

Welsh Vegetable Project

January - December 2010



Cronfa Amaethyddol Ewrop ar gyfer Datblygu
Gwledig; Ewrop yn Buddsoddi
mewn Ardaloedd Gwledig
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Llywodraeth Cynulliad Cymru
Welsh Assembly Government

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Ariennir y prosiect hwn yn rhannol trwy Gynllun Datblygu Gwledig Cymru 2007 - 2013 sy'n cael ei ariannu gan yr Undeb Ewropeaidd a Llywodraeth Cynulliad Cymru

Introduction

The aims of the project were to seek to find and trial Welsh Heritage Vegetable varieties within Wales that are not available on the National List and to trial them amongst a variety of growers in Powys.

The project aimed to seek out varieties that may be on the verge of disappearing, or new varieties bred in Wales and to raise awareness of the importance of vegetable diversity by encouraging seed saving. The project was further motivated by a need to reduce food miles, and to encourage food growing using varieties that are suitable for the growing conditions of the local area in the light of climate change and the growing need for food security.

Context

In a world with a rapidly changing climate, where biodiversity is on the decline and where our lands are intensively farmed, mankind needs to rethink the way it feeds itself in order to provide a more locally based diverse resilient food base that is not dependent on fossil fuels.

Background

For the past 11,000 years or so, humans have been saving their own seeds. People grew food, and then saved seeds from the plants that were most successful and that they liked best. By doing this, every gardener was building on the achievement of previous generations and refining their own variety, selecting ones that did well in their particular environmental conditions over time.

Each gardener would be growing a slightly different strain of vegetables to their neighbour; and the number of different strains of vegetables was huge. Because their seed was open-pollinated seed, every seed was a little different, and was therefore widely adapted, and also adaptable - it could cope with all sorts of change.

So what happens now? In the last 40 years, almost all of these locally adapted strains have been lost. People rely on others to grow their food and gardeners have forgotten or no longer wish to save their own seed.

A reliance on commercially produced seed has developed, and with this, a narrowing down of diversity. With the introduction of the 'Seed Act' in 1974, it has become illegal to sell seed unless it has been assessed and registered on the 'National List'. For this reason varieties have to have been shown to be 'stable, uniform and distinct'. No more 'naturally' shaped

vegetables that mature at different times; everything has to be the uniform, which is not necessarily ideal for a home grower who may want produce to ripen over a longer growing period. With this registration process there was also a possible additional cost, and this naturally led to more varieties being lost.

Commercially produced seed is grown for the mass market with storage and transportation in mind; it is not grown for local microclimates or soil conditions. Many commercial seeds are hybrids, where every seed is identical, and seed saving from year to year does not produce 'true' good plants the following year. Gardeners are tied to buying their seeds year in year out and diversity is limited to what commercial producers can produce. Commercial seed production is big business, with seeds grown in vast areas of essentially monoculture land using chemicals and big farm machinery, both of which are reliant on fossil fuels to produce and run them.

The project outline

Part 1 - The seed search

A few years ago, the Heritage Seed Library conducted a National search for seeds, but they had very little donated from Wales. The Heritage Seed Library aims to conserve and make available vegetable varieties that are not widely available. The library maintains a collection of mainly European varieties. Over the decades many varieties have been dropped from popular seed catalogues and their collection contains many of these, but also a large number of family heirloom varieties that have never appeared in a catalogue.

We wanted to resurrect the search within Wales and see if any new varieties turned up.

We started by visiting the Heritage Seed library in Coventry to trawl through their files. We found one variety that had been donated to them called the Llanover Pea.

We sent out a press release to hundreds of places and were interviewed by several journalists who subsequently printed articles about the search. This included the RHS Garden Magazine, local papers and a live radio broadcast with Jamie and Louise! See Appendix 1 for media coverage.

The project also attracted attention from S4C's 'Living in the garden programme. 'Cwm - ni da'. They sent their TV presenter down to our annual 'Seedling Sunday' to do an article and raise awareness of seed saving and our Vegetable project. Their presenter Russell then grew the seeds we uncovered on the gardening programme.

The Seeds we discovered

1. The Llanover pea



We obtained some of these seeds that had been donated in from the Heritage Seed Library. A lady called Naomi donated most of her remaining seed to the Heritage Seed library back in 2003. She wrote of the pea “It produces large peas which are incredibly sweet. It’s difficult to resist eating them all, hence my worry about keeping the strain going.”

She wrote “Their story was romantic”, they were grown for many years on the Llanover Estate, where they’d been brought by a German prisoner of war who had returned to marry a Welsh girl after the first world war.

Some of the seeds were given to a keen gardener who got Naomi started with gardening. He continued to grow them for many years in both Monmouth and then Torquay, but he lost them during the 1990’s. Luckily Naomi managed to get them back to reasonable numbers before donating the remainder of her seeds to The Heritage Seed Library in Coventry for safe keeping.

