

Recognising the Importance of Heterogeneous Grain & Cereal Production in the UK Seed Legislation

As the GAIA Seed Sovereignty Programme, the UK Grain Lab, and other signatories to this advocacy paper, we advocate the importance of diverse grain and cereal production within food and farming systems, and for such production to be supported through appropriate legislation. This includes recognising the value of seeds adapted to local farming systems and the contribution that diverse seed populations make towards building resilient food chains and adapting to climate change.

EU seed legislation, through its temporary experiment on cereal populations, and the new provisions on organic heterogeneous material, has enabled the successful development of commercial supply chains that are adapted to deal with non-uniform cereals, pulses, and other grains. British growers and other stakeholders that are working to develop such supply chains no longer have the benefit of this provision and are disadvantaged until suitable provision is made within UK legislation. These developments should be mirrored in applicable UK legislation, and further enable stakeholders working to develop such supply chains and production models.

Who are we and what do we do?

We are a group of associations, farmers, bakers, (millers), researchers and citizens that share a common interest in developing the potential of heritage, landrace, and heterogeneous (population) types of farmed grain. The current predominant seed and commodity markets focus almost exclusively upon single varieties of grain, and the commercial development of new breeding lines are determined by markets where only significant volumes are likely to be traded. However, our work focuses upon the value of cereals, pulses and other grains from far more diverse genetic resources that would not otherwise be grown by farmers or be otherwise available for millers and those working in the food sector to use as ingredients. Often the volumes of such crops are relatively small and adapted to particular locations and pedo-climatic conditions. They nevertheless represent immense potential to deal with stressful, variable, and unpredictable production environments [1], but also important market opportunities [2] [3]. These crops are far more than simply an agricultural enterprise; they bind together the skills of growers, artisan millers, bakers, and other processors in a collaborative food chain.

Collectively, the group engages in a wide range of activities, including:

- Developing the diversity of commercially grown UK cereals and other grains,
- Engaging in participatory plant breeding projects to develop non-uniform plant material such as cross composite or evolutionary populations, that are functional both on farm and in the bakery, but also the skills and relationships thereof – the nascent alternative grain economy in which those seeds would flow,
- Sharing knowledge and experience about the agronomy and processing of these crops,
- Developing the genetic and commercial potential of cereals and other grains through small-scale production chains that would otherwise be unviable for mainstream commodity markets to pursue,
- Coordinating a process of recording crops being grown including location, quantity, quality and provenance that delivers full traceability.

What are the constraints of current UK seed laws?

In the UK and the wider European continent, the legal seed marketing framework was established in the 1960s to ensure seed quality and varietal identity of seeds for users, mostly farmers. In the 21st century, while the majority of arable farming has become more specialised and of increasing scale, focusing on commodity crops, closer, more collaborative food chains have also emerged. These offer important markets for smaller-scale producers, in parallel to conservation and breeding efforts to revive landraces and develop diverse and locally adapted plant populations [4]. The demand for seed is changing, especially in organic, low-input, or associated types of agricultural production.

Yet the general model of seed marketing laws is stagnant and poorly placed to respond to these promising opportunities. Indeed, these laws remain rooted in the requirement for pre-marketing variety registration based on Distinctiveness, Uniformity and Stability (“DUS”), and Value for Cultivation and Use (“VCU”) criteria and on technical questionnaires initially drawn up to protect plant varieties through intellectual property rights, irrespective of how impractical, uneconomic, and inflexible that system has become for small-scale markets and stakeholders working with and for diversity. Current seed laws that govern anything larger than plot-scale cultivation in the UK are based primarily upon a cumbersome process of variety registration where non-uniform populations and on-farm agrobiodiversity management practices find little to no place. The process of approval is relatively costly and slow, which immediately puts small scale production of any promising crops at a disadvantage.

Landraces and conservation varieties

Farmers within our network are working closely with millers and bakers to use and develop crops that are suited to particular local conditions and that in turn is helping to support a range of food products that share a strong provenance and identity. Some of these seeds come from landraces or traditional varieties, as interest in heritage varieties is increasing. Yet many producers remain uncertain about the varieties which can be traded as seed, and the records that need to be maintained, such as the location where they are grown, and the volumes produced, in the absence of a searchable database tool listing all such relevant information, whether in a specific issue of the Plant Varieties and Seeds Gazette, or through another tool.

