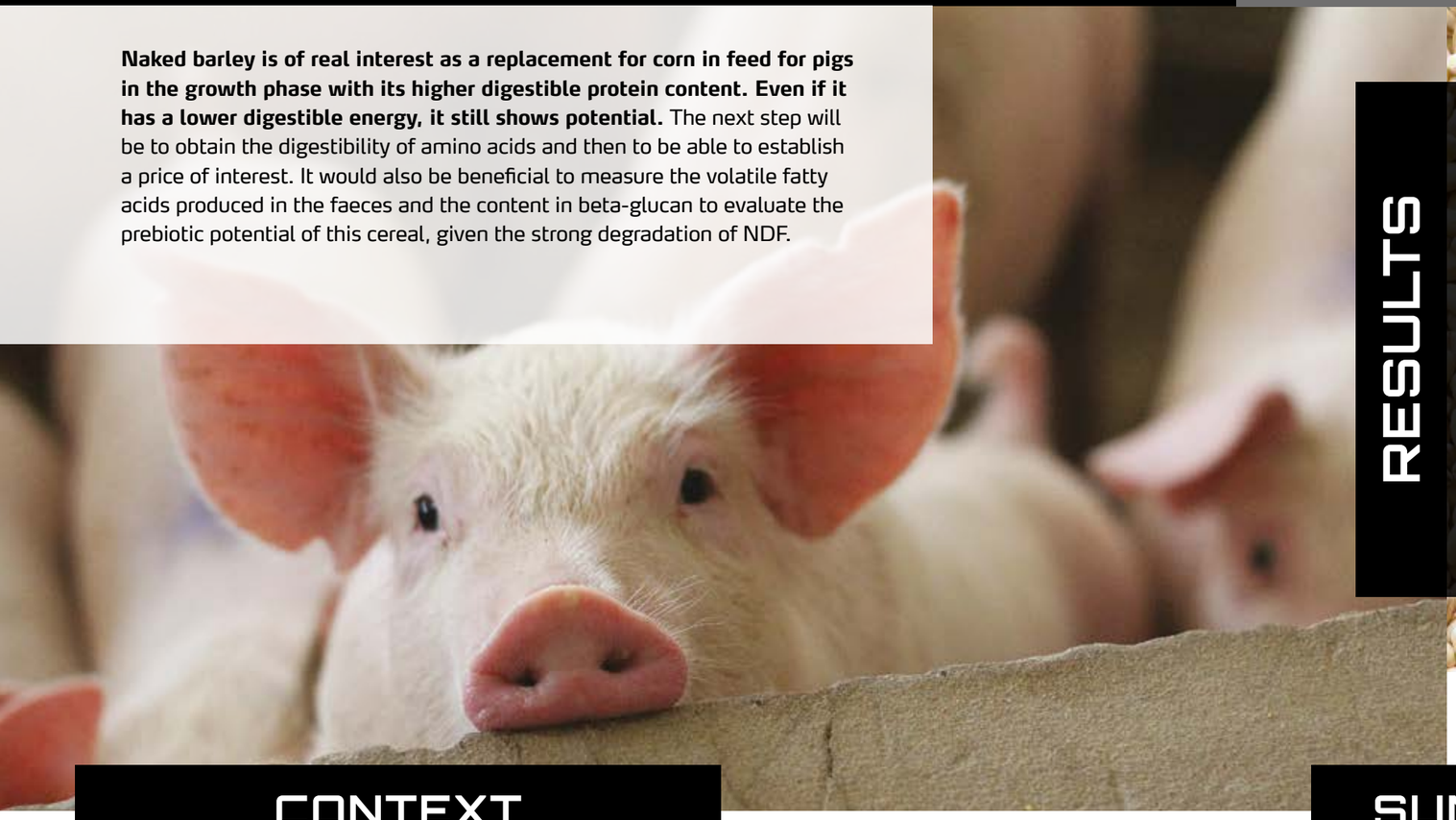
synAgri

ACKNOWLEDGEMENTS
- Gabriel Guay and Jacob Gauthier (Ferme des Sureaux inc.)
- Cécile Tétreault, (Synagri)
- Frédérick Ouellet, agr.

