

NOTE: This interview about GM crops and bee research, taken from the new report 'Risk Reloaded' is doubly interesting.

First, it suggests that genetically modified Bt maize could be a possible co-factor in bee die-off.

Second, it seems to confirm the recent concern, including pieces in Scientific American and Nature Biotechnology, over the degree of control and interference that the biotech industry and its supporters may be able to exert over the conduct and publication of research.

For more on this issue, see:

http://www.gmwatch.org/index.php?option=com_content&view=article&id=11573:gm-industrys-strong-arm-tactics-with-researchers-nature-biotechnology-

<http://www.gmwatch.org/latest-listing/1-news-items/11406-seedy-research-restriction--global-food-security>

<http://www.gmwatch.org/component/content/article/11311-scientific-american-condemns-restrictions-on-gm-research>

http://www.gmwatch.org/index.php?option=com_content&view=article&id=11556:letting-science-do-its-job

Interview by Christof Potthof with the bee researcher Prof. Dr. Hans-Hinrich Kaatz, University of Halle-Wittenberg

<http://www.mol-ecol.uni-halle.de/staff/kaatz-hh/>

Taken from Risk Reloaded

Risk analysis of genetically engineered plants within the European Union

http://www.testbiotech.org/sites/default/files/risk-reloaded_engl.pdf

(A report by Testbiotech e.V., Institute for Independent Impact Assessment in Biotechnology

Authors: Christoph Then, Christof Potthof, October 2009)

Introduction

In an investigation colonies of honey bees infected with the parasite nosema and fed with the pollen of the genetically modified maize MON810, collapsed much earlier than those colonies which were fed with conventional maize pollen.

Christof Potthof: What did you observe during the investigation?

Prof. Kaatz: In the first year of the field trial designed to last six weeks in that year, the honey bee colonies fed with the Bt maize pollen very clearly collapsed after three weeks. The effects were always the same in the Bt nets. I found this very unsettling because it was not what I had expected; all the previous data from other researchers, which is naturally not transferable, had suggested that the Bt toxin had no effect on honey bees. Then, of course, one has to think about why this should be. It was possible that the causes could be found in our methods; we had used a ten-fold higher concentration of the Bt toxin than there would have been in a natural environment i.e. the Bt content given as the content in the pollen of the genetically modified

plants. Because we had not expected any effect we thought we would "use the tenfold amount to be on the safe side. Also if we used the ten-fold amount and found nothing then we could put our minds at rest about the lower content in the plants." (.....)

Christof Potthof: Did you find any other clues when you examined the dead honey bees?

Prof. Kaatz: Well, of course, we asked ourselves what had happened to the bees. There were dead honey bees everywhere. We tried to find out which factors had caused their deaths. One possible factor was that affliction with nosema was relatively high in the honey bee colonies. That was something we had not expected quite so strongly at that time in autumn. Basically we knew that the occurrence of nosema can be intensified under stress conditions.

Christof Potthof: If the higher occurrence of nosema is connected to stress then it should have appeared in the colonies without Bt.

Prof. Kaatz: Yes, that is how it was. We examined the control colonies without Bt and found no differences. But it was clearly observed that first of all only the Bt group of colonies collapsed and the control group collapsed later on. However, I need to repeat that we have no evidence. At the moment it is nothing more than a correlation, it could be coincidence.

Christof Potthof: But does it have statistical significance?

Prof. Kaatz: Yes. That is indisputable except that we could not clarify the cause. Interaction between microorganisms found in the digestive tract and the target cells for the toxin has been described in the literature. This has been observed in butterflies So thinking in this direction is not erroneous. (....)

Christof Potthof: Have co-factors been included in this type of investigation in the past?

Prof. Kaatz: No, the effect of co-factors has not really been taken into account. One has to say that this kind of investigation is a huge undertaking. In an investigation of a pesticide it is only the active agent factor that is examined. Clearly we need to be very careful here and look much more closely at this aspect in future. Other questions arise too: for instance, is the present testing procedure really adequate in its dimensions to include co-factors? If we actually find evidence that there is some interaction between the effects of co-factors then we need to get down to work. It is a relatively new view point. (...)

Christof Potthof: In the past you have done other honey bee research. Can you tell us a little bit about this?

Prof. Kaatz: Before starting the project with the Bt plants we had already done some research on possible hazards to the health of honey bees due to genetically modified herbicide resistant oil-seed rape and maize plants. We did not find anything negative here. Apart from this we also investigated whether the genes that come from the pollen of the plants could be transferred to honey bees. This is called horizontal gene transfer. Our first step was to find out if genes from

the plants could be transferred to the microorganisms in the digestive tract of the honey bees. Later on we aimed to determine how high the probability was that the honey bees incorporate the genes themselves. One must consider that the crossover of genes is one of the principal mechanisms of evolution. It happens in very many groups of organisms.

It was more a fundamental question of scientific principles than a practical problem. We cultivated the microorganisms with the pollen and the result was that the microorganisms had indeed taken up the pat gene. In the debate on genetic engineering it had always been said that one thing that could never happen was the horizontal transfer of newly inserted genes. We presented the results to the Nature journal and got two expert opinions. One was very positive, thinking it could be published immediately.

The other thought we should do an additional analysis, a so-called Southern blot which would further verify our results. Then he would back publication. We said, "We'll do that." We did the Southern blot and submitted the article again in the belief that there was now nothing in our way. For a long time we heard nothing at all from the editorial team at Nature but in the meantime we were visited by a ZDF (German public television channel) team who asked us about our research. At the time we told them that nothing could be broadcast until an agreement had been reached with Nature and the article had been published. They nevertheless did broadcast a television programme. It was even on the news – all before we had had a final decision from Nature. We intervened strongly whereupon one of the ZDF team said, "Wait a minute, don't you know that your article has been rejected." Until that moment we had had no idea. When we asked him how he knew he said that he had spoken to some people at Monsanto and they had told him. Naturally I was shocked. It is good that they get to know these things, but I find it awful that they should know before the authors know.

Christof Potthof: How extraordinary!

Prof. Kaatz: Well, you know that when the person making the decision has contacts to Monsanto says something ... good. But the editorial team – since they were the only ones to have had both reports - that they pass this on, I find that very annoying. Such a highly respected journal. They shouldn't need to do that. In fact such a review process should first and foremost be.....(falters)

Christof Potthof:discreet?

Prof. Kaatz:very discreet.

Christof Potthof: You probably don't know the names of either of these editors, do you?

Prof. Kaatz: No.

Christof Potthof: Do they know your name?

Prof. Kaatz: Yes, they get the paper and then of course they know the names of the authors. It is not anonymous. Unless you insist. Sometimes that happens. In sensitive cases. I didn't think

our data was so sensitive. We have repeated the experiment. And we have been able to prove that horizontal transfer occurs with a whole series of microorganisms of different kinds. (....)

Christof Potthof: Were your findings published somewhere else later on?

Prof. Kaatz: No, not yet. Since they are something no one wants to hear it is difficult to find an adequate place for them. (....)