Pollination Deficit in Brazil

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COP 11 – Hyderabad – 18/10/2012

What is a pollination deficit?

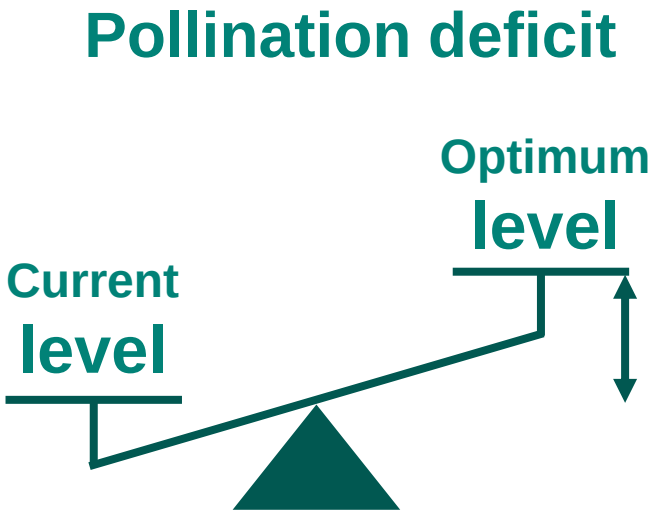
It’s a inadequate pollen receipt

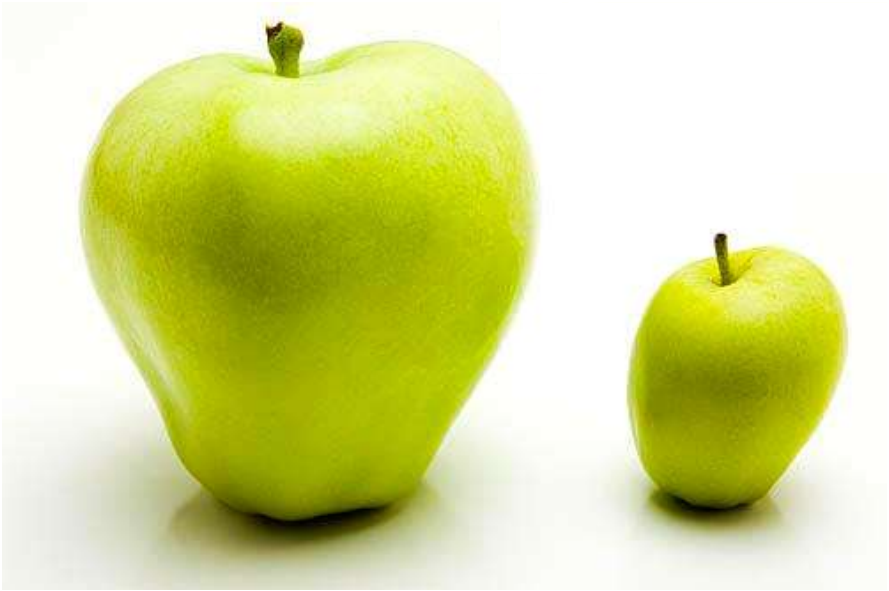
- Quantitative

- Qualitative (self-incompatible species)

- Timing (effective pollination period / stigmatic receptivity)

What is a pollination deficit?





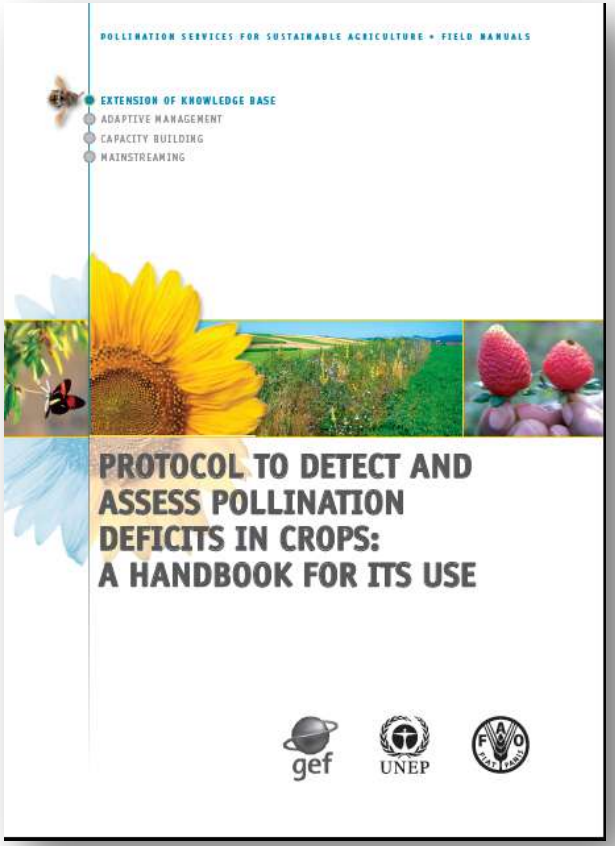
The Global Pollination Project

In Brazil the Global Pollination Project is helping groups of researchers verify the hipothesys that there are pollination deficits in several crops all over the country.