2. The Melbourne Mini

The Melbourne Mini was donated to us by a local man who has grown and saved the seed for 30 years since he was given a handful by a fellow allotment holder. He grew them originally down in Sussex, then brought them to Wales where he has been saving them ever since in Penegoes near Machynlleth.

Although the variety did not originate in Wales, it has thrived here and will continue to adapt to local conditions while the seed is grown and saved. They bear white and cream flowers and short tender pods of green beans.



3. The black beauty/miner's bean

The gorgeous shiny black 'black beauty' seeds were sent in by a man named Bob high up in the Black Mountains - a runner bean by the name of 'Miner's bean or Black Beauty'.

Bob was given them back in 1974 by a foundry worker in Pontypridd when he was working as a sculptor in the foundry, and he's been growing and saving them ever since. He said he'd had enough of the responsibility as he believes he may have the only seeds left! He's kept some for himself and sent the remainder to us and the Real Seed catalogue.

4. Ben & Kate's trial tomatoes - bush and vine type

These tomatoes were bred by accident in Wales, and are a new variety of tomato selected for those plants that prefer to grow as a bush and those that prefer to grow as a vine. The tomato is a cross between a Latah (early small fruit bush type) and an Irish Gardeners' Delight cross (cherry). It had been selected for extreme earliness and particularly good flavour, bred in Wales by The Real Seed Collection.

Ben & Kate from Real Seeds said "Tomatoes do cross occasionally, at a low level. A few years back, after growing our Latah and Irish Gardeners Delight next to each other, we noticed one plant of the next sowing of the Irish Gardener's delight that had bigger fruit, and an amazing flavour. It had leaves like Latah, and was really early.

We saved seed from it, and planted that; getting some vine plants and some bush plants, with varying flavours and fruit sizes. From these we have selected this breeding material, based mainly on taste and earliness".

Seed saving guidelines

Seedsaving is easy but there are a few key considerations. This varies depending on the type of plant you are trying to save seeds from. If you want to keep your vegetable the same from year to year, it pays to know whether it is an 'inbreeder' or an 'outbreeder' and the normal method of pollination. It is also important to know how many plants are needed to create healthy seeds. This can all easily be found out by book research.

An inbreeder will usually self-pollinate so the resulting seeds will be just like their parents. Saving seeds of inbreeders such as tomatoes and lettuce is really easy.

An outbreeder likes to cross pollinate with other plants. Broad beans are a good example of outbreeders - if you don't want your beans to cross with your neighbour's, you need to control their pollination in some way. This can mean keeping a distance between your outbreeding vegetable and other vegetables in the same family, or putting a mesh cage around them when they flower. Outbreeding plants need another plant of the same variety to pollinate them and plants are subject to a varying degree to inbreeding depression. This means that if the population from which you are saving plants is too small, after some generations of saving seed yields will be reduced. Plants may die easily, germination may be bad, and strange recessive traits may show up. So it pays to know how many you need to grow to avoid this. Leeks are a good example, you ideally need to save seeds from a group of approximately 100 leeks.

The vegetables in the trial, French beans, peas and tomatoes, are all self pollinating and easy to save seeds from. They do not need to be isolated. Runner bean flowers however are much more likely to cross with other varieties grown nearby than French beans. Ideally, to be sure that no crossing takes place, seed crops of runner bean should be at least 1/2 a mile away from any other varieties of Runner bean or isolated. The Miner's bean/Black Beauty runner bean seed was given to triallists who had no immediate neighbours to prevent the risk of crossing.

Triallists were given the Heritage Seed library seed saving guidelines and 'Easy home seed drying and storage' from the Real Seed Catalogue see appendix 2.

Learning through workshops

To assist in the understanding of the importance of maintaining seed diversity the Project held two seed workshops. These workshops were facilitated by a seed saving expert. The first workshop was held at the Seedy Sunday event held annually in Machynlleth. The workshops covered the context, planning and the practicalities of seed saving and were attended by 30 people. The second workshop was held at the City Farms and Gardens annual gathering at Newbridge on Wye. The attendees were wide ranging and several of the attendees represented community growing groups (see appendix 3) or those particularly interested in food security issues.

The triallists

The aim was to involve a wide range of participants from home gardeners to small scale commercial growers with 18 growers taking part in the trials. The triallists were located around Powys (see appendix 3) at various altitudes ranging from sea level to 250m above sea level. The intention was to try the vegetables in different microclimates. The triallists included commercial growers, a vegetable bag scheme, a community supported agriculture scheme, the display gardeners at The Centre for Alternative Technology (C.A.T.), allotment holders and home growers. Additionally, the current gardener from the Llanover estate where the Llanover pea originated was contacted. They had not previously heard of the pea and were keen to grow it this season.