EVALUATION OF THE NUTRITIONAL VALUE OF NAKED BARLEY FOR PIGS IN GROWTH PHASE

The objective of this work was to evaluate the nutritional composition in the laboratory as a first step, then to estimate the ileal and total digestibility of nutrients in pigs of a variety of naked barley, which was compared with different types of corn.

Naked barley is of real interest as a replacement for corn in feed for pigs in the growth phase with its higher digestible protein content. Even if it has a lower digestible energy, it still shows potential. The next step will be to obtain the digestibility of amino acids and then to be able to establish a price of interest. It would also be beneficial to measure the volatile fatty acids produced in the faeces and the content in beta-glucan to evaluate the prebiotic potential of this cereal, given the strong degradation of NDF.



RESULTS

The results show that NDF (7.4 vs. 9.2%) and raw protein (CP, 6.9 vs. 10.3%) contents of naked barley are higher than corn, while ADF (3.5 vs. 2.3%) and raw energy (3,828 vs. 3,768 kcal/kg) were lower in naked barley ($P < 0.001$). Results of the digestibility test show an apparent ileal digestibility of naked barley's CP of 73.3%, not so different from that of corn, which is 74.4%. Thus, the digestible CP content of barley is higher than that of corn (7.65 vs. 5.03%, $P < 0.001$). The apparent digestible energy coefficient was lower for barley than for corn (86.2 vs. 89.6%, $P = 0.001$), just like the digestible energy in the food (3,247 vs. 3,430 Kcal/kg, $P < 0.001$). Finally, NDF was more degraded in barley than in corn (59 vs. 34%, $P < 0.001$), although the content was higher in the cereal.

CONTEXT

This project is carried out as part of a problematic where feeding pigs is the major element in the production cost of pork. Indeed, the price of commonly used raw materials, such as corn and soybean oil cake, are volatile and therefore subject to sudden price increases. Furthermore, they are consumed by humans, which undermines sustainability from a global perspective. Thus, reducing their use in feeding animals is one of the components of livestock production's sustainability. Several alternatives are available, but locally, in Québec, there are few. However, there are cereals with agronomic and nutritional potential that deserve to be further evaluated in animal feeding, such as naked barley, which is the subject of this work.

UNIVERSITÉ LAVAL

MP Létourneau Montminy,
Associate Professor,

Animal Science Department,
Université Laval

SUMMARY OF THE METHODOLOGY

A trial with pigs cannulated at the distal ileum was carried out from October to December 2020 at the Pavillon des Services of the Université Laval. Six castrated male pigs (F1, Alphagene) were placed in adjacent individual pens of 1 m × 2 m with enrichment and unlimited access to water. All six pigs were operated on to place an ileal T-cannula in order to collect ileal digestive content (Wubben et al., 2001). The six barrows were randomly assigned one of the eight corn or naked barley brought to 100% of the feeding with the addition of a premix of minerals and vitamins in a crossover device: 6 pigs × 9 treatments × 4 periods of 7 days. Pigs were weighed at each period to adjust the experimental ration to 4% of their body weight per day, divided into two meals. Collection of ileal flow and fresh faeces took place on the last two days of each experiment period.

WINTER CEREALS

Carnaval... doesn't feel the cold

- This feed quality wheat is adapted to our winter conditions
- The highest relative yield in its RGCQ trials
- Index 2 for Fusarium
- Very good winter survival, 95% average for 3 years
- Good quantity of straw with excellent resistance to lodging

Recommended seeding rates: 500 to 550 seeds/m² (190 to 220 kg/ha)

QUEBEC
YIELD

Zone 1	Zone 2	Zone 3
92%	103%	101%

Tolerance to fusarium 1
Standability 0.4

MATURITY
july 13

Features index 1 to 9 (1 being more efficient)

NEW

Pro 81...

It' a hard red winter wheat, with good resistance to diseases, Excellent winter survival and a good level of protein.

