



# Legal framework and temporary experiment on organic varieties

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**DG Sante Working Group on Seeds and Propagation Material**

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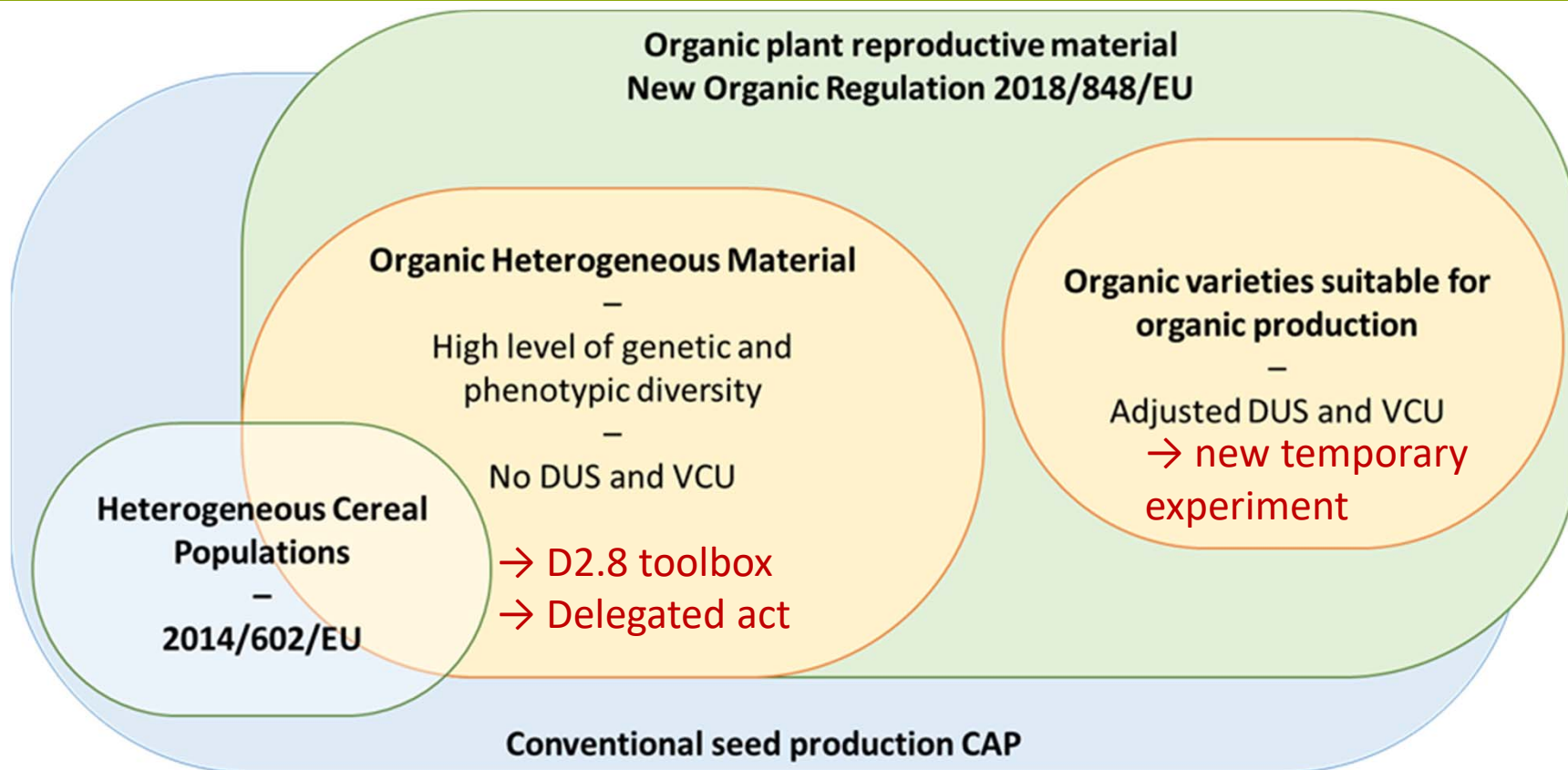
# Definitions

**Cultivar:** comprises registered varieties, landraces, populations, composite cross populations, organic heterogeneous material etc.

