

*Accelerating sustainable and diverse food systems
through participatory organic plant breeding*



Group 1

OHM development

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OHM

<https://www.geves.fr/variety-seed-expertise/organic-agriculture/organic-heterogeneous-material/>

List of Notified Heterogeneous Biological Materials in EUROPE

Species	Member State	Denomination	Operator	Date of registration
Allium fistulosum	Czech Republic	Variace zimních secek	Marek Kvapil	15/07/24
Beta vulgaris L. – Spinach beet or Chard	Slovenia	Tanja	Ekološka kmetija Ipavec, Mitja Ipavec	30/11/22
Capsicum annuum	Czech Republic	Měňavka	Marek Kvapil	3/03/22
Citrullus lanatus	Czech Republic	Dračí vejce	Marek Kvapil	15/01/26
Cucumis melo	France	Patoutafaifix	L'Aubépin	7/12/25
Cucurbita pepo	Czech Republic	Lofthouseova zimní tykev	Marek Kvapil	7/02/23
Cucurbita pepo	Italy	Zucchini Novus	Arcoiris s.r.l.	12/08/25
Helianthus annuus	France	Milpa Altus	Milpa Semences	7/12/25
Helianthus annuus	Germany	Hehe	Landesanstalt für Landwirtschaft Institut für Pflanzenbau und Pflanzenzüchtung	21/11/25
Hordeum sativum	Italy	Bop	Azienda agricola Frè di Raviola Giuseppina	12/08/25
Lactuca sativa	Czech Republic	Listonoh	Marek Kvapil	6/01/23
Phaseolus coccineus L.	Slovenia	Šurk	EKOSEMENA	2/12/23
Phaseolus vulgaris L.	Czech Republic	Beefy Resilient Grex	Marek Kvapil	22/09/25
Phaseolus vulgaris L.	Czech Republic	Mozaika	Marek Kvapil	15/01/26
Phaseolus vulgaris L.	Czech Republic	Lofthouse Landrace Beans	Marek Kvapil	3/03/22
Phaseolus vulgaris L.	Slovenia	KIS Bogo	Kmetijski inštitut Slovenije, Infrastrukturni Center Jabolje	22/12/23

>> 60
more and more
notified and cultivated

Seeds & Breeding

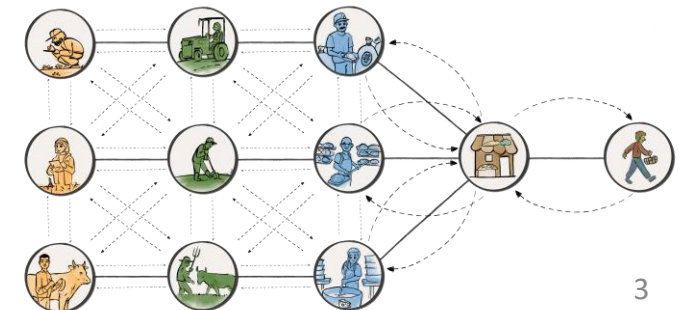
- Cultivar type diversity
- focus on neglected and underutilized crops

- Selection in organic
- molecular tools
diagnostics only
- no GMO/NGTs
- no patents

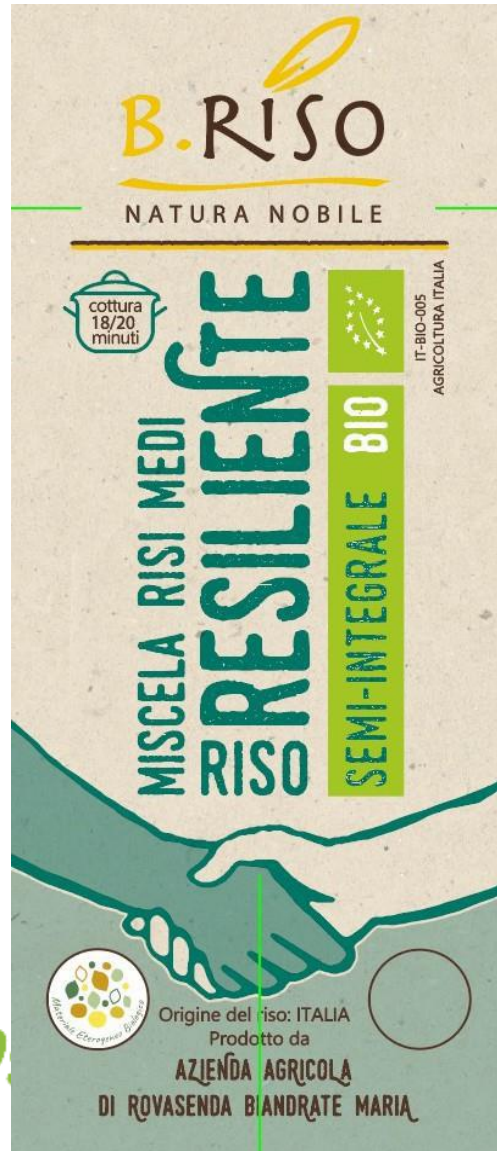
- Breeding for Diversity
- Breeding4intercropping, agroforestry

