Economic profitability of organic vs. conventional cotton-based production systems in a long-term field trial in India

Background
› Developing sustainable farming systems on large scale is very important for sustainable development of global agriculture (IAASTD, 2009).
› Scientific results about organic vs. conventional agriculture in the tropics are sparse.

Material and methods
› Semi-arid climate zone
› Vertisol soil, Madhya Pradesh, India (Fig. 1)
› Time: 2007-2010 (conversion phase)
› Agronomic and economic data (plot level)
› Crop rotation (2 years): Cotton-soybean-wheat under biodynamic, organic and conventional (with/without Bt cotton) management (Fig. 2)

Results
› 7%–15% lower yield for all organically produced crops compared to conventional systems (Fig. 3).
› Lower production costs in organic systems, therefore similar gross margins in all systems (Fig. 4).

Conclusions
› Organic cotton production systems can produce high yields at low inputs of fertilizer and capital.
› Crucial factors for the economic profitability have to be considered such as access to knowledge and organic inputs (fertilizers, pesticides, non-GM seeds), existing market demand and certification system have to be considered.

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