

Organic breeding and organic seed in Hungary

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Background



Until 2030:

- **50% decrease of pesticide use**
- **20% decrease of fertilizer use**
- **Increase of organic lands to 25%**
- **EU Reg. 2018/848: only organic seed use from 2036**

Starting of Organic Seed Working Group within the Hungarian Seed Association

2019 March:

1. ÖMKi workshop (H2020 EU LIVESEED: ÖMKi, ATK)
2. Organic seed sector: status, weaknesses, opportunities

2020 March:

Aim of Organic Seed Working Group:

- Boosting organic seed use
- Invitation of seed companies engaged in export in Hungary to be part of domestic market



Organic Seed Database

- Basis of decision on derogations (Annex X. of the organic regulation is empty in Hungary)
- 2 out of 3 organic seed categories are not in use (only single derogation: Cat. II.)
- Administrative overload (both users and authorities)
- Slow spread of organic certified seeds (slow improvement of organic plant breeding)



Filling up Category I.

Conditions to be reached:

- Sufficient quantity of organic certified seeds from the given crop species
- Diverse variety pool uploaded into the Organic Seed Database (no derogation)

Increasing the variety supply of important crop species:

1. Upload all seed lots produced in Hungary to the Organic Seed Database
2. Targeted seed production on the basis of Hungarian organic cultivar tests
3. Promotion of test results to organic farmers (list of suggested varieties)



Organic Breeding in Hungary

- 2004: beginning of organic breeding: Martonvásár (ATK) - 4 ha
- 2005: elaboration of certification of organic breeding (Biokontroll)
- 2007: development of wheat CCP (+ einkorn, durum and interspecific CCPs)
- 2008: registering the first „organic varieties” (einkorn, emmer)
- Financing:
 - EU research projects (FP7, H2020)
SOLIBAM, LIVESEED, REMIX, SOLACE, ECOBREED, LIVESEEDING
 - National projects (GOP, GINOP)
ALKOBEER, CONFU, ELIXBEER (2021: *Mv Naszád* – malting wheat variety)
- Testing of conventional breeding lines and varieties (breeding for organic agriculture: BFOA)
- 2017: organic breeding for organic varieties (wheat and triticale)
- 2019: new emmer and durum CCP breeding (ÖMKi)



Organic Breeding in Hungary

Participatory breeding:

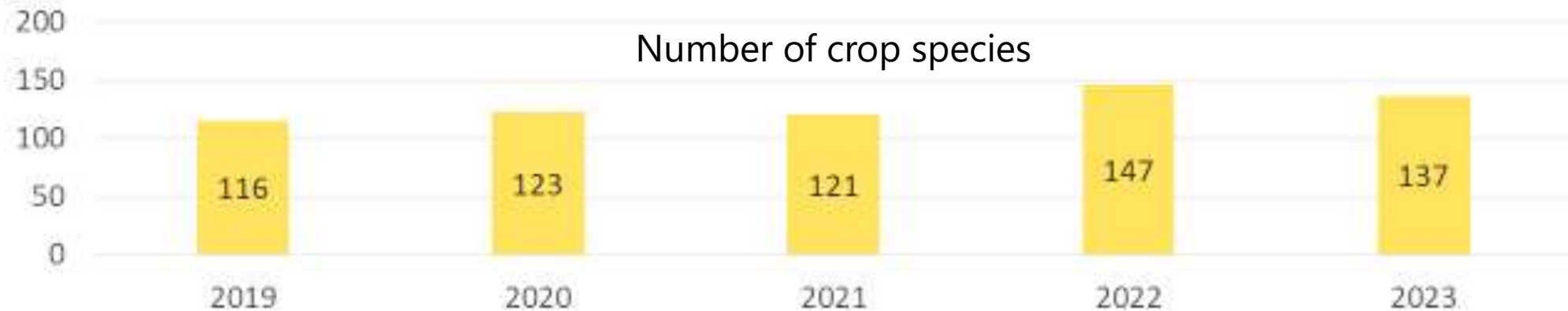
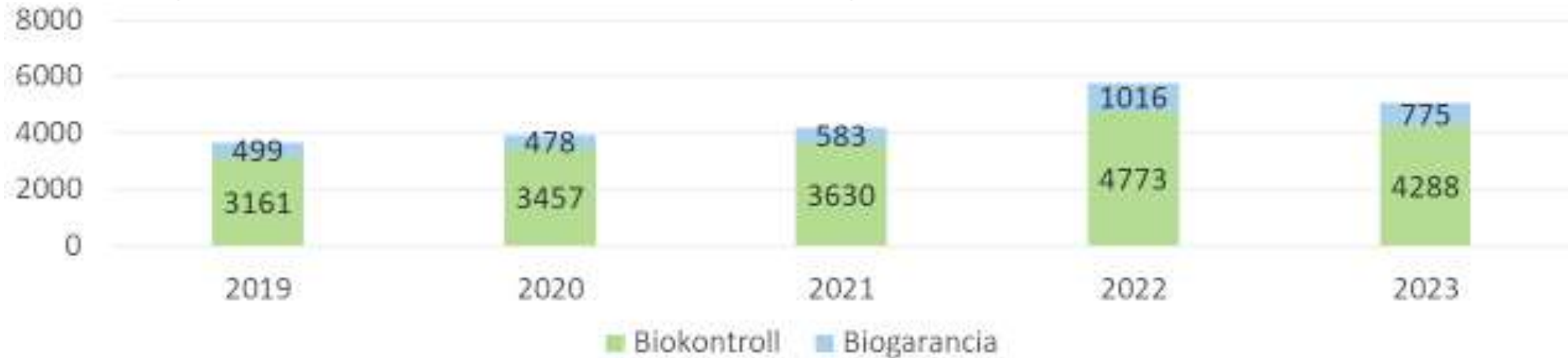
- Participation of farmer/user in the breeding process
- Individual needs, targeted environment
- Types:
 - Participatory variety selection (ÖMKi's on-farm network since 2012)
 - Participatory plant breeding:
 - Starting (evolutionary) population
 - Joint selection by farmer and breeder: ATK-Csoroszlya Fa
 - ÖMKi: durum×emmer breeding program
 - Development of modern landraces

Organic testing of breeding lines (BFOA) in other institutions: GK, K



Derogation statistics

Increasing trend regarding number of derogations and species. Increasing number of organic farmers (6k) and organic area (320 kha, 6% of ag. land)



Groups formed after evaluating the derogations of 5 years

- 1. Leading crops:** New organic trials are needed for species with >1 kha and >20 varieties - reflecting to high uncertainty: wheat, alfalfa, sunflower, maize
- 2. Candidates for Cat. I.** (no derogation): Testing species with bigger growing area (>200 ha) and low variety number (<20): e.g. oats, triticale, rye, pea, sweet corn, millet
- 3. Ready for Cat. I.:** Testing is possible, but variety number is low (max. 5) and at least 10 derogations/year - $>$ incessive transition could be started (phacelia, buckwheat, popcorn, clovers, oil pumpkin), and could be based on organic variety trials (spelt wheat), which could offer variety scale evaluations/suggestions for farmers
- 4. Candidates for Cat. III.** (general derogation) for a given season, because of huge diversity of varieties used and/or no organic seed production exists (e.g. tomato, peppers, salads)
- 5. Unbalanced usage of crops:** highly varying numbers of varieties and derogations from year to year (e.g. barley, durum, potato): more years are needed for evaluation, or trials

Thank you for your attention

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