Recommended seeding rates: 500 to 550 seeds/m² (190 to 210kg/ha)

QUEBEC
YIELD

Zone 1	Zone 2	Zone 3
95%	98%	89%

ONTARIO
YIELD

Zone III	Zone V
103%	97%

Tolerance to fusarium 5
Standability 0.3

MATURITY
July 16

Features index 1 to 9 (1 being more efficient)

Facts on Cereal Mixtures

The components variation percentage (± 5%) is not necessarily the most important factor in the choice of a mixture. The environmental conditions in the current year determine the development of every component in the mixture. There is a complex relationship between seed characteristics and the environment in which they will compete with one another for space, water, nutriments and light. There are more advantages in growing mixtures in an uncertain farming environment.

* 91 : : Plant's breeder right of the International Union for the Protection of New Varieties of plants.

SYNAGRI CEREAL SEED MIXTURE

Possibility of making **special mixtures**, with the proportions and components of your choice, according to stock availability.

*A minimum number of bags is required.

All the SYNAGRI exclusive cereal seed mixtures are designed to ensure the best combination of varieties according to the nutritional needs required. Particular attention is always a priority in order to harmonize the maturity, length of straw and tolerance to lodging in the combined varieties.

Cereal Mixtures with 2 varieties...

to improve the nutritional value of oat

	Species	Varieties[1]	Seedind rate	Benefits
SEM 610	60% Wheat 40% Oat	Sirlaurier Mistral	140 kg/ha	▪ Protein and energy contribution from the wheat ▪ Curative, fibrous contribution from the oats ▪ Balanced mix in less fertile soils and a better nutritional yield

Cereal Mixtures with 3 varieties...

best mixtures for balance, in the field and in the barn

	Species	Varieties[1]	Seedind rate	Benefits
SEM 530	50% Wheat 25% Oat 25% Hulless Oat	Sirlaurier Mistral Lavoie	135 kg/ha	▪ Possibility of seeding in a greater range of soils
SEM 520	50% Wheat 25% Oat 25% Barley	Sirlaurier Mistral Waterloo	135 kg/ha	▪ Balanced nutritional ratio ▪ Very good yield potential ▪ Excellent synergy between species ▪ Great adaptability
SEM 350	35% Wheat 35% Peas 30% Oat	Sirlaurier CDC Meadow Mistral	165 kg/ha	▪ Uniform maturity, balanced mix ▪ Basis of a well-balanced animal feed ▪ Good protein input coming from peas and wheat ▪ Adaptable to every soil type

Cereal Mixtures with 4 varieties...

for constant and balanced mixtures

	Species	Varieties[1]	Seedind rate	Benefits
SEM 250	25% Wheat 25% Oat 25% Barley 25% Peas	Sirlaurier Mistral Waterloo CDC Meadow	165 kg/ha	▪ Diversified mix combining different species ▪ Very well-balanced to act as a base in quality animal feed ▪ Balanced components

1. Subject to availability

SYNAGRI FORAGE MIXTURE

Forage Mixtures with 2 or 3 varieties...

for use as a cover crop, green crop harvested at the filling stage

	Species	Seedind rate	Benefits
SEM 500	50% Forage Oat[1] 50% Forage Peas[2]	120 kg/ha	▪ Mix similar to Sem 400 but without the wheat ▪ Totally appropriate for Quebec's cooler regions ▪ Better yield than seeding a single forage plant ▪ Oats contributes to yield and nutritional qualities ▪ Peas preserve quality in case of late harvest ▪ Helps ingestion
SEM 400	40% Forage Wheat 40% Forage Peas[2] 20% Forage Oat[1]	130 kg/ha	▪ Extremely efficient mix that can attain 3,800 to 4,500 kg/ha of dry matter at the first cut ▪ Wheat has a better yield than oats, especially in warm regions ▪ Possible analysis of 16 to 20% total protein ▪ Adaptable to many types of storage ▪ Peas preserve quality in case of late harvest ▪ Can be grown in any soil type ▪ Good competition for weeds ▪ Maintains good soil

[1] CDC Haymaker [2] Lacross (stock availability)

NEW

Forage peas Lacross

- For need in forage only, **ONLY SALE IN MIXTURE.**
- Protein yield high
- Intermediate maturity
- Good match with CDC Haymaker oat in your mix SEM 500.
- Excellent lodging resistance.