**Organic plant breeding (OPB):** Organic cultivars are obtained by an organic plant breeding program as defined by the IFOAM International norms of 2014. All breeding steps from crossing till final selections take place under organic conditions and the applied breeding techniques are in accordance with the techniques listed in the Annex of the position paper of IFOAM International for organic breeding from November 2017. Moreover, cultivars derived from OPB shall also not be patented.

**Breeding for Organic (BfO):** are more product oriented and have a special focus on the breeding goals which are specific for organic agriculture (e.g. tolerance against seed born diseases, weed tolerance, nutrient use efficiency), they do not use critical breeding techniques and selection occurred at least partially under organic conditions.

# Novel Cultivar Types



- Definition of organic plant breeding
- Definition of organic heterogeneous material for all crops
- [www.liveseed.eu](http://www.liveseed.eu) > **Results** > **WP2 cultivar testing**
  - > MS18 report on SWOT analysis of characterization of heterogeneous populations
  - > D2.1 overview of organic variety testing in Europe
  - > D2.4 Guidelines for DUS and VCU testing of organic varieties

# New EU organic regulation (2018/848)

## Organic varieties

### Preface

(39) In order to meet the needs of organic producers, to **foster research and to develop organic varieties suitable for organic production**, taking into account the specific needs and objectives of organic agriculture such as enhanced genetic diversity, disease resistance or tolerance and adaptation to diverse local soil and climate conditions, **a temporary experiment** should be organized **in accordance with Directives** .... 66/401/EEC, 66/402/EEC, 68/193/EEC, 2002/53/EC, 2002/54/EC, 2002/55/EC, 2002/56/EC, 2002/57/EC, 2008/72/EC and 2008/90/EC for a term of **seven years**, should involve sufficient quantities of plant reproductive material and should be subject to yearly reporting It should help to establish the **criteria for the description** of the characteristics of that material and to determine the **production and marketing conditions** for that material

→ Implementing act on temporary derogation for organic varieties of agricultural species suitable for organic production under development

# New organic regulation

## Organic Varieties

### Article 3 – Definitions

(19) ‘**organic variety suitable for organic production**’ means a **variety** as defined in Article 5(2) of Regulation (EC) No 2100/94 which:

(a) is characterised by a high level of genetic and phenotypical diversity between individual reproductive units; and

(b) **results from organic breeding activities** referred to in point 1.8.4 of Part I of Annex II to this Regulation

Annex II: 1.8.4. For the production of organic varieties suitable for organic production, the **organic breeding activities shall be conducted under organic conditions** and shall focus on **enhancement of genetic diversity, reliance on natural reproductive ability, as well as agronomic performance, disease resistance and adaptation to diverse local soil and climate conditions.**

All multiplication practices except meristem culture shall be carried out under certified organic management

# Why we need adjusted variety release for organic varieties?

- Organic breeding initiatives aiming to develop a broad portfolio of crops and many cultivars within crops

→ even with increasing market share of organic, breeding activities for such broad portfolio cannot be refinanced via royalties or seed sale. More than 50% of turnover of organic breeding initiatives is financed by non profit foundations, more public and contribution of the value chain is needed

- Based on LIVESEED farmers' survey most organic farmers claim that the lack of organic seed of locally adapted cultivars is the main bottleneck for organic production
- Application of certain breeding techniques like genetic engineering or cell fusion are not accepted by organic farmers and consumers and limit choice of farmers