Triallists were given seeds, information sheets and seed saving guidelines. Triallists were contacted on a monthly basis to request feedback on progress.

The results

83% of the triallists responded with final results and feedback.

1. Llanover Pea

Seeds were sown in a variety of soil types and at altitudes. Seeds were earliest mid March, latest 23rd April, with planting out being mid May latest. All were sown indoors in pots with 80%-90% germination rate, then grown on outdoors. Earliest cropping was end of June, with cropping lasting on average 8 weeks. The pea was described as tall and requiring support. Cropping ranged from 'good' to 'excellent' with all triallists describing them as pest free, easy to grow and sweet tasting.

All triallists taking part have saved their own seed and plan to grow this variety again next year. One commercial grower has saved over 3000 seeds - plenty for him to supply his vegetable bag customers and have plenty left over to give away!

"I was amazed at the amount of peas we had from these 9 pea plants. They were huge fat pods and most had 9 peas in each pod. I have saved many seeds and will plant a full row next year. Very, very pleased and surpassed most other peas I have grown. I cannot stress enough just how fantastic this variety is and I would probably list it top of the peas I have ever grown!" Liz, Knighton.

2. Melbourne Mini

Seeds were sown in a variety of soil types and altitudes, at the earliest beginning of April, latest late April, with planting out Mid April to late May latest. All were sown indoors in pots with a 66-98% germination rate; all were grown on outdoors in varying conditions. Earliest cropping was beginning of July, with cropping lasting 6 - 8 weeks. The bean received mixed reviews, with one professional grower describing it being a 'bad year for french beans'! The crop's description ranged from average to good and the taste from 'average' to 'nice and tender'!

All triallists saved their own seed successfully with 40% of growers planning to grow them again. One commercial grower has saved over 5000 seeds - plenty for him to supply his vegetable bag customers with lots left over to give away!

“Eaten fresh or cooked in stews, casseroles etc. and kept to use as dried beans. Nice flavour”
David, Rhayader

3. Ben & Kate’s trial tomato

These were particularly interesting as often blight can be a problem in mid Wales due to frequent mild wet weather during the summer months. Additionally, ripening can often be late due to adverse weather. These tomatoes were described by the breeders as being early and delicious, with having been selected according to whether they preferred to grow as vine or bush types. Both types were trialled and triallists were instructed to save seed from the earliest plant with the best tasting tomatoes thus selecting and breeding their own new variety.

Seeds were started off at earliest end of February and germination rate varied between 80%-100%. The tomatoes were trialled both indoors in polytunnels and greenhouses, and grown outdoors. The earliest crop date was early June with cropping continuing into October.

Crossed between a Latah (small spherical tomato) and an Irish gardener’s delight (cherry tomato), the results were interesting with the resulting tomatoes coming in a variety of shapes and sizes. These ranged from small cherry to much larger chunky shaped tomatoes.



As well as the different shapes & sizes, some people reported that they had a tendency to grow more as a bush than a vine and that they were quite sprawly. The bush variety required support of its branches. Flavour was reported as average to good and yield modest to average. Flavour could have been affected by feeding regimen. They were slightly earlier

than other varieties that the trial lists grew (with the exception of Irish gardener's delight from one triallist), with a long cropping season. Blight and splitting was only reported by two triallists on ones grown outdoors, although co-incidentally it was not a bad season for blight.

4. Miner's bean - Black Beauty

These seeds were donated to DVSS quite late in the growing season. 3 triallists attempted to grow them but the plants did not have sufficient time to mature. These will be given to local growers again next year.

Conclusions

Seed saving is a valuable skill which used to be passed down from generation to generation. As a society we have largely lost this skill and now rely on commercial seed growers to provide the seeds that will grow the food to feed us.

The project raised awareness of the importance of food growing and seed saving in the light of the serious environmental issues we are facing. It engaged with the public through articles published in magazines and newspapers, and with a wide range of growers, individuals and community groups within Powys. It has enabled participants to be part of the survival of seeds being grown in Wales; seeds potentially on the verge of being lost are now preserved for another year. As a result of the trials, many of the triallists will be growing the seeds on next year and the Dyfi Valley Seed Savers now have a larger number of seeds to pass onto local growers, including enough for a small commercial grower to use and in turn provide to its customers.



