

syngenta



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Breeding to Meet the Next Green Revolution

Vegetable crop genetics offer the first step to tackle many of the difficult challenges currently impacting on the profitability of UK growers. Syngenta is at the forefront of delivering varieties developed to meet growers' changing needs.

Your variety selection will have a major influence on business performance at all levels, from practical agronomy decisions, to resolving labour shortages, managing increasing costs, coping with changing climate, creating innovative markets and, ultimately, satisfying the end-consumer.

Now, with the industry's extra focus on delivering a reduction in carbon emissions, variety choice will be crucial in driving towards net zero targets.

For our specialist vegetable and salad crop variety breeders, high yield remains a key objective for any new development. However, greater focus on the traits for efficiency of production and marketability could lead to improved overall profitability and business sustainability.

Working with our dedicated UK field team to tailor variety characteristics best suited to a farm's individual situation can deliver better returns for the current season and justify investment in your business for the future.

Making more efficient use of every input will be crucial for lowering costs and reducing environmental impacts of production. With escalating fertiliser costs, for example, varieties available now that perform well – or in some cases better – under a low-nutrition regime offer real benefits. Drought and heat tolerance will be essential variety attributes to make more effective use of water resources in the future.

Breeding varieties with the resilience to cope with climate extremes better assures consistent and predictable production for you and your customers. Syngenta's pan-European and global reach gives access to vegetable crop

genetics and experience that will be invaluable for UK growers to adapt.

Today's Syngenta variety selection could enable UK growers to supply an extended season of home-grown produce in demand from customers – reducing costs, challenges and carbon footprint of long-distance transport.

With labour availability now a major issue for growers across Europe, which has been amplified in the UK since Brexit, means mechanical harvesting and processing requires significant investment from growers. Varieties bred with the robustness and uniformity to suit mechanical harvesting systems are essential for the exciting technology to be effectively utilised and to justify the investment.

Furthermore, Syngenta's development of vegetable and salad varieties that require less trimming and processing helps to save time and cost on packing lines, as well as reducing waste right through to the retail shelf and enhanced end-consumer satisfaction.

For the future, varieties that will perform consistently well in Integrated Pest Management (IPM) systems will become increasingly important. Interpreting responses to biological, biopesticide and biostimulant inputs is only possible through extensive trials and specialist understanding of plants' genetic potential.

The continued ability of UK vegetable and salad growers to adapt to new challenges is ever more important. Syngenta seed breeders and our UK field teams are committed to developing and supporting the exciting and innovative varieties highlighted in this catalogue, that will meet your needs now and in the future.

Meet the Team



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Clubroot symptoms

Clubroot is a soil-borne fungal disease which attacks the roots of Brassica crops. It is considered as one of the most economically important diseases of cultivated crucifers. Roots affected by clubroot are swollen and distorted. The damage caused to the roots causes crops to be stunted and, in most cases, there is a reduction in yield. The pathogen survives in the soil for up to 15 years in the form of resting spores released from decayed galls.



Syngenta's solutions

The potential of cultural practices to reduce crop losses due to clubroot are limited and chemical treatments to control the fungus are either banned, due to environmental regulations, or are not cost-effective. The best way to combat clubroot is through the breeding of resistant varieties. Syngenta has succeeded, after many years of breeding, to introduce a high level of resistance in varieties of cabbage (Chinese, White & Green), Brussels sprouts, broccoli and cauliflower. Syngenta will, over the coming years, be introducing the resistance across the Brassica range.

We currently have the following varieties with clubroot resistance:

BROCCOLI	BRUSSELS SPROUTS	SAVOY CABBAGE	WHITE CABBAGE	CAULIFLOWER
MONCLANO	CRISPUS	CORDESA	KILASTOR	CLAPTON
NPI COMING	CRYPTUS	CORDOBA	KILAZOL	CLARIFY
		NEW CORRIPA	KILACEES	CLARINA
		NEW CORADI		CLEOZIL





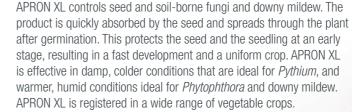
What is FARMORE® Technology?