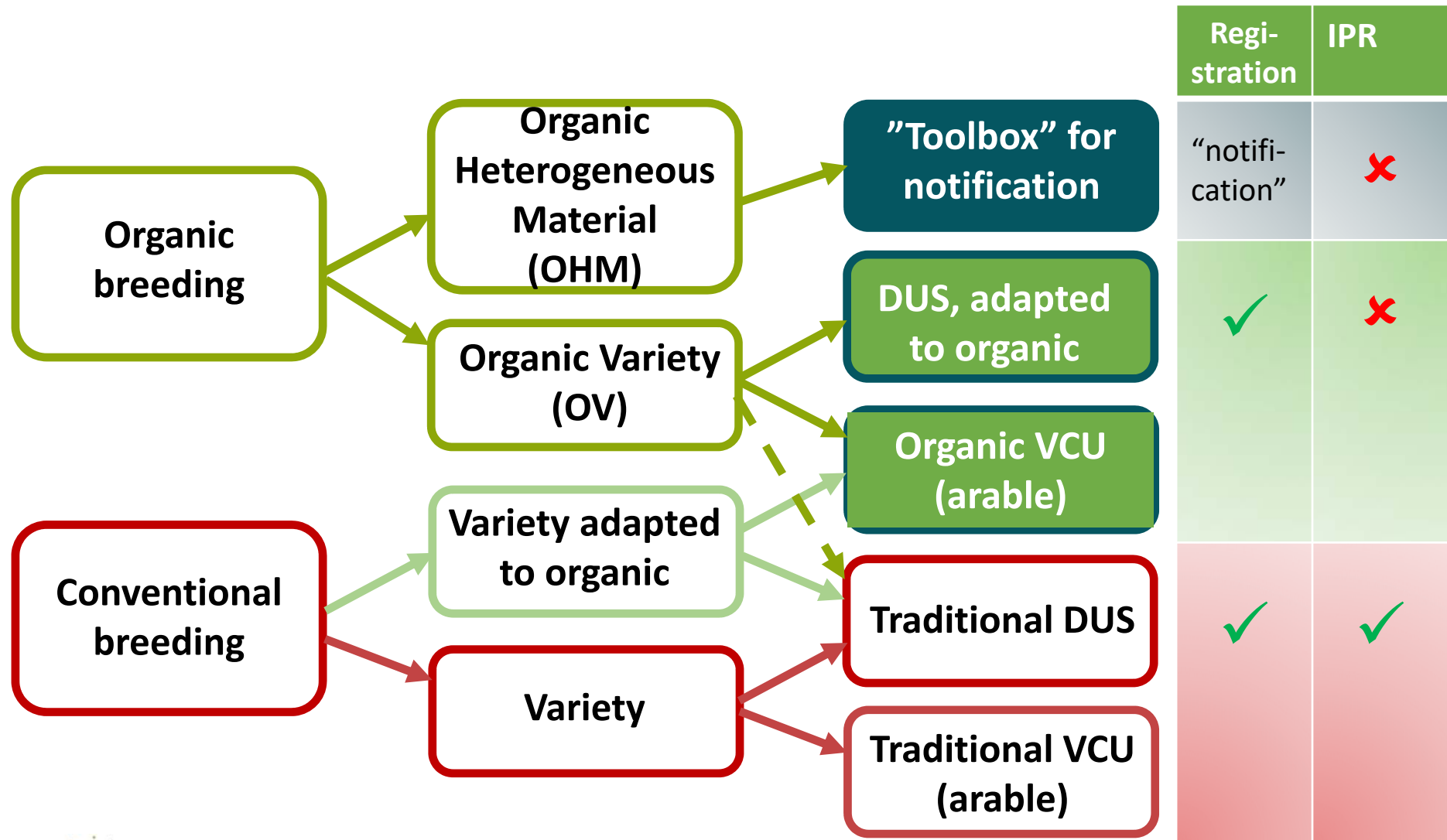
→ high demand for organic varieties suitable for organic agriculture

- Organic breeders cannot invest too many resources to fulfill thresholds that are not relevant for farmers, processors or consumers

- Registration fee is often a bottleneck for small organic breeding initiatives



# Breeding Strategies and Registration of Organic Varieties



# Adjusted protocols for DUS

- Proper implementation of DUS for OPV, correct reference varieties, own category for Open pollinated varieties
- Take more emphasis in D and S instead of Uniformity
- **Restrict the uniformity levels to a minimum required for product quality and use** to allow higher adaptation and yield stability
- **Assess all parameters** but use less parameters to judge U and S
  - restrict to only morphological traits with no effect on yield stability
  - Restrict to traits where uniformity is required by farmer, processor or consumer
- Allow preregistration to test market acceptance first before investing in registration (e.g. for apples, grapes)

[www.liveseed.eu](http://www.liveseed.eu) > Results > WP2 cultivar testing

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# Temporary experiment Preparation by working groups

## Proposed priority species from DG Sante

### Arable crops:

- Wheat
- Rye
- Maize
- Soybean
- Alfalfa/Lucerne
- Potato

### Vegetables:

- Carrot ←
- Kohlrabi ←
- Tomato
- Onion

already attended to  
in the pre-project  
conducted by  
Naktuinbouw,  
Louis Bolk Instituut  
and ECO-PB  
together with  
LIVESEED  
in 2020

