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Syngenta Vegetable Seeds

DISCOVER OUR VEGETABLE VARIETIES



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Contents

| | |
|---------------------|---|
| Introduction | 4 |
| Meet the Team | 5 |
| Clubroot Solutions | 6 |
| FarMore® Technology | 9 |

Discover our Varieties

| | |
|------------------------|----|
| Broccoli | 10 |
| Brussels Sprouts | 14 |
| Borecole | 20 |
| Cabbage | 21 |
| Cauliflower | 29 |
| Wholehead Lettuce | 39 |
| Babyleaf | 48 |
| Onions | 57 |
| Squash | 60 |
| Table of Abbreviations | 63 |
| Levels of Resistance | 64 |
| Notes | 66 |

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
(Plasmodiophora brassicae) is a serious disease affecting Brassica. An estimated 10% of the total cultured area worldwide contracts the disease.



Syngenta has invested in years of breeding to offer a high level of resistance in their Brassica varieties.

Syngenta has pioneered robust and reliable clubroot resistance in a range of key brassica varieties since 2005



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 <small>COMING SOON</small> | CRYPTUS | CORDOBA | KILAZOL | CLARIFY |
| | | <small>NEW</small> CORRIPA | KILACEES | CLARINA |
| | | <small>NEW</small> CORADI | | CLEOZIL |

LOSSES FROM CLUBROOT

Growing cost per ha

£3,960*

+ loss of income per ha

£5,720

*Excludes rent.
Source: John Nix 2022



Syngenta continues to develop a new generation of clubroot resistant varieties providing protection against an even wider range of clubroot strains.

Clubroot resistant varieties reduce the risk of plant loss and enable growers to manage cropping areas with known levels of infection.



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.

APRON XL controls seed and soil-borne fungi and downy mildew. The product is quickly absorbed by the seed and spreads through the plant after germination. This protects the seed and the seedling at an early stage, resulting in a fast development and a uniform crop. APRON XL is effective in damp, colder conditions that are ideal for *Pythium*, and warmer, humid conditions ideal for *Phytophthora* and downy mildew. APRON XL is registered in a wide range of vegetable crops.



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 SQUASH VARIETIES

“We have an absolutely fantastic squash portfolio, our strong range of virus resistances in courgette varieties gives security to the growers along with high yields and quality fruit. The addition of pumpkins is an exciting development which has further strengthened our range in squash.”



MEET THE EXPERT

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Our Courgette Varieties



Milos
 High quality fruit and savings in harvesting time

- High commercial yield, stable production and flexibility of use
- Uniform fruits – quicker to pack
- Upright, open plants, long fruit stalks; easier harvesting, which reduces harvesting time and hence production costs
- Well balanced plants, good air flow around foliage, with resistance to the 3 viruses and powdery mildew (IR)
- Semi-erect and open canopy, with short internodes
- High quality medium dark green fruit, uniform and bright
- Ease of harvest is a key characteristic of the plant and the fruit
- Reliable in all open field situations by rusticity, with good resistance and production stability

RESISTANCES: IR: CMV / ZYMV / WMV / Gc-PX



Zefiros
 The first Syngenta variety with a 4 viruses intermediate resistance package

- High level of IR to 4 virus = choose the best security for your production
- Really high yield potential = to get the best quantity out of your field and maximise your turnover
- A nice fruit quality with dark green colour and straight shape = to fit your customer demand
- Open plant habit and erect plant stand = limit your harvesting cost by being more efficient in collecting the fruits
- Well balanced plant vigour, to support with an appropriate fertiliser programme
- Mainly for summer harvest