Appendix 1 - List of articles /interviews following DVSS press release

Radio and television

BBC radio Wales Jamie & Louise programme radio interview conducted
S4C's living in the garden programme. 'Cwm - ni da' Nicola Owen - 01248 671167

Newspaper, magazine and website

RHS Website Garden News 'DVSS campaign' February 16, Wright (Garden News), Andrew J, RHS Website

Mid Wales Permaculture Network - 'Trialling Welsh Varieties' <http://www.permaculture-wales.org.uk/index.php/news>

Wales online 'Seed-society-launches-search-to-root-out-rare-species-of-welsh-vegetables' <http://www.walesonline.co.uk/news/wales-news/2010/01/25/-91466-25676052/>

Western Mail 'Seed society launches search to root out rare species of Welsh vegetables', Jan 25 2010 by Darren Devine

Horticulture Week for Horticultural professionals - 'Volunteer group Dyfi Valley Seed Savers (DVSS) has launched the Welsh Seed Search campaign to unearth vegetable varieties that grow well in local conditions'. <http://www.hortweek.com/news/979273/Hunt-Welsh-vegetable-seed/> 26.1.10

Guardian Twitter 'Hunt on for rare fruit and veg in Wales' Jane Perrone, gardening Editor, @guardiangardens Twitter feed

Daily Post, 'A Nationwide trawl for rare and unique Welsh vegetables has been launched'. Feb 4 2010 by Andrew Forgrave, Daily Post

Flintshire chronicle 'Dyfi Valley Seed Savers (DVSS) are on the lookout for Welsh vegetable varieties' [Jan 28 2010](#) by Lois York

RHS Website 'Wanted: Welsh vegetable seed's - 17 February 2010

AGRICULTURAL & RURAL AFFAIRS INFORMATION -FROM THE WELSH ASSEMBLY GOVERNMENT
'Enterprising project brings back 'forgotten' vegetables' November 2011 GWLAD

Appendix 2

Easy Home Seed Drying & Storage

This is a **really** important bit. You need to dry your seed out, or it will not keep. Seed that is air-dry is not really properly dormant - its just napping; so it is still burning through its stored reserves of energy and will soon run flat - like a mobile phone left on.

Also, you can't put it in a sealed container as it is still breathing - it would suffocate. And without a sealed container, it will soon reabsorb water from the air on the first humid day, and start getting ready to germinate.

How can we dry the seed at home?

We'll use dry rice to suck the water out of the seed & get it really dry. Then it will hibernate completely.

You need to get:

- a big jam-jar with a good lid,
- an old pair of tights,
- a rubber band,
- and some rice

You need to use at least twice as much rice as you have seed. It doesn't matter if you have too much rice, but too little won't work.

Bake the rice on a tray in the oven for 45 minutes until it is bone dry. While it is still hot, put it in the jam-jar, about half full, and screw the lid on.

Wait patiently until the rice is cool. (If you rush this you'll cook your seeds.) So you now have a jam jar 1/2 full of very dry, cool rice.

Put your seed in a bag made by cutting off the foot of the tights, and tie it in with a rubber band. Put it in with the cool dry rice. Put the lid on tightly, so damp air can't get in.

Leave your seed sealed in the jar with the dry rice for a fortnight, and the dampness in the seed will be drawn out into the rice.

You now have bone-dry seed that you can safely seal in a plastic bag, and it will keep for several years. So you don't need to grow each thing every year.

Passing it Round

This is also important. You will have huge amounts of seed. If you are sure you avoided crossing, and that your plants were nice and healthy, then you have a valuable thing there.

You will get about two and a half kilos of seed from a 20-foot-long bed of 30 plants. Now that's actually three-quarters of a million seeds - and if every one of those was given away or swapped, and then grown, you will have created more than 500,000 kilograms of kale! More than enough to feed all your friends and neighbours, and their families.

So you can see that even one person, on a small scale, can make a real contribution to local food security. Take your spare seed to a local seed swap, or even better, organise your own. Get together with your friends or family and set up a seed-circle: one person can grow kale seed, another parsnips, another cucumber, etc etc. You'll all have bags of seed - you can all just swap with each other, so no-one has to save seed from more than a couple of things, yet you all get seed of everything.



It will save you a fortune, and you'll get great, locally-adapted varieties. Just remember, all this is only possible because you are growing real, open-pollinated seed. You can't do this with hybrid (F1) varieties. Funny how the seed companies are so keen on selling you hybrid seed, isn't it?



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Appendix 3

Trial locations	No of growers	No of respondents
Machynnleth	4	3
Pantperthog	1	1
Presteigne	1	1
Rhayader	2	1
Builth Wells	2	2
Hay on Wye	1	1
Newbridge on Wye	1	1
Torafen	1	1
Borth	1	1
Knighton	1	1
Llandrindod Wells	1	0
Talybont	1	1
Abergavenny	1	1

Groups represented at workshops

Green Valley Project
 Llandrindod Transition & Ashfield Community Gardens
 Plants on Plates
 Kingswood Foundation
 Narbeth Allotments
 Riverside Community Garden project
 Horfield Organic Community Orchard
 Bryn Cynan Valley project
 Ynyslas Community Supported Agriculture scheme
 The Loop Project
 Cwm Harry Land Trust