

Short Commentary

The experience of one of the first GM crop farmers in Europe

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The purpose of this commentary is not to detail the results of feeding a GMO to a dairy cow herd – which are presented elsewhere in a scientific article – but rather to document the particular historical and sociological context. After the court case pertaining to this affair ended, the author had access to the archives of the courts, to the lawyer’s summary, to the farm archives and to the farmer’s testimony.

Key words: GMO; dairy farm; Bt176; court case.

INTRODUCTION

Gottfried Glöckner was one of the first farmers to defend and promote agricultural biotechnology, believing that it would improve his crop yields and milk production. He was an experienced manager of a conventional dairy farm (80 ha; the maximum cultivated area for GM Bt maize reached 10 ha in 2001) in Weidenhof, Wölfersheim, Hessen, Germany. He also produced conventional crops. He grew the first GM crop as soon as it was commercialized in Europe for food and feed. This was the GM maize Bt176, which produced an insecticidal Bt toxin that had never been tested on mammals – an omission that was not known at the time. He used the engineered plant for the first and longest-term feeding of dairy cows with an agricultural GMO in history, from 1997 to 2002.

A detailed farm-level observation was performed because unusual and important health problems arose in the cows in 2001, when the GM maize was reaching its maximum level of 40% in the diet (Glöckner and Séralini, 2016). These problems were not at first believed to be associated with the GMO. Only after investigation by the farmer during the following year was a link suspected. Detailed data were kept regarding the feed, blood, and urine and milk analyses, and regular veterinary

inspections were carried out. The proportion of healthy cows in the herd decreased to only 40% in 2002, coinciding with the progressive increase in the percentage of the GMO in the diet. At that time up to 10% of deaths were preceded by a long-lasting paresis syndrome, without hypocalcemia or fever, but with biochemical signs of kidney failure, as well as mucosal and epithelial problems. No microbial origins for the diseases were found, but the specific Bt DNA was detected in milk (Glöckner and Séralini, 2016). The presence of the GMO in the diet was during the described period the only intended management change on the farm.

The dairy farm closed in December 2004. All the remaining cows were sold at this time because of the health problems following the introduction of the GMO in the diet, causing an important economic loss for the farm from 2001. At this time, the GM maize had been very limited to 12 tons (around 500 ha) of seeds per year on the German market. Bt176 maize was officially withdrawn by the European Union in 2007.

First court case

On 2 February 2002, the farmer wrote to Syngenta, the developer of Bt176 maize, stating that the diseases were linked to the GMO in the diet. On 21 February his lawyer advised him to stop feeding the cows with this diet. After

Abbreviations: **GM:** genetically modified; **GMO:** genetically modified organism; **Bt:** *Bacillus thuringiensis*.

a round table at the German Ministry of Health in Berlin on 13 March 2002, official test materials were sampled and the lack of microbial origin for the diseases was confirmed by various universities. Syngenta phoned and visited the farm, concluding that they did not believe the problems were due to their GMO, though they offered no other explanations. After numerous oral and written requests by the farmer from 2001, in April 2002 Syngenta paid €43,224.62 out of the €97,374 lost by the farmer during 2001, which represented the costs of the deaths and veterinary analyses, as well as the losses in milk production and feed. However, the company did not detect the presence of the Bt toxin in the feed, although the GMO was genetically modified to produce high levels of this toxin, and although it tested positive in an analysis by an official laboratory in 2002 (Glöckner and Séralini, 2016, Annex). In order to avoid a court case, in January 2003 the representative of the company finally proposed to the farmer a compensation payment amounting to 50% of his losses. For 2002 alone, these were already estimated at €143,213.60. The farmer refused the informal proposal (see below) and sued Syngenta.

The case went to court in December 2005 and was completed in the same month (District Court Giessen, judgement of March 7, 2007, Az. 3 O 564/05; and the appeal in Higher Regional Court Frankfurt, judgement of February 6, 2009, Az. 2 U 128/07). After the court case, the company proposed a settlement whereby they would pay at first €70,000 and then €100,000. The farmer finally lost the case in 2009 over a technicality: the lack of the signature of the farmer's wife on a document. They had been divorced in 2005, after she left the family (including three children aged 17, 15 and 13) and the farm in 2000, forming another couple.

A second personal court case overlapping the first

The second court case overlapped with the first and ended with the farmer being jailed from 2006 to 2007. His wife complained for the first time in May 2003 (District Court Friedberg, Hessen, Az. 605 Js 673/03 and appeal in Giessen Regional Court in March 2005 8 Ns 605 Js 673/03) of violence by her husband "in October 1999 or the new year of 2000", she said in court, without medical or other testimony. Just before this complaint was filed, Syngenta had pressured the farmer in January 2003 to accept compensation of 50%. After the farmer refused and said that he would sue Syngenta, the company's representative told him that something was going wrong with his wife. Up to this time, the farmer's wife had made no complaint of violence. The ex-wife also appointed a new lawyer at that time. Gottfried Glöckner was unfortunately absent from the Higher Court in Frankfurt in November 2005 (General Prosecutor, ref. 2 Ss 209/05) because his lawyer told him it was not necessary to

attend, adding that he, the lawyer, would represent him. But the lawyer did not attend court either; this could have led the judge to pronounce an unusually severe sentence. The farmer then went to jail for one year for violence towards his wife – violence that he never acknowledged. He subsequently changed his job because his part from the sale of the farm by his ex-wife was confiscated by the court. This was the outcome of an unsuccessful GM feeding trial on the personal level for the farmer.

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