Seeding rate

Recommended seeding rates are given for guidance only; the weight of 1000 each specific grains each lot remains the best tool for the calculation of an accurate seeding.

Spring Wheat	425 to 550 seeds/m²
Barley	375 to 440 seeds/m²
Oat	350 to 400 seeds/m²

Seeding rate for different varieties used as a cover crop: -30% of the density of the seed suggested

Number of seeds to be sown by linear meter in relation to the disc row spacing and the desired number of seeds per square meter.

Row spacing		Desired Number of Seeds per m²												
In	mm	300	325	350	375	400	425	450	475	500	525	550	575	600
4	102	30.6	33.2	35.7	38.3	40.8	43.4	45.9	48.5	51	53.6	56.1	58.7	61.2
5	127	38.1	41.3	44.5	47.6	50.8	54	57.2	60.3	63.5	66.7	69.9	73	76.2
6	152	45.6	49.4	53.2	57	60.8	64.6	68.4	72.2	76	79.8	83.6	87.4	91.2
7	178	53.4	57.9	62.3	66.8	71.2	75.7	80.1	84.6	89	93.5	97.9	102.4	106.8

1000 Seed Weight (TKW) in Grams of the Variety to Seed

Desired established population (plants/m²)	Seeding density (grains/m²)	30		32		34		36		38		40		42		44		46		48		50	
		lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha	lb/a	kg/ha
280	325	87	98	93	104	98	111	104	117	110	124	116	130	122	137	127	143	133	150	139	156	145	163
300	350	94	105	100	112	106	119	112	126	118	133	125	140	131	147	137	154	143	161	150	168	156	175
320	375	100	113	107	120	114	128	120	135	127	143	134	150	140	158	147	165	154	173	160	180	167	188
340	400	107	120	114	128	121	136	128	144	135	152	143	160	150	168	157	176	164	184	171	192	178	200
360	425	114	128	121	136	129	145	136	153	144	162	151	170	159	179	167	187	174	196	182	204	189	213
380	450	120	135	128	144	136	153	144	162	152	171	160	180	168	189	176	198	184	207	192	216	200	225
400	475	127	143	135	152	144	162	152	171	161	181	169	190	178	200	186	209	195	219	203	228	212	238
420	500	134	150	143	160	151	170	160	180	169	190	178	200	187	210	196	220	205	230	214	240	223	250
440	525	140	158	150	168	159	179	168	189	178	200	187	210	196	221	206	231	215	242	224	252	234	263
460	550	147	165	157	176	167	187	176	198	186	209	196	220	206	231	216	242	225	253	235	264	245	275
480	575	154	173	164	184	174	196	184	207	195	219	205	230	215	242	225	253	236	265	246	276	256	288
500	600	160	180	171	192	182	204	192	216	203	228	214	240	224	252	235	264	246	276	257	288	267	300

Source: CPVQ 1988 - Spring Cereals

Note: The desired population, in plants/m², represents 85% (minimum germination percentage required for grade 1 pedigreed seeds) of the seeding density in seeds/m².

Determining the Seeding Rate

The seeding rate in kg/ha (lb/ac) is calculated according to the desired density and seed size (g/1000 seeds). For the same population, the smaller the seed, the lower the seeding rate.

kg/ha = (g/1000 seeds) × (seeds/m²)/100

Example of seeding rate calculation:

AAC Synox wheat weighing 40 g for 1000 seeds. For a seeding density of 450 seeds/m².
(40 g/1000 seeds) × (450 seeds/m²)/100 = 180 kg/ha

You can also use the table above; Weight of 1,000 seeds in grams of the variety to be sown.

The first column represents the desired established population (plants/m²) in the field for a minimum germination of 85%. If the germination is higher, the established population will also be higher. The second column represents the seeding density (seeds/m²) to be used to obtain the desired final field population. This column should also be used to calculate the seeding rate. For example, if we use a seeding density of 450 seeds/m² and the germination rate of our seed is 85%, we can expect to have a population of 380 plants/m². The other columns of the table represent the seeding rate in kg/ha or lb/ac depending on the 1,000 seed weight (1st row).