Although the specific derogatory regime of conservation varieties was introduced in UK seed laws in 2009, the difficulty in accessing the detailed information required by farmers is a significant barrier to the use of the regime. Furthermore, the conservation variety system remains rooted in the DUS paradigm in a heavily bureaucratic approach that is difficult to navigate for small-scale businesses, all the while imposing significant quantitative and geographic restrictions for the marketing of their seeds, which considerably crush any cost-benefit analysis for the registration of heritage varieties. Indeed, the market requirements are such that field-scale quantities of seed of the few registered conservation varieties are only available through larger merchants. At the other end of the spectrum, small plot sized amounts are available through seed banks and specialist growers. However, in between these extremities lies numerous potential food supply chains that are currently held back by uncertainty and disproportionate rules.

The current regime additionally follows a conservationist mindset, designed to fight genetic erosion, and does not incorporate the dynamic management and evolution of these varieties on farm. That is why, even though landraces such as Ölandsvete are already recognised as conservation varieties, others that have evolved through successive generations of on-farm development and seed-saving are not registered, and thus cannot find their way into the market. These nonetheless represent important genetic resources that are an integral part of any strategy to adapt to the changing climate, build resilience on farm, and can only continue to do so if their production is supported.

Heterogeneous crops

While landraces remain rooted in the classical notion of a plant variety enshrined in seed legislation, although often times blurring these conceptual lines in practice, there is also quite an interesting range of new plant material developed specifically outside of the confines of the legal precept of a plant variety [4]. Many of the population crops being grown successfully within our network, such as Wakelyns YQ and Oak Farm, are indeed intended by design to be diverse and to continue to adapt to specific local environments. This material is completely left outside of current seed laws, which hail uniformity and stability.

The UK took part in the temporary experiment launched through the European Commission Implementing Decision 2014/150 that allowed the marketing of new populations of wheat, barley, oats and maize. The experiment led to the registration of 35 populations (mostly of wheat), and to the marketing of 100 tonnes of seeds, and stayed nonetheless below commercial scale marketing, except for the Organic Research Centre's Wakelyns population in the United Kingdom and the SOLIBAM populations in France, Germany, and Italy [30]. It was extended in the EU until 28th February 2021 but was not echoed in UK Seed legislation. Our wider network was heavily involved in and connected through what became a collaborative food chain trial, much more than a simple derogation to UPOV criteria, to DUS and VCU questionnaires or seed certification requirements, it created a community with experience in sharing knowledge, gathering information, and ensuring seed health and traceability of the material. The experiment allowed significant progress to be made in taking plot-sized experimental work to a field-scale where sufficient quantities can be produced to carry out the necessary processing and marketing work that enables such crops to find their way into value chains.

The continued development of heterogeneous crops, including population and many landrace types, falls outside of UK legislation. This will effectively stop the further development of this highly promising area of regenerative farming for no other reason than the fact that legislation has not evolved quickly enough to respond to the opportunities that exist. As we face the challenges of dealing with more extreme and unpredictable weather patterns, and of minimising the environmental impact of food production, the importance of diverse heterogeneous crops will only further increase.

Faced with tremendous legal uncertainty and pushed to the confines of illegality by the lack of follow-up legislative action concerning the marketing and production of heterogeneous material, we advocate for authorities to seize the opportunity to rebalance UK seed laws, and not eradicate the long-standing work done by illustrious breeders, research centres, farmers, and food processors to better understand and benefit from diversity and heterogeneity in our food and farming system.

Pathways to rebalance UK seed laws

DIFFERENTIATED RULES ACCORDING TO MARKET SIZE AND NEEDS

- ! *Seed laws should provide for differentiated rules that better reflect the different scale of seed markets, recognising the need to balance the appropriate level of reassurance with the costs and administrative burden imposed.*

The rules pertaining to plant and seed health today stem from a separate piece of legislation which applies to all movement of seeds, and not their marketing. In order to offer wider guarantees of traceability outside the formal variety registration and seed production rules, the scope and details of the seed marketing legislation also needs to adjust accordingly. Exchanges of seeds between individuals, whether citizens, researchers, or farmers, whether aiming at the conservation of biodiversity, selection trials, or operating within a closed value-chain, **should not be viewed as falling within the scope of seed marketing laws**, even when they occur between professional operators, or when they involve a monetary transaction aimed at recouping conservation and service costs.

