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Archived at https://orgprints.org/00008584/

BIO SUISSE Considers Hybrid Rye Ban

Hybrid varieties are increasingly and widely used in organic farming, although there has never been a conscious decision to do so. This is especially true for vegetables and maize. For bread cereals, especially rye, the decision can still be taken in Switzerland. Organic rye is grown on only 250 ha, about 20% of which are hybrid varieties. About 60% of the total organic demand is imported.

Why use hybrid varieties?

- Higher yield, which is able to overcompensate higher price for seed (ca. 10 % more yield in simple organic variety trials in 2003/2004[1]).
- Greater homogeneity
- Better lodging resistance
- Better sprouting resistance

Source: www.oekolandbau.de

Why ban hybrid varieties?

Ecological aspects:

- Lower genetic diversity on the field
- Open-pollinated (OP) varieties contribute to *in situ* conservation of rye germplasm
- High genetic vulnerability of hybrid varieties due to uniform cytoplasm (source of male sterility)
- Loss of recessive traits during inbreeding of parent lines (such traits may become interesting in future)[2]

Quality aspects:

- Male sterility in the mother line: is that the progeny for bread cereals the consumer wants?[3]
- The consumer receives the harvest from which the F2 would grow. From many of these grains unsatisfactory, weak or extreme plant types would grow. The consumer does not know that.
- Hybrid varieties support the tendency of present conventional farming to enhance mainly growth, biomass accumulation and nutrient uptake.[2]
- Reduced pollen production due to only partial restoration of male fertility. For biodynamic understanding, this means a loss of warmth quality, leading to lower inner quality. This is one reason why DEMETER decided to ban hybrid cereals (except maize).

Socio-economic aspects:

- Higher yield may contribute to decreasing producer prices and therefore lower returns to the farmer.
- Population varieties can be multiplied by the farmer[3] whereas hybrids create dependency on the breeder.
- Maintenance of demand for OP varieties (otherwise they may be lost soon).

References:

1 DIERAUER, H. (2004) Versuche Ackerbau im Biolandbau im Kanton Aargau: Streifenversuche Roggen. Populationssorten - Hybridsorten für den Bio-anbau? (unpublished)

2 MÜLLER, K.-J. (1996): Winterroggen: Hybrid- oder Populationssorten? Lebendige Erde Nr. 3, 209-218.

3 ASSOZIATION BIOLOGISCH-DYNAMISCHER PFLANZENZÜCHTER E.V. (2003): Leitbild. www.abdp.org/leitbild/leitbild.htm