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3 and 5 star Granular

3 and 5 Star fertilizer, more than a high-quality product line.

3 and 5 star Liquid

No compromise when it comes to performance with our 3 and 5 Star liquid starters.

YARA

Yara is a global company involved in the production of innovative and efficient products.

N-POWER BLUE

A unique, synergistic, nitrogenous solution with a less volatile composition.

Regular

High-quality regular granular and liquid fertilizer.

Amendments

Liming products, leveraging our soils and fertilizer.

SOYBEANS

Samir Aoudia, agr.
Corn and Soybean Expert
samir.aoudia@synagri.ca

Proud to help feed the world.

Over the past few years, we have acquired and introduced new varieties to our IP (Identity Preserved) soybean line in order to meet the demands of processors and consumers around the world. This year again, we are introducing KATANO (2600 CHU). This IP soybean is in the top yields at a 15-inch spacing within its zone. Our non-GMO conventional varieties are renowned for their resistance to *White Mold*, lodging and their high yield.

We buy back all the crops of our varieties through two different buyers: For the Synagri line, we have Nova Grain with storage facilities in Saint-Hyacinthe and Saint-Isidore de La Prairie. For the Belcan Seeds line, we work with St-Lawrence Beans and their site in Sainte-Marthe.

Finally, you can rely on our dedicated teams to accompany you from the field entry to harvest.

IP SOYBEANS

	PRODUCT DESCRIPTION											
	IP VARIETIES											
CHU	2600			2650			2725			2750		
VARIETIES	KATANO			KYOTO			IKEDA			KAGAWA		
Seeds/kg (variable indicative data)	4,500-5,000			4,800-5,400			4,000-4,500			4,000-4,500		
Row Spacing (inches)	7	15	30	7	15	30	7	15	30	7	15	30
No. of Seeds Planted (seeds/ha)	500	475	450	550	500	450	450	425	400	500	475	450
Seeding Rate (kg/ha)	103	98	93	110	100	90	104	97	92	118	110	106
Seeding Rate (lb/ac)	92	87	83	98	89	80	93	86	82	105	98	94
No.of Seeds Planted (seeds/10 feet)	26	54	102	29	56	102	24	48	90	26	54	102
Type of Plant	semi-bushy			semi-bushy			semi-bushy			semi-bushy		
Height of Plant	average			average			average			average		
Hilum Color	yellow imperfect			yellow imperfect			yellow imperfect			yellow imperfect		
Protein Level (%) (variable indicative data)	42.5			42.5			41.6			42.6		

Height of plant: 1 = low 3 = average 5 = high Protein and gr/kg = variable indicating data

KATANO... New 2600 CHU at the top of its range

(2600 CHU)

- Early variety with good agronomic characteristics
- Excellent standability
- Good protein level over 42%: RGCQ* 2022
- Yields over 500 kg/ha above the ASAHI: RGCQ* 2022 (2 year average)
- Good resistance to *White Mold*

MANAGEMENT:

- Optimal every 7 and 15 inches

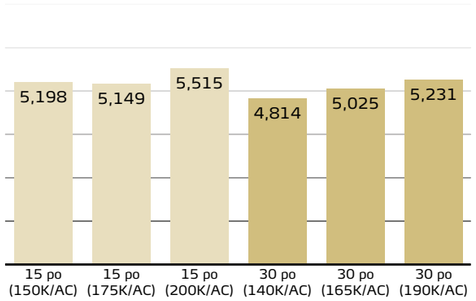
Features Index 1 to 5 (5 having the best performance)

KYOTO... new reference against *White Mold*

(2650 CHU)

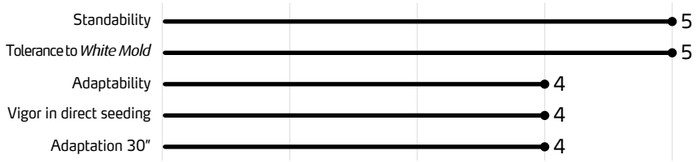
- Variety with outstanding agronomic qualities
- Excellent standability
- Consistently high performance under our conditions
  - RGCQ* 2021 (average 1 year) 103%, RGCQ (2020-2021) 100%
  - OSVT 2022 (Ontario 2 years) 102%
  - OSVT 2022 (Ontario 2 years) 105% Ottawa
- Good protein level at 42,8% - RGCQ* 2022
- Excellent resistance to White Mold, the best rating at the RGCQ 2013,2014, 2015, 2016, 2017, 2018 and 2019 with an index 0.7