FarMore® Technology is the first comprehensive combination of separately-registered seed protection products, proprietary application technologies and dedicated seed treatment services that maximise vegetable production value by enhancing performance and quality.



What is APRON® XL and what does it do?

APRON XL is a modern systemic seed treatment fungicide. APRON XL is specially developed for seed treatment and contains 35% mefenoxam, the biologically most active isomer of the compound metalaxyl.





What is MAXIM® 480FS and what does it do?

MAXIM 480FS is a special seed treatment that is effective against a broad spectrum of seed and soil-borne diseases in a wide range of vegetable crops. Active ingredient fludioxonil is a contact fungicide that penetrates the seed surface and coats the seed, providing long-lasting protection around the young seedling and combating diseases such as *Alternaria*, *Phoma* and *Fusarium*. It has excellent activity at low rates, has a positive effect on germination capacity and plant vigour, and is suitable as a mixing partner with other seed treatments.



DISCOVER OUR BRUSSELS SPROUTS VARIETIES



Harry Twinberrow Technical Crop Advisor (Brussels Sprouts & Kale)

T: 07385 466591 **E:** harry.twinberrow@syngenta.com "Syngenta's portfolio of Brussels sprout varieties is so varied there are multiple options for each segment. There are varieties with disease resistances and traits favourable for different grower needs and matching these is part of what makes the job so enjoyable. As always, there is lots of work going into product development and there are lots of exciting new varieties coming through the pipeline, including a focus on mechanical trimming".



Abacus

- Excellent standing ability
- Combines earliness with uniform cylindrical button development
- Suitable for Feb sowings and autumn sown over-wintered

Sensitive to bolting and should not be planted before 15th Apr



Normal programme

FEB	MAR	APR	MAY	JUN	JUL
AUG	SEP	OCT	NOV	DEC	JAN



Hey Melis

 Mid Nov - Dec variety 	 Mild taste
• Tall stem	 Very easy deleafing
 High number of sprouts 	 Very nice button presentation
 Sturdy plants 	 Bolting tolerance
 Cylindrical setting 	Strong plant vigour





Gladius

- Early mid-season variety with the possibility to plan a second planting
- Harvests from the end of Sep to mid Nov
- Sturdy plants, very good cylindrical setting
- Easy deleafing

Sturdy plant

· Dark, smooth buttons with a mild taste

Normal programme			Key: OPlant Harves				
FEB	MAR	APR	MAY	JUN	JUL		
000000000000000000000000000000000000000							
AUG	SEP	0CT	NOV	DEC	JAN		
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Marcantus

Very good, long shelf life

- High yielding variety Good de-leafing High number of sprouts on the stem
 Very good field standing ability
- **Key:** Plant Harvest **Normal programme**







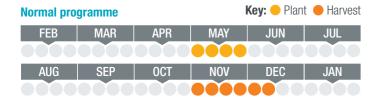
Our Brussels Sprouts Varieties



Martinus

Petrus

- High yielding variety Dark sprouts Nov - early Dec variety Large sized buttons
- Strong tolerance against light leaf spot







SGB1714 Nimbus

Profitus

Very good deleafing

Suitable for stalks

 Good field standing ability · Easy growing variety Very easy deleafing Nice round dense sprout High yield potential Harvest Nov / beginning Dec

Normal pro	gramme			Key: 🛑 Plan	t Harvest		
FEB	MAR	APR	MAY	JUN	JUL		
000000000000000000000000000000000000000							
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- Suitable for late harvest in the mid winter period of Jan and Feb with
- · Produces a uniform high quality button
- Excellent variety for Scotland and Lincolnshire

excellent frost tolerance and holding ability

Attractive dark green button

Normal programme				Key: OPlant	t Harvest	
APR	MAY	JUN	JUL	AUG	SEP	
000000000000000000000000000000000000000						
OCT	NOV	DEC	JAN	FEB	MAR	



- Sturdy plant
- · High specific weight
- Very healthy variety
- High number of sprouts on the stem
- · Fertilising advice: Less nitrogen required at the start

Sensitive to bolting and should not be planted before 15th May

Normal pro	gramme		I	Key: O Plan	t Harvest
FEB	MAR	APR	MAY	JUN	JUL
0000	0000	0000		0000	0000
AUG	SEP	OCT	NOV	DEC	JAN



