CropLife Foundation
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Restrictions on Fungicide Use Causing Decline in Organic Potato Production in Europe

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Copper

Late blight is an annual problem in European potato fields. Conventional growers use synthetic chemical fungicides to control the disease. Organic growers are prohibited from using synthetic chemicals, but have been allowed the use of fungicides that contain copper. Copper sprays have been shown to raise organic potato yields by 25% over untreated plots [1]. The additional yield resulting from copper-based fungicide protection is worth between 15 and 45 million EUROS per year to EU organic potato growers [1].

Because of concerns about the buildup of copper in the soil from prolonged use, the E.U. has restricted the use of copper fungicides. The use of copper is also regulated by private standards of producer's associations (the Demeter label allows no copper products). In 2001, an EU limit of 8 kg/ha was set. In January 2006 the EU imposed regulations on organic farmers to use no more than 6 kg of copper per hectare per year. In Scandinavia and The Netherlands, copper use is forbidden in organic as well as conventional farming. Under organic regulations in Germany and Switzerland copper applications are restricted to lower levels than those permitted by EU regulations (3-4 kg/ha).

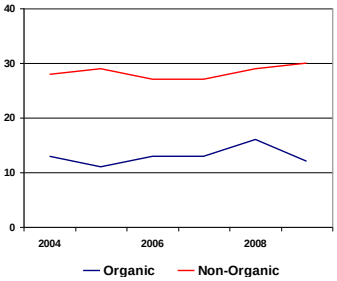

Figure 1: Swedish Potato Yields, 1000 Kg/Ha

One concern is that an early outbreak of the disease encourages the formation of a fast spreading and massive epidemic, which ultimately cannot be controlled with the allowable amount of copper. A survey of French organic potato growers revealed that in a year with low blight pressure, an average of 4.2 sprays containing 3.4 kg of copper are used per hectare [2]. In a year with high pressure, 9.9 sprays are needed with a copper content of 8 kg/ha. The total copper use per hectare in 2000 in organic potatoes in France, Germany, Switzerland and the U.K. varied between .2 and 15 kg/ha [1].

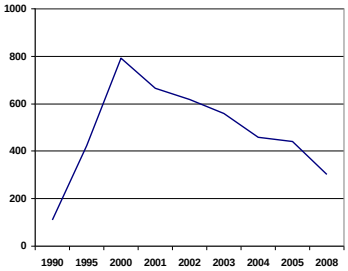

Figure 2: Organic Potato, Finland (Ha)

Yields of organic potatoes in Europe are typically 50% lower than from conventional fields with losses to late blight causing the most significant reduction (Figure 1). In countries where copper is prohibited, 100% losses often occur. 2004 was a catastrophe for organic potato crops in Finland; no marketable yield could be harvested except for very early fields [3]. Acreage of organic potatoes declined by 25-30% in Sweden and The Netherlands during the period 2001- 2006 while in Finland the decline has been over 50% [4] (Figure 2).

The ultimate aim in the E.U. was the complete prohibition of copper use in potato production. In order to overcome the expected production problems in organic potatoes without copper use, the 6 million EURO EU project "Blight-MOP" started in 2001 with a Final Report in December 2005 [1]. None of the wide range of alternatives tested gave an acceptable level of late blight control and few were any better than untreated controls.

References

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