KYOTO (2650 CHU)
Yield Trial (kg/ha) according to spacing and seeding rate (grains x 1,000/ac) - Synagri R&D 2022



MANAGEMENT:

- Optimal every 15 inches (seeding rates 500 K seeds/ha) : Synagri R&D 2022
- Performs well with 7 to 30-inch spacings
- Adapted for direct seeding
- Suitable for all types of soil



Features Index 1 to 5 (5 having the best performance)

IP SOYBEANS

IKEDA... yield for your direct seeding with 30-inch spacing

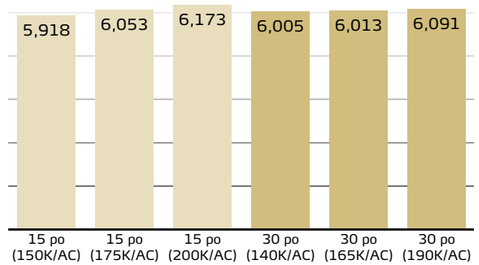
(2725 CHU)

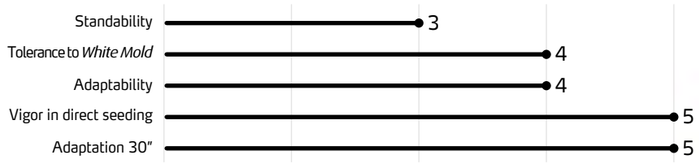
- Soybean that branches; ideal for seeding with 30-inch spacing
- Excellent spring vigour
- Good yield for all spacings
  - RGCQ (2020-2021) 107%
  - RGCQ 30 inches (2020-2021) 112%
- Healthy plant
- Good standability

MANAGEMENT:

- Optimal at 15 & 30 inches (seeding rate 500 K & 350 K grains/ha respectively): R&D Synagri 2022
- Performance in all types of soil and suitable for direct seeding

IKEDA (2725 CHU)
Yield Trial (kg/ha) according to spacing and seeding rate (grains x 1,000/ac) - Synagri R&D 2022





Features Index 1 to 5 (5 having the best performance)

KAGAWA... yield and excellent tolerance to *White Mold*

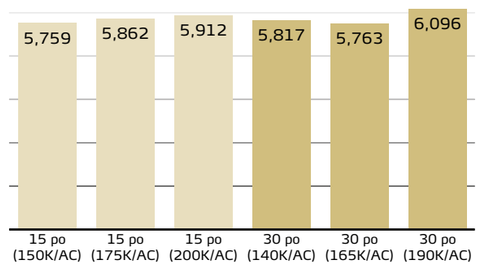
(2750 CHU)

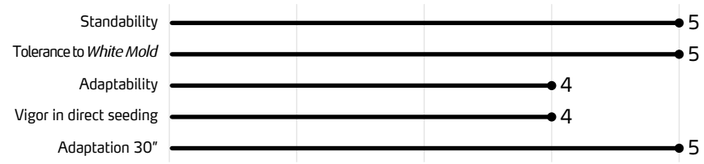
- Excellent tolerance to *White Mold* with a score of 1.0 RGCQ 2019
- Excellent standability
  - RGCQ* 2022 (average 1 year) 106%
  - OSVT 2022 (average 3 years) 100% Winchester
  - OSVT 2021 (average 2 years) 105%
- Good protein level at 43,6% at RGCQ* 2022

MANAGEMENT:

- Optimal at 15 & 30 inches (seeding rate 500 K & 475 K grains/ha respectively): R&D Synagri 2022

KAGAWA (2750 CHU)
Yield Trial (kg/ha) according to spacing and seeding rate (grains x 1,000/ac) - Synagri R&D 2022





Features Index 1 to 5 (5 having the best performance)

