In future growers will have to distinguish between organic varieties derived from certified organic breeding programmes and organic seeds, which have been harvested from plants grown on organic land by a licensee certified to produce organic seed.

Organic breeding guidelines have been accepted in the IFOAM draft standards in Victoria 2002. They are projected to be proposed for adoption as full standards in the next revision of the IFOAM Basic Standards (IBS).

Currently, no country or farming association has produced guidelines or developed control manuals for organic breeding, although Switzerland will do so by next year. However, talks to breeders have shown that there is not much interest among breeding companies to become certified. The effort and additional costs necessary seem to be too high compared to the additional advantages in the market from being certified. It is often mentioned that conventional breeding programmes and the aims of organic breeding are not so different. Therefore it is much more cost effective to select resistant or low input varieties from conventional breeding programmes, and test them under organic conditions.

In addition, experience from small biodynamic breeding companies has shown that it is very hard for new varieties to be financially viable if they are just sold on the organic market. To reach a break-even point organic breeders also have to promote their varieties to the non-organic, low input production market. Extensive farming programmes of, for example, wheat cover much larger areas of farmland than organic wheat production. It is estimated, that a new cultivar of a cereal has to be grown on a minimum of 20,000 ha of farmland if money from its licence is to cover the costs of the breeding work.

Consequently, under ordinary economic criteria, the small area under organic production in Europe cannot support the production of varieties developed especially for organic growing conditions. Without support from public funds, the important work of organic breeding cannot be tackled properly (Niggli, 2002).

DHS and VCU testing

A well known problem experienced by alternative breeding programmes are the tests necessary for variety protection rights and the official variety trials. Variety protection rights and the respective DHS-trials (tests for Distinctiveness, Homogeneity and Stability of a variety) cost a lot of money, can be very time consuming and may cause technical problems to small breeding companies. While multinational companies can afford to register breeding lines for the DHS-tests at an early stage of their development and
risk some failures, smaller companies can only afford to register their most promising varieties, thus losing up to three years in development time. In addition organic varieties often fail the homogeneity standards because the required uniformity is hard to achieve by population breeding programmes.

The VCU-Test (Value for Cultivation and Use), carried out by state-run research stations, is obligatory for main crop varieties in most European countries. The new varieties must perform better than the average of the three best standard varieties to guarantee progress of breeding. It is obligatory for varieties to pass the VCU-test to be included on the recommended lists or on official national variety catalogues. A lot of organic varieties cannot compete against the high input, high yield standard varieties. Fortunately, more and more VCU-testing is carried out under organic conditions, for instance Switzerland and Germany have now started official organic VCU testing for cereals (Menzi et al., 2002). However, even these organic VCU-tests use relatively high input levels and therefore are often not relevant for average organic farms.

Organic seeds database
To prove the availability of organic seeds, every EU nation has to establish a database for organic seed and seed potatoes. FiBL has run such a seed database since 2000 and is trying to position this database as an official instrument in the EU Member States. The FiBL database (www.organicXseeds.com) lists 4,500 varieties from 110 seed suppliers in eleven countries. Access to the organicXseeds database is free for users. Suppliers pay a fee of 100 Euros per year, independent of how many varieties they register.

The classification of species
From 2004 the European Union will classify organic seed into three categories: Annex 1, ‘Appropriate and General derogation for one year’:

Regulation category: Annex 1
Classification criteria: sufficient quantities of seeds and sufficient number of varieties on offer. Organic seeds obligatory
Criteria for granting exemption: variety trials, on farm trials, conservation purpose. Request in writing needed

Regulation category: ‘Appropriate’
Classification criteria: At least one appropriate variety, adapted for professional use.
Criteria for granting exemption: reasons as above additional reasons, based on agronomic or economic evidence. Request in writing needed

Regulation category: General derogation for one season
Classification criteria: No variety adapted for professional use.
Criteria for granting exemption: Confirmation, database download sufficient. No request in writing
The EU hopes this system will stimulate the market and result in a better provision of organic seeds.

Compilation of Annex 1
Currently, there is an on-going lively discussion about which species should figure in Annex 1, where there would be no derogation for non-organic seeds. What is at stake is the freedom of choice of variety, as in future, only varieties in the organic range will be available to organic growers for species is in this category. Farmers fear losing access to the best performing varieties, which may not be produced organically. One option is that organic growers become seed producers and produce seed of varieties according to the demand of organic farmers. However, this option is only possible where seed producers get a licence from the variety holder, as with many cereals and potatoes. Vegetable and ornamental plant growers do not necessarily have this option as many of the varieties used are F1-Hybrids. As a company secret, breeders do not hand out any parent lines of Hybrids.

In 2002 the European Seed Association (ESA) conducted a survey on the availability of organic vegetable seeds in 2004. Ten ESA members, all leading vegetable seed suppliers, responded to the study. ESA assumed that the market share of organic seed should cover 5% of the whole seed market. From the results of the survey they concluded that 57 of the 77 species surveyed will have enough organic seeds in a sufficient choice of varieties. In addition, ESA promised to increase production for an additional 12 species, mostly herb species, if the regulation is clear enough about them. The ESA-study irritated many vegetable growers as ESA did not publish which varieties they will provide.

Cost increases
The price difference between organic and non-organic seeds can be up to 300%, raising the cost of production between 2 to 8% (Thommen 2002, van der Zeijden 2003). It is not yet clear, whether the vegetable wholesale trade will cover this additional cost. Many organic farmers fear they will be discriminated against by foreign importations, which are produced with cheaper non-organic seeds.

Access to European markets
The international seed market (irrespective of whether it is conventional or organic) for most agricultural main crops and vegetables is subject to very strict rules. Seed of most species can only be imported into the EU if every lot is certified, and if the variety is accepted by the International Union for the Protection of Varieties of Plants (UPOV) and if it figures on an official seed catalogue. Trade laws are set out by EU regulations. Quality systems are set according to OECD (Organisation for Economic Cooperation and Development) Seed Trade Standards and according to the laboratory standards of the International Seed Testing Association (ISTA).

The seed of most main agricultural crops can only be marketed, if the variety figures on the EU Common Catalogue of Varieties of Agricultural Plant Species or on a national variety catalogue.

Many EU Member States have implemented seed trade laws that are stricter than the European standard. To import seed into Europe it is highly recommended that a specialised trader from the respective country is involved.

Andreas Thommen
Annual crop production unit, division of seed and breeding related research, FiBL
Manager of the organic seed database www.organicXseeds.com
e-mail: andreas.thommen@fibl.org

References