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Cocoa Yield Development of Different Sites, Varieties, Production Systems and Years, in Alto Beni, Bolivia

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Abstract

One of the most essential limiting factors of cocoa (*Theobroma cacao* L.) productivity worldwide is pests and diseases. Each of the major production regions has its specific pests and diseases. Reported yield losses range from minor to almost 100 per cent.

In Alto Beni, located in the Amazonian watershed of the department La Paz, Bolivia, the Research Institute of Organic Agriculture (FiBL) and its local partners are addressing several problems of cocoa producers using a participatory technology development approach. Problems were identified in a participatory way and are, in order of priority, i) to reduce the incidence of pests and diseases, mainly the cocoa mirid (*Monalonion dissimulatum*) and frosty pod rot (*Moniliophthora roreri*); ii) to evaluate the productivity of different cocoa varieties (local selections, introduced clones), and iii) to document the management practices and plantation layouts of high yielding cocoa farmers. In order to develop novel biological pest control measures, both the knowledge of cocoa yield development in the course of the harvest period, as well as the dynamics of pests and diseases are of great interest.

Data from three different research activities of the mentioned project are analysed for yield development, the appearance and the incidence of pests and diseases. The research data are from:

a) On-farm trials in multiple locations which were established in 2004. The performance of 16 cocoa varieties have been assessed for 3 years (2010–2012).

b) Four high yielding cocoa farmers' fields (2012 only).

c) A long-term field experiment assessing the sustainability of five cocoa production systems (2011 and 2012). The trial investigates the influence of monocultures and different agroforestry systems under organic and conventional management on the yield development, among other agronomic, economic and environmental parameters.

Keywords: Cocoa, diseases, pests, production-system, yield-development

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