Soybean planter calibration chart - Synagri 2023 -2024

Soybean Seeding Rate		Number Seeds per 10 Feet			Seeding Rate in kg/ha - (lb/ac) According to Seed Size (seeds/kg)											
					4, 000		4,400		4,800		5,200		5,600		6,000	
seeds/ha	(seeds/ac)	7 po	15 po	30 po	kg/ha	(lb/ac)	kg/ha	(lb/ac)	kg/ha	(lb/ac)	kg/ha	(lb/ac)	kg/ha	(lb/ac)	kg/ha	(lb/ac)
300,000	(120,000)	16	34	68	74	(66)	67	(60)	62	(55)	57	(51)	53	(47)	49	(44)
350,000	(140,000)	18	40	79	86	(77)	79	(70)	72	(64)	66	(59)	62	(55)	57	(51)
400,000	(160,000)	21	45	90	99	(88)	90	(80)	82	(73)	76	(68)	71	(63)	67	(60)
450,000	(180,000)	24	51	102	111	(99)	101	(89)	93	(83)	85	(76)	79	(71)	74	(66)
500,000	(200,000)	26	56	113	124	(110)	112	(100)	103	(92)	95	(85)	88	(79)	82	(73)
550,000	(220,000)	29	62	124	136	(121)	124	(110)	113	(101)	105	(93)	97	(86)	91	(81)

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- **Metabolic signals**
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- **Chitosan**

CropBooster
15–3–6 + 2 % S + micros
Complete Foliar Nutrient
ACTIVATED BY Oligo® Prime

RR SoyBooster
6–18–6 + 5 % S + micros
Foliar Nutrient
ACTIVATED BY Oligo® Prime

Scientific Trial Results
2014-2021

Results obtained at McGill University, University of Guelph, Laval University, CEROM, Black Creek Research and AgQuest.

CropBooster Oligo® Prime	CropBooster 2.0	CropBooster Oligo® Prime
↑ Corn Yield increase	516 kg/ha	844 kg/ha
Return on investment (ROI)	7.6 to 1	11.4 to 1
↑ Soybean Yield increase	41 kg/ha	243 kg/ha
Return on investment (ROI)	1.3 to 1	7.0 to 1

Complete data and other information available upon request.

CropBooster® Oligo® Prime and **RR SoyBooster® Oligo® Prime** are exclusive products to Synagri.

	PRODUCT DESCRIPTION														
	Belcan Seeds VARIETIES														
CHU	2500			2650			2700			2775			2825		
VARIETIES	RICHMOND			OAC CHAMPION			OAC EVOLUTION			OAC ACCLAIM			OAC ELEVATION		
Seeds/kg	4,900			5,000			5,000			5,200			4,900		
Row spacing (inches)	7	15	30	7	15	30	7	15	30	7	15	30	7	15	30
Number of seeds planted (x 1000)/ha	500	450	420	500	450	420	450	420	400	500	450	420	500	450	420
Seeding rate (kg/ha)	102	92	86	100	90	84	90	84	80	96	87	81	102	92	86
Type of plant	Semi-bushy			Semi-bushy			Semi-bushy			Semi-bushy			Semi-bushy		
Height of plant in cm	83			83			78			64			79		
Hilum colour	Imperfect yellow			Imperfect yellow			Imperfect yellow			Imperfect yellow			Imperfect yellow		
Protein level (%)	44.6			42.0			40.0			42.0			44.0		
Yield	4.0			4.0			5.0			4.5			4.5		
Standability	4.5			4.0			4.8			5.0			4.6		
Disease resistance	4.1			4.2			4.2			4.0			4.0		
Adaptability	4.0			4.2			4.0			4.0			4.0		
Vigor	5.0			4.0			5.0			4.0			4.0		
Adaptation 30 inches	3.5			3.5			3.5			4.0			4.5		

Height of plant: 1=small, 3=mean, 5=high
The protein level and seeds/kg are only informative

RICHMOND (CLS12-001,007) | 2500 CHU

- New for 2021–2022
- Very high protein variety
- Good yield for its maturity
- IP and Organic production contract available