The crops supported by the project funding

- Apple – Dr. Blandina F. Viana - Federal University of Bahia
- Brazilian Nuts
- Canola – Dr. Betina Blochtein – Catholic Univ. of Rio Grande do Sul
- Cashew
- Cotton
- Melon
- Tomatoe

Methodology



The pollination deficit evaluation followed the “Protocol to Detect and Assess Pollination Deficit in Crops – FAO/IFAD”, by comparing seed set from open pollinated flowers versus manual cross pollination

Apple Research

The research team studied an area for 2 years, in the second year they “improved” pollination by putting honeybee hives to help increase pollination.

Apple Research Results

There is a pollination deficit in apple orchards, and they needed 11 hives to stop finding any deficit.

This meant an increase in apple output from 11 tons/ha in 2010 to 22 tons/ha in 2011. A 100% increase in just one year.

Apple Research Conclusions

The observed deficit was caused by few natural areas in the region (just 23.3%) and the low diversity of native pollinators for the apple tree.

Canola Research

The canola research is a little different. We already know from previous researches that:

- When there are bees to visit the flowers there is an increase of 20-32% of seed weight

- When you put 3-4 hives/ha theres a increase of 46% e 36,2% in seed weight

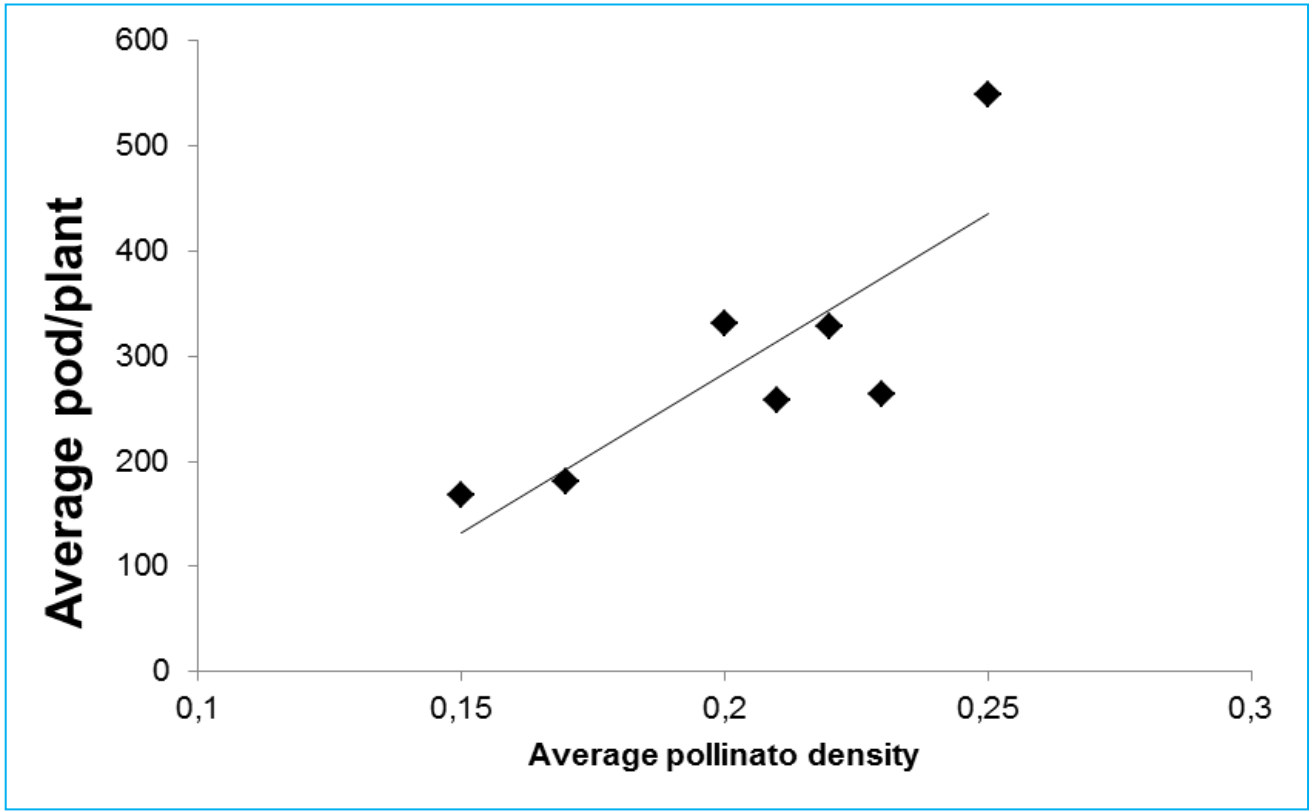
- And when you put 6-7 hives/ha theres a increase of 50,3% in pods/plants

Canola Research

So, Canola research focused on the knowledge that the abundance and diversity of pollinators are influenced by landscape structure.

They studied farms and their production correlating with pollination density, which is direct influenced by the distance of natural areas.

Canola Research Conclusions



Canola Research Conclusions

The density and richness of pollinators explained 71% of the production of pods per plant.

This study shows the influence of the landscape on the assemblage of bees and the positive impact of insects in the productivity of canola;

Pollination deficit in Brazil?

Yes, we have it and in the coming years we will have other studies to understand it deeply and in different crops.

Also in the next years the information about this need to be disseminated in a manner farmers can understand and be open to new approaches on how to organize their land, how to use natural areas (or recuperate some of them) to achieve better and bigger crops.

Project partners

Fábio Leite

Program Management Unit

+55 21 2123-5326

fabio.leite@funbio.org.br

http://www.funbio.org.br

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