

# Dutch seed open days – 2018

With the loss of independent organic variety trials in the UK since Defra stopped funding the NIAB/Garden Organic trials in 2006, it has become more difficult to find real information about how varieties might perform. UK seed companies no longer have organic demonstration grounds and growers have to head to the Netherlands to Bejo, Rijk Zwaan or Vitalis to see varieties under organic conditions in the flesh. Much of the attention of these breeding companies is on hybrids and the quality, vigour and uniformity of many of the varieties, together with traits such as disease resistance cannot be denied. The focus is on varieties suitable for large-scale production for multiple retailers. In September I was able to visit the demo plots of both Bejo, with many thanks to Elsoms Seeds, and Vitalis.

## Bejo – Warmenhuizen

The Bejo Open Days are impressive - great hospitality and impressive trial/demo grounds., with growers visiting from across Europe and the World. They also take organic seed seriously and the first field you see on arriving on the site is the organic field. With the heat of the summer, and the Netherlands was even hotter and drier than the UK, it must have been a challenge to produce such a good display.



Bram Weijland, the Organic Affairs Coordinator at Bejo said: “In general we are expanding our programme – we have 140 varieties available as organic. This year we’ve expanded with another 20 put into production, but not yet available. With the growth of the organic market we have to find more varieties for more countries, more areas, different markets, so we need more varieties. That puts more pressure on seed production. Production of organic seed is a priority. Growth last year of 12%, last 5-6 years been growing at 15% and is a substantial part of Bejo’s turnover.”

“Before, we used to have only a small assortment to cover the market with the least possible number of varieties. Now we have to cover a bigger market elsewhere as well. The US is growing, France is growing. Some of this is because of compulsory organic seed use. The main force is the market demanding more organic context. The German market is growing and looking for more German-grown production, which affects Dutch organic growers growing primarily for export. They look for additional certification – biodynamic, demeter, so that they can cater for the export market, which is becoming more difficult, more demanding. In general, we still see a healthy market, but it is slowly maturing. There are

huge opportunities for Bejo to grow in that market. Though we do quite well in brassicas and onions, there is a gap to be filled in organic carrot seeds. We are investing in the organic market, new machinery and continuous development, learning from the conventional side of the business.”

“Breeding for organic as opposed to organic breeding. Our approach is to start off with the biggest number of parent lines conventionally and select from those for organic. Ten years ago resistance breeding for downy mildew in lettuce was primarily for organic, now why not also for conventional? We find it with all diseases. Breeding Septoria resistance in celery, comes from conventional, but it is of course highly desirable in organic. This combination works well side-by-side. We are much in favour of hybrids, as we believe that having the right traits, the right combinations for your customers is of major importance.”

“15 years ago the UK was up in the top 4 (organic seed sales), but it stopped, others carried on. In the UK the veg market is dominated by the supermarkets. I’m sure in the future the supermarkets will re-invent organics. Conventional vegetable production is making great strides, organic has to make the next steps.”

## Bejo organic fields



*Redlander F1 (left) - the first red onion with a high resistance to downy mildew (Peronospora destructor). This follows, 10 years on from the yellow Hylander F1, the first onion with a high degree of mildew-resistance.*

Bejo has had its own 5ha organic demonstration plot since 2004. The field is on a four-year rotation. Ryegrass/clover => Brassicas => Alliums => Carrots/beets. The base fertiliser is 20t/ha of compost and 400kg/ha Sulphate of potash. They top dress with bonemeal (10%N, Lucerne pellet (4%N) and feather meal (10%N) as required, plus some foliar feeding.

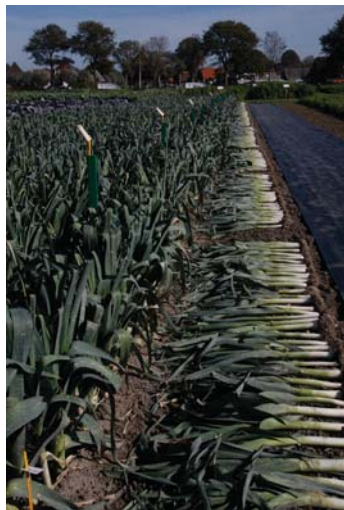
Keely Watson, organic crop manager at Elsoms said: “Traditionally, the organic field only had varieties grown from organic seed,

but now they include varieties, marked as NCT (non-chemically treated), which are used for comparative purposes. These are varieties which they think will be suitable for organic production.”

Bejo have added lettuce to their organic assortment, including high performing varieties from their conventional range. These varieties with strong levels of resistance include; Iceberg Rumours, a medium-sized Iceberg for the fresh market, the compact Batavia Agribel for summer use with very dense and flexible leaves and the large Butterhead Antedis for spring and autumn use.



Keely Watson amongst the kale



Photos: Phil Sumption

Defender (left), is a new variety of late leek, which holds well. In development as organic seed. Right - the 12 leek plots on display.

## Protecting crops from carrot fly

A product (Psila-Protect) has been developed in the Netherlands using onion oil granules which is claiming to protect carrot and celeriac crops from carrot fly.