OAC CHAMPION | 2650 CHU

- Excellent tolerance to *White Mold*
  - OSVT 2021 (Ontario 2 years average) 102%
- Very high demand on the IP market
- IP and Organic production contract available

OAC EVOLUTION | 2700 CHU

- Excellent tolerance to *White Mold*
- Excellent yield potential
  - OSVT 2021; 113%
- Open loop (No harvest buyback obligations)

OAC ACCLAIM | 2775 CHU

- Very good standability
- Excellent yield potential
  - OSVT 2021 (Ontario 3 years average) 105% Ottawa

OAC ELEVATION | 2825 CHU

- High-protein variety
- Excellent tolerance to phytophtora

It is recognized that the likelihood of maximizing soybean yields increases with early planting. This practice strongly encourages the use of a starter fertilizer, which promotes faster plant emergence in cooler soil conditions compared to late planting. A starter fertilizer containing phosphorus and a small amount of nitrogen is beneficial, as these two nutrients promote early root development, which in turn stimulates nodule formation and nitrogen fixation.

The nitrogen in the starter fertilizer supports root development without replacing or hindering nodule development. On the contrary, a well-developed root system enables leaves to engage in photosynthesis more quickly, thanks to the supply of fertilizing elements. Well-developed leaves can provide sugars to the nodules, which, in turn, supply nitrogen to the plant and so on. Yields are maximized when the nodules can rapidly and abundantly supply nitrogen to the plant.

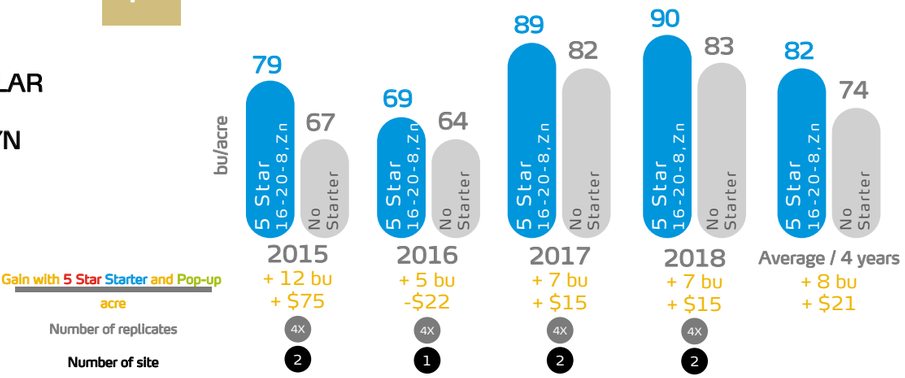
STARTER IN SOYBEAN

RESULTS

a highly recommended approach

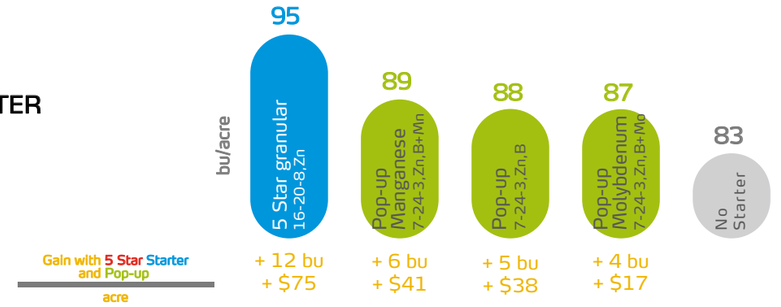
N NITROGEN P PHOSPHORUS

5 STAR GRANULAR STARTER WITH MYCROSYN TECHNOLOGY vs NO STARTER



- Site: Saint-Hyacinthe
- Source: R&D Synagri
- Soybean at $12.25/bu

5 STAR GRANULAR STARTER vs POP-UP vs NONE 2018



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Stéphane Gagnon, agr.
Agronomic Data Manager
stephane.gagnon@synagri.ca

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Soil Analyzes
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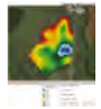

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Comprehensive visual report of the state of field fertility

Recommendations for Lime and Variable-Rate Fertilizers

Recommendations for Nitrogen and Variable-Rate Seedling

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