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# Adjusted DUS

Example: *carrots for bundling*)

		relevance of utility for			importance for selection	ECO-PB proposal for adapted protocol	
UPOV Nr.	asterix characteristics	farmers / producers	trade / processors	consumers	organic carrot breeders	Characteristics to be considered mandatory	characteristics to be considered optionally on request (or recommendation) of the applicant
						(0=none, 1=medium, 2=great)	(0=none, 1=medium, 2= great)
2	Leaf: attitude	2	1	0	1	1	0
4 (*)	Leaf: division	0	1	0	1	0	1
6 (*)	Leaf: anthocyanin coloration of petiole	0	1	0	1	0	1
14 (*)	Root: external colour	1	2	2	2	1	0
17	Root: extent of green colour of skin of shoulder	2	2	2	2	1	0
18	Root: ridgning of surface	2	2	1	2	1	0
19 (*)	Root: diameter of core relative to total diameter	0	1	1	2	0	1
22 (*)	Root: colour of cortex	1	2	1	2	1	0
25 (*)	Root: extent of green coloration of interior (in longitu	2	2	2	2	1	0
		<i>characteristics in total:</i>				20	11

31

20

+

11



This project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727230.

# The cooperative projects with NAK, GEVES



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# Adjusted protocols for VCU

- Option to test organic bred cultivars **under organic farming systems** (=target environment)
- Also allow for testing under mixed cropping systems e.g. pea – cereal which is very common in organic agriculture
- Adjusted parameter assessed under organic VCU that reflect **specific traits needed in organic farming** (e.g. weed competition, seed born diseases, early vigor)
- Adjusted thresholds that account for **sustainability parameters** and other ecosystem services not mainly yield
- Seed of all cultivars should be organically propagated to avoid bias due to different seed source (e.g. untreated conventional seed versus organic seed)
- **Optional VCU for arable crops** for speciality markets (e.g. triticale for breadmaking)

# Next steps for temporary experiment for OV

- The temporary derogation for OV should start in July 2022 for maximum 7 years and each EU Member State can apply to participate
- It is foreseen that the organic breeders can send their cultivar candidates for registration as organic varieties to national examination offices of participating Member States against a fee. Start with selected species (e.g., carrot, kohlrabi)
- ECO-PB is presently developing crop specific suggestions for adjusted DUS similar to the carrot example (broccoli, onion, sunflower, barley, maize, tomato, potato)
- ECO-PB is preparing a **template for EO for self-declaration of breeders** on compliance to “**organic variety derived from organic breeding activities**”
- Common field trials should be set up for achieving agreement on adjusted DUS and VCU testing involving examination offices, breeders and researchers. For this additional funding is needed.
- EO should inform their Member States to participate in this temporary experiment and to **provide respective funding**.

# Notification of OHM starting January 2022

## On national level

- Communication to raise awareness on this novelty for OHM and implement this in national legal framework
  - National authorities together with expert groups including organic breeders and EO need to develop **template for the notification** of OHM in given country
  - It need to be decided who will **be responsible for the risk-based official controls on compliance of OHM** (identity, description, sanitary issue, germination, seed purity according to ISTA): organic certification officer or seed certification officer, both, or third party?
  - Digital tools for breeders and seed producers of OHM for easy description and traceability of commercialization of OHM as required in the delegated act
  - Database to follow up on OHM to be added to the platform on Varsity finder
- 
- **It would be important to integrate OHM and OV into the revision of the Seed Directives**

# Seed Revision

- More flexible and market oriented regulations
- Amateur market should be excluded from scope
- Right for farm saved seed
- Adjusted DUS and VCU for OV without plant variety protection
- Conservation varieties, amateur varieties and OHM without DUS testing are very important for the organic sector and should be integrated in the seed directives, maybe as «**diversity cultivars**»
- To fulfil Green Deal Strategy future VCU testing should integrate in **general conventional and organic sites** (→ 50% less fertilizer loss → 50% less pesticides) and sustainability parameters (e.g., tolerance to biotic and abiotic stresses) should be mandatory to «**sustainable VCU**» testing



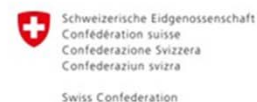


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