

10 Years Organic Vegetable Seed Production at Bejo Zaden

Bejo Zaden is a family-owned vegetable seed company based in the Netherlands that operates worldwide. The company specializes in biennial outdoor vegetables such as carrots, onions, red beet, and *brassicas*. Bejo harvested its first organic seed crop in 1998. Now, in 2008, we have 123 varieties in 40 species available as organic seed.

Breeding

- Self-pollination in cross-pollinating crops can be avoided by certification system (chicory), incompatibility (brassica), male sterility (carrot, onion, red beet). Male sterility is a natural characteristic in most species. Sterility is not an existing characteristic in *Brassica Oleracea*. Therefore, most seed companies use the protoplast fusion technique to get male sterility into this family. However, we work with the incompatibility system/characteristic of the *Oleracea* to avoid inbred plants in the resultant hybrid.
- Bejo organizes trial fields on organic farms in several countries to judge if new crosses are suitable for the organic farmer. The best ones are chosen for organic seed production.

Seed production

- For seed production we look for the best climatic conditions, mainly in France, Italy, the USA, and New Zealand. In France, we have two of our own organic seed production units; in other areas, the seed production is managed by specialist organic seed growers.
- The biggest challenge in organic seed production of biennials is weed control. Most of our crops are in the field from one summer to the following summer. It is an art, and a skill, to reach seed harvest with a clean field.
- Ten years' experience of organic seed production has shown that some lines with poor vigor are difficult to produce organically, whereas other lines perform even better in an organic growing system than in conventional multiplication.

Seed quality

- Bejo works with the same product specifications for organic seed as for conventional seed.
- Seed-borne diseases are eliminated with hot-water treatment, and we have shown that this is as effective as a chemical treatment, and indeed it is the best option against bacterial diseases. We are investigating other physical treatments such as steam. Also, organic seed coatings with microorganisms are under investigation to improve the seedlings' natural resistance system.

Organic seed market

- We need a stronger commitment from the organic movement and the whole chain to the use of organic seed. The organic seed market is developing in northwestern Europe, but it is still poorly developed in the south of Europe and other parts of the world. Larger growers tend not to be eager to use organic seed.

While the organic sector is discussing organic breeding and intending to ban cms from protoplast fusion, most seed companies are hesitant in their commitment to organic seed, because they don't see a clear market perspective.

- A common set of protocols and a level playing field between EU and USDA/NOP should have high priority, as the current situation has a poor influence on trade between these continents.

(During the conference, we daily organize a free bus trip to our organic demo-field half an hour outside of Modena.)