





Save our seeds

Until the early 19th century, we collected the seeds from our gardens to plant the following year.

Adam Alexander, also known as the Seed Detective, looks at why we stopped doing so and why this matters

HOW many of us, on a warm autumn day, have shaken some seeds from the dry, ripe pod of a favourite garden plant or scooped out seeds from a much-loved tomato to sow the following season? In so doing, we become part of a continuum that began about 12,000 years ago, when our Neolithic hunter-gatherer ancestors gave up foraging for wild plants and settled to farm. In collecting the seeds of wild plants that grew well for them to sow the following season, these accidental plant breeders kickstarted a journey that all the crops we grow and eat have taken—evolving from wild parent to cultivated offspring.

This process of selection naturally focused on plants that flourished in the collector's soil and climates, a system that continued unchanged until early in the 18th century, when a new generation of enthusiastic amateur breeders and entrepreneurial plantmen and women started to take an interest. Echoing our farmer forebears, their method for developing and improving flower, fruit and vegetable crops was through careful observation and the selection of perceived changes that were occurring naturally. The result was the development of a huge range of new varieties.

It wasn't until 1837 that seeds were produced commercially, when Suttons Seeds and Carter's Trusted Seeds started growing flowers and vegetables with the specific purpose of collecting their seeds, which were sold through catalogues published the same year. This marked the start, in this country, of commercial phenotype breeding; that is, the deliberate crossing of different varieties based on their morphology (observable characteristics) by the transfer of pollen from a male flower to a female, thus creating something entirely new. Gardeners and estate owners could now buy packets of countless different varieties of favourite garden crops

by mail order. Not surprisingly, breeding new cultivars became an obsession with the Victorians and seed producers sprang up across the country. Catalogues were often richly illustrated and their arrival through the letterbox was eagerly anticipated. Many home gardeners continued to save their seed and were instructed in doing so with 'saving one's own' advice in gardening books.

Everything changed again with Gregor Mendel's discovery of the laws of heredity towards the end of the 19th century. As a result, plant breeding became a science and, early in the 20th century, moved from the farm and garden into the laboratory. Genetics, a word invented by the biologist William Bateson in 1905 to describe the laws of inheritance has, since the Second World War, revolutionised our approach to plant breeding. This often involves another traditional breeding technique known as mutagenesis—the forced

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mutation of a plant using chemicals and radiation to select for specific traits. This has enabled highly inbred types with the development of F1 hybrid cultivars. Most recent advances are in selec-

tive molecular plant breeding of genetically modified and engineered (GMO) crops, initially rice, wheat, maize and soya, with increasing numbers of fruits and vegetables being added to the list of GMOs every year.

Traditional open-pollinated varieties are very different from genetically narrow and homogenous modern hybrid cultivars. They are highly heterogenous with complex genomes and they are adaptive, meaning their traits can flex with changing biotic and abiotic stresses. Their seeds carry within their genomes the memories of their wild relatives: as growing conditions change, so underused genes 'wake up' and play their part in ensuring the survival of the whole organism.

Why did the tradition of home seed saving go out of fashion? It is thanks mostly to a misguided perception that home-saved seed is not as good and the belief that a greater choice, particularly of modern hybrid cultivars, promises greater yields and better disease resistance. ➔

Once petals have fallen, sunflower heads can be hung up to dry (left) for a couple of weeks before saving the seed (top right)



Tomato seeds can be saved to sow the following year. However, a few, such as this old Italian beefsteak 'Costoluto Fiorentino', may cross-pollinate, so should be kept separate from other types of tomato

However, with about 80% of all the seeds we buy now imported, mainly from the EU, but also from America, North Africa and the Far East, it is becoming ever more important to increase the amount of homegrown seed and so ensure we have the greatest diversity of well-adapted edible and ornamental plants in our gardens.

In the past 50 years, the vast majority of small, family-run businesses selling open-pollinated seed have either been bought out or gone bust, leaving only a handful of companies supplying most of the seed we buy mail order or from local garden centres. (Three of the biggest, Suttons, Dobies and Thompson & Morgan, are all owned by BVG Group, a multi-channel retailer.) There are still several independent seed companies with long and distinguished reputations; Kings Seeds, Marshalls, Mr Fothergill's, Unwins and Chiltern Seeds to name but a few. Most encouraging, however, is the emergence since the start of this century of a new generation

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of small-scale seed suppliers and breeders. Two of the oldest are Tamar Seeds in Cornwall and Real Seeds in Pembrokeshire.

The smaller companies that champion cultivating open-pollinated varieties also provide guidance on how to save their seeds. Garden Organic's Heritage Seed Library, which holds the national collection of more than 800 heritage and heirloom vegetables, actively encourages its members to save seeds of the varieties they share out every year. Not only does this make economic sense, but, by saving our own seeds, we become part of the solution to restoring genetic

How to save vegetable seeds

French beans, peas and most tomatoes are self-fertile with perfect flowers, so do not easily cross-pollinate and thus are simple to save



In the case of pulses, leave the pods on the vines, harvesting the seeds when dry. If the weather is inclement, one can take the pods into an airy shed to finish drying

Tomato seeds can be scooped out and cleaned under the tap—allowing one to still enjoy eating the pulp. It helps to let them ferment for a few days in a jar of water so the placenta around the seed breaks down as it acts as a germination inhibitor. Seeds can then be rinsed and spread out to dry on greaseproof paper on an airy window sill for a few days

Storage Kept in an envelope in an airtight container in a cool dark corner of your home, seeds will keep for several years

Broad and runner beans (above), as with many vegetables, easily cross-pollinate, so need to be isolated to keep them true to type

Lettuce can cross-pollinate, too, so only save seeds of one variety each year, but if you have a neighbour also saving lettuce seed, it is very unlikely that you will get an accidental crossing

Biennial crops such carrots (below), parsnips, beetroot, onions, leeks and radishes are good to save. Only grow one variety from which to save seeds and be sure none of your neighbours have different varieties of the same vegetable going to seed

Cucurbits with male and female flowers on the same plant can be fertilised using a soft brush, but are liable to crossing, so it's a job for early morning before the bees are active and be sure to close up the pollinated female flower to keep them out

Finally, why not allow some accidental crossing and see what delicious, colourful, locally adapted surprises emerge?



diversity, resilience and adaptability in our gardens. By selecting seeds, year after year, from the best flowers and crops we harvest, we are acting as evolutionary plant breeders, exactly like our Neolithic forebears.  Adam Alexander's latest book *'The Accidental Seed Heroes'* (Chelsea Green, £20) is out now. Look out for his seed-buying guide in a January issue of COUNTRY LIFE