PARTICIPATORY BREEDING

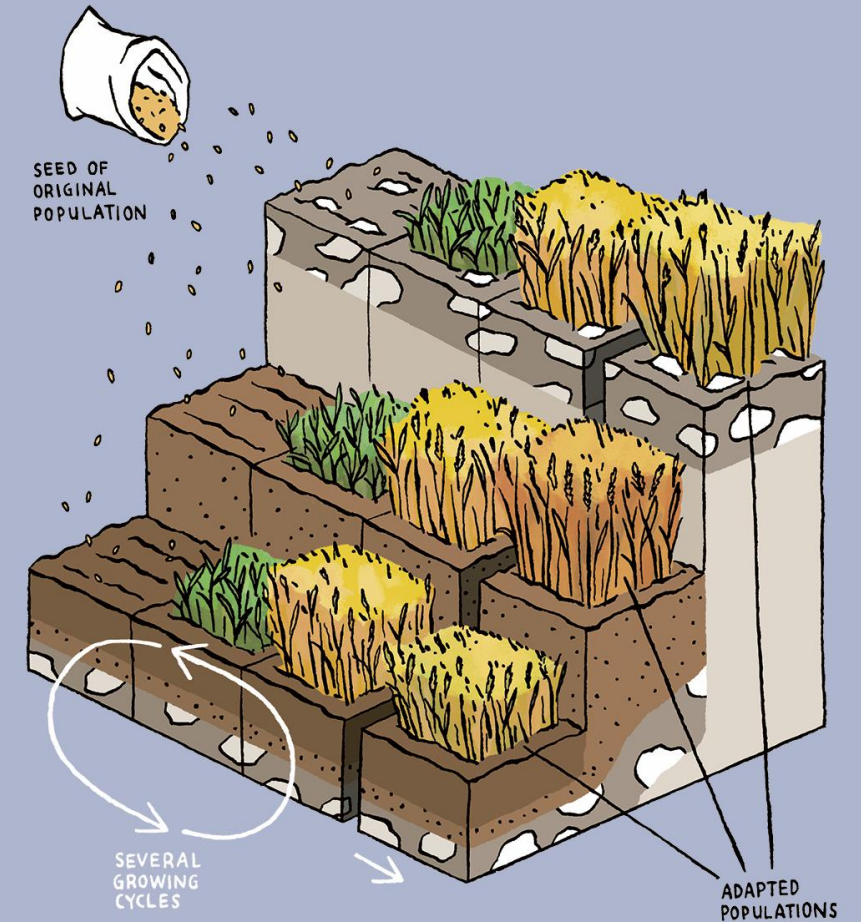
Collaboration and direct involvement across the value chain



Example OHM



Local Adaptation



**For every local soil, the right seed;
for every seed, the right local soil.**

Diversified populations, when grown for several years
in the same environment, will adapt locally.



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Change seed,
grow difference!



Group – Breeding for Diversity

Develop a strategy for OHM development & marketing

1. Select as a group:

- Species – cropping system - region – product/market
- Decide with stakeholders shall be involved, and distribute the roles among participants → indicate their role at the different steps

2. How to get started:

- Who facilitate process, who is practically involved, who has which decision power
- Sourcing of seed (what kind of seed, access to seed, legal obligation, quantity of seed)
- How to create functional biodiversity (phenotypic , genotypic data, crosses, mixtures considering species typical reproduction: outcrossing rate, tripping needed, pollinators

3. How to do selection

- Who facilitate process, who is practically involved, who has which decision power
- Number of sites (very local, shuttle breeding, etc.)
- Balance between natural (evolutionary) selection and human selection
- Which traits to consider (morphology, agronomic, resistance, biochemical, nutrition, taste etc....)

- Which traits you want to select for homogeneity and which traits for heterogeneity

Group – Breeding for Diversity

Develop a strategy for OHM development & marketing

4. Generations for development OHM

- Who facilitate process, who is practically involved, who has which decision power
- How will diversity will develop over generations?
- How to avoid loss of genetic diversity (balance between local adaptation and genetic diversity)
- How to avoid contamination of other genotypes like NGT
- How many generations are needed to achieve local adaptation?

5. Marketing strategy

- Who facilitate process, who is practically involved, who has which decision power
- How to reach out to seed producers / farmers
- How to approach market chain partners

6. Make time line with activities and actors