RESISTANCES: IR: CMV / ZYMV / WMV / PRSV / Gc-PX



Courgette variety fit overview

| VARIETY | RESISTANCES | FRUIT (L/D) | FRUIT COLOUR | USE, DEPENDING ON VIRUS PRESSURE |
|--------------|---------------------------------|------------------|--------------|---|
| BLACK FOREST | | Long Cylindrical | Dark Green | No virus pressure. Perfect for hobby market |
| CRONOS | ZYMV / WMV / Gc-PX | Cylindrical | Dark Green | Low to medium virus pressure |
| MILOS | CMV / ZYMV / WMV / Gc-PX | Cylindrical | Dark Green | Strong virus pressure |
| NAXOS | CMV / ZYMV / WMV / Gc-PX | Cylindrical | Dark Green | Strong to very strong virus pressure |
| PATMOS | CMV / ZYMV / WMV / Gc-PX | Cylindrical | Dark Green | Strong to very strong virus pressure |
| RHODOS | CMV / ZYMV / WMV / Gc-PX | Cylindrical | Dark Green | Strong virus pressure |
| SYROS | CMV / ZYMV / WMV / Gc-PX | Cylindrical | Dark Green | Strong to very strong virus pressure |
| ZEFIROS | CMV / ZYMV / WMV / PRSV / Gc-PX | Cylindrical | Dark Green | Strong to very strong virus pressure |

Our Pumpkin Varieties



Early Abundance

- 90 growing days
- Small round fruit
- Dark orange colour
- Weight 4-6 lbs

RESISTANCES: IR: Px



Early King

- 90 growing days
- Round, slightly tall fruit
- Deep orange colour
- Very large fruit
- Weight 22-28 lbs

RESISTANCES: IR: Px



Early Prince

- 90 growing days
- Round, slightly tall fruit
- Dark orange colour
- Medium sized fruit
- Weight 13-15 lbs

RESISTANCES: IR: Px



Table of Abbreviations

Brassica spp

| SCIENTIFIC NAME PATHOGEN ISF | COMMON NAME | ABBREVIATION | RACES/STRAINS |
|--|---------------|--------------|---------------|
| <i>Xanthomonas campestris pv. campestris</i> | Xanthomonas | Xcc | |
| <i>Albugo candida</i> | White blister | Ac | |
| <i>Fusarium oxysporum f.sp. conglutinans</i> | Fusarium | Foc | 1 |
| <i>Mycosphaerella brassicicola</i> | Ringspot | Mb | |
| <i>Peronospora parasitica</i> | Downy mildew | Pb | |
| <i>Plasmidiophora brassicae</i> | Clubroot | Pb | |

Lettuce

| SCIENTIFIC NAME PATHOGEN ISF | COMMON NAME | ABBREVIATION | RACES/STRAINS |
|--|--------------------------|--------------|---------------|
| <i>Bremia lactucae</i> | Downy mildew | Bl | 16-36 |
| <i>Fusarium oxysporum f.sp. Lactucae</i> | Fusarium | Fol | 2 |
| <i>Nasonovia ribisnigri</i> | Currant-lettuce aphid | Nr | 0 |
| <i>Lettuce mosaic virus</i> | Lettuce mosaic virus | LMV | 1 |
| <i>Tomato Bushy Stunt Virus</i> | Tomato Bushy Stunt Virus | TBSV | |

Spinach

| SCIENTIFIC NAME PATHOGEN ISF | COMMON NAME | ABBREVIATION | RACES/STRAINS |
|---|-------------|--------------|---------------|
| <i>Peronospora farinosa f.sp. spinaciae</i> | Mildew | Pfs | 1-17 |

Squash

| SCIENTIFIC NAME PATHOGEN ISF | ABBREVIATION |
|--|--------------|
| <i>Podosphaera xanthii (ex Sphaerotheca fuliginea)</i> | Px |
| <i>Cucumber mosaic virus</i> | CMV |
| <i>Papaya ringspot virus (ex WMV-I)</i> | PRSV |
| <i>Squash Leaf Curl Virus</i> | SLCV |
| <i>Watermelon mosaic virus (ex WMV-II)</i> | WMV |
| <i>Zucchini yellow mosaic virus</i> | ZYMV |



Levels of Resistance

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.



Fungal disease – what's it worth?
1% reduction in pack out
£90/ha*
*Excludes grading and transport. Approximate figures based on Brussels sprouts output – 20 t/ha @ £450/t.

Growers can rely on good levels of resistance against *Mycosphaerella* (Ringspot) in our varieties and we go further in our ambition to deliver solutions.

We introduced the first Savoy cabbage varieties to the market to combine resistance against *Mycosphaerella*, white blister and clubroot. With unpredictable seasons, this combined resistance against several fungal diseases in one variety helps assure quality whatever the season.

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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 trial be carried out to determine how local conditions may affect the variety.

Syngenta Seeds Vegetables cannot accept any liability in connection with this brochure.