The carrot fly (*Psila rosae*) is attracted by the smell of plants in the parsley family (*Apiaceae*) and can cause damage to crops of celeriac, parsnip, celery, etc. The smell of these plants can be masked by strong-smelling granules containing onion oil. Because of the messy nature of onion oil Psila-Protect developed the granules with a plastic ball carrier which means the product can be used in fields using dispensers so that the product does not come into contact with the crop itself.

Trials designed to test the effectiveness of the granules were conducted over a four-year period at Wageningen University. The aromatic oil was distributed around the plots with dispensers on poles. It transpired that the plants nearest the onion oil poles suffered much less damage than those plants further away. This generally

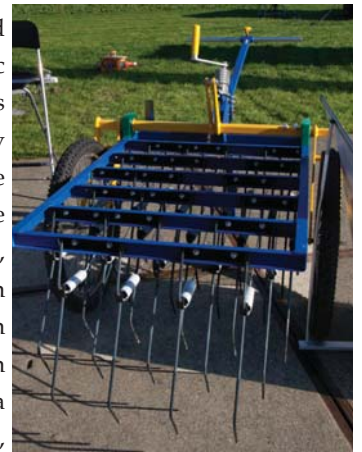


resulted in reducing the damage by half. Trials in Denmark in 2015 by Gartner/Radgivningen also confirmed its efficacy.

They are now beyond the test phase and the product is approved for use. Many growers in the Netherlands are already using it to provide protection from the time of sowing/planting to harvest. Four dispensers are needed per ha, which costs in the region of €48/ha. They should be put up once in the season, before the first flight. There are some larger growers in the UK (big companies) trying the product and they are also looking out for UK distributors.

## Treffler harrow

The Treffler precision tined harrow has been on the organic market for 15 years. It enables you to go in at a really early stage in the crop, apply the pressure you want and with tine suspension the tine pressure, regardless of where they are on even a potato ridge or in uneven soil conditions, will remain constant. You can go in at a 2-leaf stage and gently harrow, knocking out the tiny weeds as



or before they appear (white thread stage). As the crop grows you can apply more pressure and also adjust the depth. Hard metal tines can give up to seven times more longevity. Tractor mounted models come in working widths of 1.70 m to 30 m and can be front or rear-mounted. Hydraulic tine adjustment is available which can regulate the tine pressure while driving, to save time having to stop and reset the machine, useful when ground conditions are changing while a field is being worked.

There is a smaller hand-drawn variation for greenhouses and smaller farmers, which operates on the same principles. This costs €1850. A motor can also be attached to it if required. It can be adjusted to be pulled by one (strong) person on one side, or by two people, one on either side. The wheels are also adjustable so it can go across 2 beds. The take-up in the UK of Treffler harrows has been less than in other countries – Denmark and Canada, Belgium too are booming – every organic farm has one of these. Man@Machine who distribute them will supply directly to the UK and would welcome opportunities to display the machine at events etc.

## Rotosark

This inter-row weeding machine from Oliver in Italy incorporates three machines, a mechanical weeder, aerator and filling machine to work directly on the transplant row, without damaging the plants, uprooting the weeds.





# Vitalis Organic Seeds - creating an organic world

Tucked away in a quiet Dutch backwater, Vitalis seems a different world to Bejo. They started breeding and producing organic seeds of vegetable varieties that are suitable for organic growers, 24 years ago, with a strong emphasis on resistance against pests and diseases. They now have more than 400 varieties of 25 crops, concentrating on lettuce, peppers, tomatoes, cucumbers, pumpkins, spinach, radish, squash, leeks, endive, onions and herbs. Since 1998 they have been a subsidiary of Dutch seed company Enza Zaden, who specialise in the breeding of vegetable varieties. Enza use classic and modern breeding techniques, for example DNA marker analysis. Vitalis also made a commitment not to sell CMS hybrids created by protoplast fusion.

## Squash

"Butternut squash is an important product for us" said Maarten Vrensen, sales manager at Vitalis. They take about a month longer than the red kuri type squashes, so in the Netherlands they normally transplant at the beginning of May under tunnels. The breeding focus is on selecting butternuts with shorter growing periods. Tiana F1 has resistance to Zucchini Yellow Mosaic virus, Jacqueline F1 to powdery mildew and Havana F1 to both. Powdery mildew resistance means more sugars and starches in the fruits and improved storeability.

Improvements have been made to the old favourite open-pollinated Uchiki Kuri squash "where it all started", which typically yields 18-22 t/ha and stores to mid-January. Orange Summer F1 was the first hybrid red kuri type. It has good fruit quality with a higher brix (sweetness) and dry matter. It yields 25-30 t/ha but stores to mid-December, though with good soils, good conditions and early harvest it can store longer. Later harvest tends to mean lower storeability. Bright Summer F1 can yield 30-40 t/ha with good soil and water conditions and even higher if multiple harvests are taken. It produces a lot of fruits in the smaller 500-800g category, which can be very good for box schemes. Kaori Kuri F1 is even sweeter and has been selected for longer storage. Both Bright Summer F1 and Kaori Kuri F1 have intermediate resistances to viruses (ZYMV/WMV/PRSV).

