A future for diversity in the seed law reform

Plant Breeding for Organic Agriculture - Needs and legislative challenges

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Representation of Lower Saxony, Brussels
Growth of Organic Farming in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Area</th>
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</thead>
<tbody>
<tr>
<td>Welt</td>
<td>0.9 %</td>
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<tr>
<td>Europa</td>
<td>2.2 %</td>
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<tr>
<td>Deutschland</td>
<td>6.1 %</td>
</tr>
<tr>
<td>EU</td>
<td>5.4 %</td>
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<tr>
<td>Schweiz</td>
<td>11.7 %</td>
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<tr>
<td>Österreich</td>
<td>19.7 %</td>
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</tbody>
</table>

Source: FiBL & IFOAM, 2012
The IFOAM Organic principles(1) in relation to seed

Principle of health

- Closed production cycle with minimum external input
- Fertile soil as basis for the sustainable production of healthy food and feed
- Resilient plant varieties and populations which are adapted to organic farming in locally different pedoclimatic and cultural conditions (tolerant / resistant plants against biotic and abiotic stress, esp. soil born diseases, weed competition, nutrient and water efficient,...)
- Selection need to be done under organic conditions
The IFOAM Organic principles(2) in relation to seed

Principle of ecology

- Agrobiological diversity on landscape, farm and field level (many different crops, crop rotation, mixed cropping systems, agroforestry, intra-varietal diversity, ...)
- High plasticity and adaptability to changing conditions
- Optimal plant – rhizosphere interaction (symbiosis with microbes for N fixation, nutrient acquisition, pest suppression, attractance of beneficial organisms, ...)
- Efficient selfregulating systems, agriculture as part of ecosystem
The IFOAM Organic principles(3) in relation to seed

➤ Principle of fairness

• Fair conditions for different actors on the seed market, promote diversity of stakeholders (participatory breeding)
• Stop disproportionate bureaucratic burden for small seed producers
• Open pollinated varieties (farmer’s right), no patents (breeder’s privilege)

➤ Principle of care

• Preserve genetic resources and associated agronomic practices and knowledge for the potential needs of future generations (e.g. Changes of dietary habits, environmental conditions, allergies, etc.)
• Avoid breeding techniques that technically interfer below cell level
IFOAM EU main demands - seed law revision

New seed legislation should foster

- Breeding activities in many crops → improve agrodiversity in Europe
- Genetic diversity on crop level to be prepared to climate change and new challenges → many different breeding initiatives
- Breeding innovations like participatory / evolutionary breeding, breeding for local products, for mixed cropping, intra-varietal diversity
- Diversity of products in the markets and local specialities → satisfy consumer demand
Organic Agriculture has special requirements for plant varieties

- Breeding and variety testing should be done under organic farming conditions in such locations that correspond to the target situation of use.
- Restrict the uniformity levels to a minimum required for product quality and use to allow for potential of OPV higher adaptation and yield stability.
- Breeding activities aiming for small, local or speciality market should have easier market access.
- Special breeding techniques should be refrained from.

IFOAM EU main demands - seed law revision
Genetic diversity within varieties

Varieties with ORD not aiming for DUS and variety protection

Adjusted DUS Testing according to cultivar type

- **Composite cross of self pollinating species**
- **Population crosses**
- **Landrace of out-crossing species**
- **OPV less uniform**
- **Open pollinated Variety (OPV) of out-crossing species**
- **Synthetic Polycross**
- **Full sib progenies**
- **F4 progenies**
- **3 Way hybrids**
- **Double cross hybrids**
- **Top Cross hybrids**
- **Inbred lines**
- **Clones**
- **F1 hybrids**
IFOAM EU main demands - seed law reform

- DUS Testing must be adjusted to variety type otherwise OPV will totally diminish from European market despite their ecological potential
  - Less traits, higher tolerance to trait frequency for outcrossing species, comparison with other OPV (not affected by inbreeding depression due to limited multiplication space of gene banks)
- VCU testing should be optional and adjusted to market share and target use
  - Number of locations for testing depending on potential market
  - Testing for sustainable production under target farming conditions and different pedoclimatic conditions
- Adapted rules for registration of less homogenous/stable open pollinated varieties
IFOAM EU main demands - seed law reform

- **Public service**
  - registration of varieties, VCU, and seed quality control must remain a public service, accessible to all seed producers

- **Transparency**
  The following information must be publicly available for registered material:
  - species and variety name, origin (region or country), propagation region
  - breeding methods, origins of the basic varieties, patents

- **Availability**
  - GMO-free varieties & genetic resources must remain available
  - Varieties whose variety protection right has expired should remain available
  - Seed sample of all varieties should be delivered to gene bank also in case of hybrids to safeguard genetic resources
# IFOAM EU main demands - seed law revision

<table>
<thead>
<tr>
<th>Official testing DUS criteria</th>
<th>Official testing Adapted DUS criteria</th>
<th>Officially recognised description for specific markets</th>
<th>Outside the scope of legislation</th>
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</thead>
<tbody>
<tr>
<td>Highly uniform varieties</td>
<td>Open pollinated varieties</td>
<td>1) Conservation and new bred varieties (former amateur varieties), niche/heterogeneous material $\rightarrow$ simple description of main characteristics, reduced bureaucratic burden</td>
<td></td>
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<tr>
<td>• Inbreds, Clones,</td>
<td>-Adapted evaluation of uniformity and stability, criteria reduced to homogeneity demand of market No variety protection VCU voluntary</td>
<td>2) Composite Cross Populations $\rightarrow$ description of history of use and parental lines</td>
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<tr>
<td>• F1 Hybrids</td>
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<td>Free exchange and direct sale by farmers, gardeners and conservation networks to non professional users</td>
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<tr>
<td>• Synthetic</td>
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<td>• OPV</td>
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<tr>
<td>with IPR</td>
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<tr>
<td>VCU voluntary</td>
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## Adapted requirements for different types of market volume
MAKING EUROPE MORE ORGANIC
10 YEARS OF ADVOCACY FOR SUSTAINABLE FOOD AND FARMING

Thank you for your attention!

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Together for more diversity: Gardeners, farmers, organic breeders, ...