Redarling

- Red coloured sprout
- New taste experience
- For fresh and processing
- Mild and nutty flavour

Normal programme			I	Key: 🛑 Plan	t Harvest
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000000000000000000000000000000000000000					
AUG	SEP	OCT	NOV	DEC	JAN
0000	0000	0000	0000		



SGB1698 Scorpius

- Sturdy plant · High specific weight
- Strong on light leaf spot Very healthy variety
- Suitable for stalks No risk of bolting
- High number of sprouts on the stem

Normal programme				Key: — Plan	t Harvest
FEB	MAR	APR	MAY	JUN	JUL
0000	0000	0000	0000	0000	0000
AUG	SEP	OCT	NOV	DEC	JAN
0000	0000	0000	0000	0000	0000



Splendus

- Very late segment Feb into Mar Follows on from Petrus
- Sturdy, high yielding
- Dark green buttons
- Well spaced buttons with excellent leaf drop
- Reduces the need for expensive imports
- Very strong field standing ability

Normal programme				Key: OPlan	t Harves
APR	MAY	JUN	JUL	AUG	SEP
OCT	NOV	DEC	JAN	FEB	MAR
0000	0000	0000	0000	0000	0000

"There is no brassica crop standing longer in the field than Brussels sprouts. Syngenta provides varieties with strong field standing ability, which ensures a high yielding crop for outstanding quality for our customers."



MEET THE EXPERT

Hans Duin Product Development Specialist



Our Brussels Sprouts Varieties

BRILLIANT BRUSSELS SPROUTS

- Our new line of varieties which include TRIMSTAR and TRIMTOP are perfectly suited for mechanical and conventional trimming
- Perfect calibration for both trimming and traditional fresh market
- High number of sprouts on stem, high yield
- Easy growing, sturdy and healthy plants
- · Excellent field standing ability and shelf life

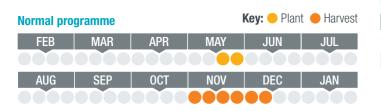




sgB1536 **Trimstar**

- Variety specifically for mechanical trimming
- High number of sprouts on the stem
- Easy growing variety
- Very good field standing ability
- Very good long shelf life after harvest

Sensitive to bolting and should not be planted before 10th May





SGB1608 Trimtop

*Clubroot resistant

- Variety specifically for mechanical trimming
- Very even on the stalk
- Sturdy plant
- · Very good, long shelf life after harvest
- · Very good field standing ability

Normal pro	gramme		Key: O Plant O Harv		
FEB	MAR	APR	MAY	JUN	JUL
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AUG	SEP	0CT	NOV	DEC	JAN



Brussels sprouts fertiliser advice & variety fit overview

This table is general guidance and will vary depending on environmental conditions. Please ask our technical sales representatives or your agronomist for more detail.

VARIETY	HEIGHT	STURDINESS	FERTILISER	VARIETY	HEIGHT	STURDINESS	FERTILISER	
ABACUS	0'0'0'	1/1		COBELIUS	0'0'			Vov
MARCANTUS	0/0/0/	1/1		PROFITUS	0'0'0'	1/1		Key Height of sprout:
CRISPUS	0'0'	1 /1		SCORPIUS	0/0/0/	471471		1 = Short
GLADIUS	0'0'	471471		AURELIUS	0/0/	474747	666	3 = Tall Sturdiness:
GIGANTUS	0'0'0'	**		CRYPTUS	0'0'	47474	666	Sturdiness: 1 = Less sturdy
MARTINUS	0'0'	474747		PLATINUS	0/0/	1711/11	666	3 = Very sturdy Fertiliser:
TRIMTOP	0'0'	171/17		PETRUS	0'0'	1711/11		1 = 175-220 kgN/ha
NIMBUS	0/0/0/	171/1/1		ALBARUS	0,			2 = 221-280 kgN/ha 3 = 281-300 kgN/ha
HEY MELIS	0/0/	11111		BATAVUS	0'0'0'	1/1/1/11		Please refer to RB209
TRIMSTAR	0/0/0/	11111		SPLENDUS	0/			when calculating fertiliser rates.
THAMUS	O ^x	171/1/1						