## Salad crops

We started at the curled endive (Frisée). There are some attractive looking varieties but it is a risky product to grow, with risk of necrosis. Martin said he would advise growers to just grow 'normal endive'. Of the flat-leaved endives they have the market leader Nuance, which is an old variety, strongest on tipburn resistance. It can, however be susceptible to bolting, but growers often cut it earlier to account for this. Seance is a summer variety that is strongest on bolting, producing good volumes. Eliance is a new variety stronger on bolting than Nuance but not as strong as Seance.

The green Batavian lettuce Grazer Krauthauptel 2 is over 200 years old, but has very good horizontal Bremia resistance. It is very popular in Austria with billboards along the roads announcing its arrival, when in season. They are bringing it into their breeding programmes.



Grazer Krauthauptel 2

Martin commented that big Romaines/Cos can be very susceptible to internal tipburn and he would advise growers to grow mini-cos or gem types instead. Little gems are a key product for the UK market for Vitalis. Maureen has been a leading variety for them for a long time, but Martin said "If I was an organic grower I would move towards Carterham. It has aphid (Nasanova) resistance and full mildew (Bremia) resistance." For red Cos Moonred has a good colour, volume and resistance to most mildew strains (not 27). Vitalis are the leading company on mini Cos and they are gaining in popularity. Compared to little gem you get more product (grams) with the same amount of work. Also, they're not susceptible to internal tipburn and they have a long harvest window - you can just cut higher with the knife and peel back. In Germany they often grow under nets to keep birds and deer off, so they need smaller varieties as the lettuce grows longer under the net. For the first and last planting Ximenes is the best choice. Xalbadora, Xamena and Xiomara are suitable for the whole season in the UK.



Carterham



Maarten Vrensen with Moonred Cos

Keeping up with mildew is a big challenge for lettuce breeders. More varieties are being brought through of all types to keep pace with new mildew strains. "We are proactive, rather than reactive in our breeding programmes, we are looking for wild sources of mildew resistance all the time," Martin said. Breeding oakleaf lettuce can be challenging as "Bremia resistance breaks down very quickly." They are introducing the red oakleaf Alonix as a major variety for next year, with a good colour and good Bremia resistance. Admir is also new in green oakleaf, with nice uniform head and good healthy bottom which doesn't need so much trimming.

The main focus in butterhead for 2019 will be the Aferdita (E01D.30345), a new variety that is filling slowly and because of that has long harvesting window.

Photos: Phil Sumption

Iceberg lettuce is still important for Vitalis. "Go into a health food shop in the Netherlands and they will have 2 lettuce product lines - Iceberg and mini Cos." Etude is an old variety suitable for first plantings. It deals with extreme temperatures really well. In the Netherlands we can have 10 C or 25C in April." Their two main commercial varieties are Elmundo, which is a mid-size variety for fertile soils and Eduardo, which is a bit bigger for late spring, summer and autumn. It is strong against internal tipburn and was their best variety in the field this summer.

Eazyleaf is another area of growth for Vitalis. It produces a lot of leaves of the same size that can be cut at the same time for processing. they can have double the shelf-life of baby leaf and almost double the yield. They can be grown as whole head or at a higher density for 'mowing'. There is an increased interest from the UK in Eazyleaf because of potential labour savings post-Brexit. There is still demand for baby leaf, however and they have both green and red types, the latter which need to be sown two weeks ahead of the green as they are slower growing.



*Eazyleaf Ezrilla*

## Leeks

Vitalis have a range of leek varieties to cover the season, including 3 open-pollinated varieties (Axima, Tadorna and Atlanta). Of the hybrids, Chinook F1 is sown in greenhouses in December for planting in February/March for June harvest. Obviously strong on bolting resistance for that period it has a long shank and is high yielding. Their major new introduction is Comanche F1, for summer, which has long shank and is a good upright variety, that can also be direct-drilled if you are set up for it. Cherokee F1 is suitable for the end of September to the end of December, with good yields and easy to peel. Navajo F1 is a reasonable winter leek for January to April harvest.



*Comanche F1*

## Courgettes

Vitalis had to re-plant their courgettes as the first crop had aphid problems. From an early August sowing and mid-August planting, they were all looking really strong and mildew-free at the end of September. Dunja F1 is their leading variety with good virus and powdery mildew resistance, but new varieties are being developed including a spineless variety that has an open habit, making it quick and pleasant to pick.



*The demo field at Vitalis*

## Other crops

Enza have a small non-CMS cauliflower breeding programme. Their stand-out variety is Mardi F1 which is a summer cauliflower maturing in 78-80 days.

Radish can be a challenge to grow organically for seed. Their leading variety is Celesta F1 which is strong against mildew and cracking and works everywhere.

Vitalis have one Kohlrabi variety - a non CMS hybrid Vikora F1, which is very strong against mildew.

Preludio F1 is their main variety of fennel, with a nice round shape, strong against brown leaf edges, strong against bolting and maturing in 65-75 days.

*Phil Sumption*

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