The UK Grain Lab (UKGL) coordinates the emerging network of regional grain alliances, and through its work it reflects the paramount importance of **providing safe, wholesome food**. It also recognises the importance of ensuring that crop varieties are properly suited to their environment and that where seed is swapped or otherwise traded, it should meet the appropriate phytosanitary and other quality standards. We have found that the need to record what is being grown where and by whom is something that has historically not always been well understood by growers, and in particular those with little prior experience of heritage, landrace and population types. Furthermore, the recording that is being carried out is often fragmented. As a result, we have begun a process to develop a single platform for UKGL members that will enable them to easily record crop types, locations, and quantities. This will enable seed to be tracked through successive generations as they evolve, and it will also ensure that the necessary phytosanitary checks are being undertaken for grain that is destined to be used as seed. By providing responsible oversight of this important sector of farming, we hope to be able to facilitate a legislative framework that will allow the small-scale production of important food crops.

SUFFICIENT SPACE FOR THE MARKETING OF HETEROGENEOUS POPULATIONS

- ! *Seed marketing rules need to provide sufficient space for the marketing of non-uniform varieties and populations, thereby ensuring that stakeholders who wish to have access to less uniform plant reproductive material can source it in all legality. Such space should be wider than restrictive derogation regimes, with no limits on market locality or quantity, and recognise the role of farmers as breeders engaged in the dynamic management of crop diversity.*

- **Support for cereal population breeding:**
 - » The role of farmers as breeders, especially in cereals, should be officially recognised within seed laws. This could be included within the framework of the registration system that we have proposed and is already an integral part of the UKGL’s work.

- **Light-touch legislation for Population (heterogeneous), Heritage (conservation), and Landrace types in the conventional UK Seed Legislation**
 - » There should be a single and simplified regime for the registration of traditional material conserved and managed by farmers or associated organisations, but also new material developed through participatory and evolutionary plant breeding, which breaks with the traditional DUS paradigm stemming from the world of intellectual property rights, and establishes proportionate rules for seed production, labelling and traceability. This regime could for instance be inspired by the Swiss regime of ‘niche varieties’, which has been successfully running since 2009.
 - » We envisage that this new possibility to enter into the market will cover the important gap between experimental / research quantities of seed (typically up to 2 kg) and the lower end of what mainstream commodity markets might deem to be viable (100 tonnes). This would facilitate the important commercial development of markets for crops that would otherwise not progress beyond the experimental stage.

- **Organic seed supply:**
 - » To boost the range and availability of seeds developed specifically for organic and regenerative systems of farming. In particular, there is a pressing need for UK legislation to provide the same opportunities as the new EU rules on organic production.
 - » This includes the development, notification, marketing, and control of seeds of organic heterogeneous material, based upon a simple notification system to public authorities, mirroring the regime set out by EU Commission Delegated Regulation 2021/1189 of 7th May 2021.
 - » In addition, mechanisms should be set out to ensure that organic varieties, which are not completely heterogeneous yet not uniform enough to qualify for variety registration in the UK, can still be commercialised (whether through a temporary experiment like the EU, or through the adoption of adapted DUS and VCU protocols for varieties developed solely for organic production).

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! As a result, we request DEFRA and other competent authorities to ensure legal security for stakeholders involved in heterogeneous cereal and grain production and development; first through the formal recognition of a transition period to continue carrying out the work ignited by the EU temporary experiment, followed by a sustainable legislative way forward taking into account the characteristics and needs of our group in the interest of the development of seed and food systems, as highlighted in this document.

WE ARE:

Brockwell Bake
East Midlands Grain Alliance
Farmerama
Gothelney Farm
Hodmedod's
Nottingham Mill Coop
OF&G Organic
Real Farming Trust
Scotland The Bread
Seed Sovereignty – The Gaia Foundation
Sega
Small Food Bakery
Sustain - The Alliance for Better Food and Farming
UK Grain Lab