									Key: 🛑 Plai	nt Harvest
	APR	MAY	AUG	SEP	0CT	NOV	DEC	JAN	FEB	MAR
ABACUS early					0000	0000	0000	0000	0000	0000
ABACUS normal										
MARCANTUS					0000					
CRISPUS* early										
CRISPUS* normal					0000					
GLADIUS					0000					
GIGANTUS										
MARTINUS						0000				
NIMBUS						0000				
HEY MELIS										
TRIMTOP						0000				
TRIMSTAR						0000				
THAMUS										
COBELIUS						0000	0000			
PROFITUS										
SCORPIUS	0000						0000			
AURELIUS	0000									
CRYPTUS*	0000									
LEWITUS	0000									
PLATINUS	0000									
PETRUS	0000									
ALBARUS	0000							0000		
BATAVUS	0000							0000		
SPLENDUS	0000									
REDARLING							0000			

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Two levels of resistance are defined:

High/standard resistance (HR*)

Plant varieties that highly restrict the growth and development of the specified pest or pathogen under normal pest or pathogen pressure when compared to susceptible varieties. These plant varieties may, however, exhibit some symptoms or damage under heavy pest or pathogen pressure.

Moderate/intermediate resistance (IR*)

Plant varieties that restrict the growth and development of the specified pest or pathogen, but may exhibit a greater range of symptoms or damage compared to high/standard resistant varieties. Moderately/intermediately resistant plant varieties will still show less severe symptoms or damage than susceptible plant varieties when grown under similar environmental conditions and/or pest or pathogen pressure. Susceptibility is the inability of a plant variety to restrict the growth and development of a specified pest or pathogen.

The Vegetable Section of ISF recommends, as it pertains to biotic stress, that its members use the terms immunity, high/standard or moderate/intermediate resistance and susceptibility and to avoid the term tolerance in communications with their customers.

Tolerance is the ability of a plant variety to endure abiotic stress without serious consequences for growth, appearance and yield. Vegetable companies will continue to use tolerance for abiotic stress.



Notes



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Syngenta Seeds Vegetables has exercised reasonable care and skill in compiling this brochure

All resistances quoted refer only to strains of races or pathotypes indicated on the varieties. Other pathogen races or pest biotypes capable of overcoming the resistance may exist or emerge.

Syngenta Seeds Vegetables uses highly elaborate analytical methods to verify specific variety resistances. Specificity of pests or pathogens may vary over time and depends on environmental factors.

In order to maximise the efficiency of a resistance, it is highly recommended to mix different ways of control such as growing conditions, plant protection products and genetic resistance as part of an integrated crop management.

The Syngenta resistance against Clubroot is effective against the predominant races Pb:0 and Pb:1 and against the less frequent race Pb:3 but not against the infrequent race Pb:2 that may occur in some fields.

Genetic resistance is only one of the tools to manage Clubroot. Cultural measures such as liming, use of fertilisers with high percentage of calcium, proper drainage, good crop hygiene management are several important components of an integrated approach to manage the disease.

We always recommend to first execute small variety trials before starting commercial production of a new variety.

Spinach leaf spots can be caused by many different fungus; i.e. Peronospora effusa, Stemphylium spp., Cladosporium variabile, Colletotrichum dematium which are not always monitored by EU authorities.

Syngenta identified high resistance (HR) in our genetic to at least one Stemphylium specie that we identified & isolated from many leafspot samples over the last few years & in different EU countries.

The latest International Seed Federation (I.S.F.) terms and definitions describing the reaction of plants to pests and pathogens and to abiotic stresses for the vegetable seed industry are hereby incorporated by reference. The meaning of such terms in any related statement made by Syngenta shall be as provided by the I.S.F. If Syngenta adopts a proper term to define the reaction of plants to pests and pathogens and to abiotic stresses, Syngenta shall inform the customers of such term and of its definition.

All data in this brochure are intended for general guidance only and the user should apply it in accordance with their own knowledge and experience of local conditions. In case of doubt we recommend that a small scale production trail be carried out to determine how local conditions may affect the variety.

 $\label{thm:connection} \textbf{Syngenta Seeds Vegetables cannot accept any liability in connection with this brochure.}$