Stroud Community Seed Bank trip to the

Heritage Seed Library

At Garden Organic, Ryton

In the heatwave of July 2016, nine members of the Stroud Community Seed Bank visited the national Heritage Seed Library (HSL) at Ryton. We were given an informative tour of the seed growing, cleaning, drying and storage operations and left feeling hot, inspired, and also somewhat reassured. This is our record of that visit…

"I didn't know tall peas and leafy carrots were in decline [because they don't suit commercial agriculture] but now I want to grow them!"

"It's just like an allotment in here!"

Background

The Heritage Seed Library began in the 1970s, in response to the increasing EU regulation of seed. All vegetable varieties sold as seed now have to be registered on the 'national list' of an EU country, and cannot otherwise be legally sold. In order to get on the list, varieties have to be proven distinct (different from another varieties), uniform (all the plants are very similar) and stable (the plant continues to be the same over generations). It costs a lot of money to get through the testing and put a variety on the national list, and some heirloom varieties wouldn't pass the tests anyway. This means that a proliferation of heirloom gardeners' varieties have been left off the national list and abandoned by seed companies in favour of a few, more profitable, commercial varieties.

The Heritage Seed Library exists to find, cultivate and promote those varieties that might otherwise be lost or die out because they don't officially exist. HSL is part of the national organic gardening charity Garden Organic, and distributes seed to HSL members for free. They cooperate with other small scale seed growers, seed banks and seed libraries.

Seed Growing

We started in the HSL gardens, where most of the seed is grown in a number of polytunnels. There are also some outdoor beds, and a large greenhouse; the scale is that of a small market garden on an acre or two.

The tunnels, with mesh over the doors, make isolating crops easy, so a different variety of runner beans, for example, can be grown in each tunnel, with no danger of them crossing with each other. The tunnels were bursting with a profusion of small quantities of different crops, including peas, beans,

onions, carrots, squashes and more. It was reassuring to see that growing on a very small scale, just as we do in our own gardens and allotments, can still produce a useful quantity of seed. Another advantage of the tunnels is that they extend the growing season and help keep ripening seed crops dry, especially in a wet autumn.

There are challenges in growing so extensively in tunnels. Moulds and aphids can be a problem in the warm, humid environment, and many crops would prefer to be grown outside. Because natural pollinators like bees have been shut out of the tunnels, it is necessary to introduce alternative pollination techniques. Each polytunnel is supplied with bottles of maggots (bought from fishing shops) which hatch out in to blowflies. The maggots require a bit of care and attention, and flies, though not ideal pollinators, will 'bumble about' and transfer pollen from one flower to another. Some hand pollination also takes place, using paint brushes to try to complete the work of the flies.

Outside we saw larger beds of cabbages and kales, covered with enviromesh, and some carrots, onions and others. To successfully grow brassicas for seed requires a large population – around 100 plants. Seeing this in practice made us realize that we are unlikely to find anyone willing to give up such significant space in a garden or allotment to produce seed – though if we did, we would probably have enough seed to supply the whole of Gloucestershire! Biennial root crops like carrots are sometimes started in one location, dug up as if a normal harvest, selected, and then replanted for their seed growing year elsewhere. This is something we could look at doing as a seed bank.

Our final stop in the garden was at the tropical polytunnel. HSL run a project focused on collecting and growing seed from less common 'tropical' crops that tend to be grown in this country by ethnic minority communities. We saw unusual squashes and achocha amongst others.

Around 40% of the seed supplied by the Heritage Seed Library to its members is grown by volunteer seed guardians around the country. Seed Guardians are usually given the simpler things to grow for seed, such as tomatoes and French beans, but some with more experience and a special commitment take on more challenging crops such as leeks. Occasionally things don't work out with a particular seed guardian, but in general it's a successful system that works on trust, and volunteer commitment and enthusiasm.

Seed Cleaning

HSL have a suite of purpose built rooms used to clean, dry and store seeds. These make their work easier, and are proportionate to a national charity of such significance. But it was emphasized that we can still clean and save good seeds without the specialist and dedicated facilities they have.

Seed is cleaned by two broad methods – sieving and winnowing. In the seed cleaning room we saw a whole range of sieves of different sizes, which can be used to separate the chaff from the seed, where the two are different sizes.

We were shown a home made machine created from an old push lawnmower which was designed to help separate larger seeds from their husks (sorry no photo!).

We also saw the high tech and very expensive seed cleaning machine, which uses an air current to separate seed and chaff of different weights. There is an open source model for producing a simple machine based on a similar design and powered by a hoover. On our scale we would be using the very lowest-tech version of winnowing, which is to pour seed from one container to another with a breeze, to blow off the chaff as the seed falls.

Larger seeds like beans and peas are shelled by hand and we saw big buckets of dry, ripe pea seed awaiting shelling.

Seed Drying

The HSL have a special drying room, where all the seed is thoroughly dried to prolong its life. On walking in to the drying room you can feel the dryness of the air. It's filled with wooden racks, and seeds are left in there to dry on open trays for a number of days - or even weeks - according to the type and size of seed.

'Harrington's Law' states that, generally speaking, seed lifespan is doubled for each 5^{o}C drop in temperature and 1% reduction in moisture content.

We discussed seed drying techniques for our community seed bank purposes, and it was suggested that using colour-indicator silica crystals (but not the toxic ones), or even just plain rice, in a sealed kilner jar with a batch of seeds, can be very effective, as the silica or rice absorbs moisture from the seeds.

"I realized we need to think carefully if we want to store a stock of seeds and then how we dry and store them. Or if we simply dry and distribute for the next year."

Seed Storage

At HSL seeds are stored in a specialist temperature and humidity controlled store room, which is cool and dry. This means that the seeds keep much longer than they would in ordinary conditions. The store room is packed from roof to floor with boxes of brown paper envelopes full of many many many different varieties of seeds.

For home seed savers and the community seed bank, it was suggested that kilner jars are great for air tight seed storage – once the seeds are dry, they will stay dry so long as they are sealed in the jar - though it's worth checking that the rim of the jar is smooth and the rubber seal is not perished. Kilner jars can then be stored in the fridge, or even freezer, to prolong the life of the seed. We were warned that every time the jar is opened, damp air gets in, so it's worth packing the seeds in to ready-to-use packets to minimize the time the jar is open.

Seeds can carry fungus, pests and diseases, which either damage the seed itself, or the plant once it's growing. HSL once lost several packets of seeds to weevils, who ate through the paper packets from one batch of seeds to the next. A specialist 'stirred hot water bath', which looked a bit like a deep fat fryer, can be used to kill off most pests and diseases by keeping the seeds at 50°C for 30 minutes. It is possible to replicate at home this by putting seeds in to a thermos full of hot water. Obviously the seed needs drying again afterwards.

All the seed at HSL is given a batch number, and recorded in a database. This means it can be tracked and any problems or surprises traced back to the specific batch of seed from a particular grower.

Not all the kit at HSL is high tech or expensive. We saw a special set of scoops designed to measure out the right quantity of each seed for packing in to small packets. Scoops were made from a range of household and garden materials - mostly bits of plastic tubing cut to the right size.

Thank you!

Many thanks to everyone made the trip so enjoyable and educational. We are really grateful to Neil Munro, manager of the Heritage Seed Library, and to all the other members of staff who we met along the way, for giving up their time, and sharing their knowledge and experience so freely.

Stroud Community Seed Bank is on facebook, or at www.downtoearthstroud.co.uk/seed-saving
Heritage Seed Library is also on facebook and at www.gardenorganic.org.uk/hsl