

# Tools to identify genetically heterogeneous cultivars 3: description

## Problems

In a variety, one individual plant can represent the whole plant grouping, making univocal identification possible, whereas in organic heterogeneous material (OHM) an individual plant cannot represent the population, and therefore a range of description and identification metrics is needed. Hence, seed registration and certification of OHM relies on information on the constitution, traceability and description of the OHM seed.

## Solutions

A temporary experiment on the marketing of genetically diverse populations of wheat, barley, oats and maize was granted under the EU implementing decision 2014/150/EU, where tools to identify and describe genetically diverse populations were tested. Tools to describe the populations were set out as (i) degree of heterogeneity and (ii) performance testing. A SWOT analysis of these tools was performed to inform future developments of the legality of OHM (Table 1).

**Table 1: Summary of the SWOT analysis conducted on tools for description of populations in 2014/150/EU: 'degree of heterogeneity' and 'performance testing'**

<p><b>STRENGTHS – population description can:</b></p> <ul style="list-style-type: none"> <li>● recognise the variable nature of populations</li> <li>● provide farmers and end-users with information on performance and hence align with national list protocols</li> <li>● provide a reliable reference of what to expect from a population</li> </ul>	<p><b>WEAKNESSES – population description can:</b></p> <ul style="list-style-type: none"> <li>● bear risk of parallel market, as it can be hard to distinguish populations from one another</li> <li>● be confusing in terms of which traits and parameters to measure</li> <li>● insufficiently describe performance as it changes over space and time due to evolutionary pressures</li> </ul>
<p><b>OPPORTUNITIES – population description might:</b></p> <ul style="list-style-type: none"> <li>● outline the agro-climatic context of a populations' breeding and multiplication</li> <li>● bear potential to link to on-farm trials and end-use</li> <li>● provide advice on environmental conditions for optimal performance (e.g. soil, climate, management)</li> </ul>	<p><b>THREATS – population description might:</b></p> <ul style="list-style-type: none"> <li>● be met by limited testing capacity especially in and for organic farming</li> <li>● become overly prescriptive and limit the potential use of the population</li> <li>● become exponentially complex from an administrative point of view if number of populations, actors and/or users increases significantly</li> </ul>

## Practical recommendations

- Description of the degree of heterogeneity and population performance can be useful in advising on the management and use of the population.
- Detailed description is likely to be difficult to implement, so it is not recommended as a legal requirement in the next stage of regulation for heterogeneous material.
- Good practice would be that developers/breeders maintain and share clear and transparent records on the parameters relating to the description and use of their population.

## Further information

1. [Text of the Commission Implementing Decision 2014/150/EU](#)
2. [Main outcomes and SWOT of experiences from marketing populations under the Temporary Experiment into the commercialisation of heterogeneous populations in the European Union](#)

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