Organic agriculture is the form of farming that is most consistently based on the use of locally produced inputs, with local biodiversity and natural cycles being the driving forces behind production. Cuban Ministry of Agriculture is taking first steps towards organic production in the post-revolutionary Cuba. At the production level, the solution is low input agriculture. As we know, using biological crop protection is still far from the reality of Cuban agriculture. Given the situation in agriculture, in Cuba, these multiple challenges:

1. Organic agriculture in Cuba is based on large-scale, capital-intensive monocultures.
2. In post-revolutionary Cuba, there is an attempt to pay good prices for Cuban organic produce, which is expected to improve the situation of new consumers, and farmers, who produce it. This is the so-called "revolution goes green." However, it is a long process to renovate the production of organoponics. In agriculture, the situation is how important the transition is to "green" Cuban agriculture.

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The main difficulties along the path towards organic citrus production in Cuba are:

- plant nutrition, especially use of nitrogen fertilizers on the highly specialized plantations;
- soil cultivation and ground cover, as well as the replacement of herbicides;
- optimum compost production from the available raw materials;
- mechanization of soil cultivation and fertilizer application.

The key to success in organic citrus production is a combination of compost and undersown legumes. This has been demonstrated by experience in Cuba. Suitable legumes are *Neonotonia wightii*, *Teranmus labialis*, *Stylosantes*, *Alysicarpus vaginalis*, *Conchita azul*, and *Canavalia*, of which the first two were found to grow the best. The greatest limiting factor is the availability of seed. *Arachis pintoi*, for example, is very well suited to organic citrus farming, but virtually unobtainable in Cuba.

Good organic farming need not to be small-scale. Soil cultivation and fertilization are the factors which make organic citrus production expensive in comparison to conventional production. This is particularly crucial for large farms, as they need to build 'compost factories', which require substantial investment (compost mixers, compost spreaders, etc.).

The planting distances between citrus trees and rows are often more generous, which allows better air flow and consequently ensures a lower incidence of disease. There is greater flexibility for (undisturbed) undersown compost production, which allows the farmers to compensate for losses in yield. Overall, Cuba is well prepared for management-intensive organic agriculture.

Project to establish organic citrus production

Since 1997, FiBL has been working on the development of Cuban organic citrus production. A project to establish organic citrus production has been developed and carried out jointly with Cuban institutions (Instituto de Investigaciones de Cítricos and Corporación Nacional del Cítrico) and European investors. In this project, FiBL is overseeing the conversion of several large citrus farms and investigating the marketing of organic citrus juices in Europe. At the same time, investigations are being carried out jointly with the Instituto de Investigaciones de Cítricos on cultivation methods. Goals of the trials currently in development are:

- To evaluate the feasibility of organic production on Cuban organic citrus farms;
- To develop best management practices under Cuban conditions;
- To demonstrate the effects of conversion of organic citrus farms.

Projects are being implemented by Cuban export monopolies in cooperation with European investors. The production of good quality compost is a prerequisite for a successful conversion of Cuban organic citrus farms. Therefore, special emphasis is being placed on developing Cuban organic compost.

The key to success in organic citrus production is a combination of compost and mechanization: mechanization disproves the myth of organic production being impossible to achieve. The key to success in organic citrus production is a combination of compost and mechanization: mechanization disproves the myth of organic production being impossible to achieve.
Planning for conversion at a coffee and cocoa cooperative in the east of Cuba. FiBL advises agricultural enterprises in the south and east on conversion to organic farming.

Organic orange juice for the European market. Organic orange juice from Cuba is sold by the Swiss coop and other European buyers. For Cuba, this is the first time that organic orange juice from Cuba is marketed.

Organic orange juice for the European market.

Compost spreader on an organic citrus farm in Cuba. Compost is the basic fertilizer used on an organic citrus farm. The production of good quality compost is a logistic challenge and demands considerable investment.

Undersown legumes on an organic citrus farm in Cuba. Undersown legumes supply extra nutrients, improve soil fertility and reduce leaching of nutrients. For large farms, however, the associated additional work is often a barrier.

All photos: FiBL