

English translation from German original, September 16th, 2009

Copper quandary

greenpeace magazin 4.08

May organic farmers keep using a heavy metal against fungi?

European wine was saved by a heavy metal. The Frenchman Millardet developed the "Bordeaux mixture" to protect grapevines against downy mildew, which had been brought in from the USA. That was in 1885. Since then copper has been considered a nearly perfect means to combat fungi. However, the German Federal Environment Agency (UBA) would like to ban this fungicide from fields because it also has a poisonous effect on the soil. The dilemma: The ban would primarily affect organic farming.

The problem is well known. The reddish metal does not degrade but rather accumulates in the soil and harms the organisms that live there. It reduces biodiversity and drives away useful animals such as earthworms. For quite some time, this was of no concern. In some regions in the 1960s, up to 60 kilos of copper landed in every hectare on a yearly basis. Today, one tenth of that figure is the most that is permitted throughout the EU, while German organic farming associations have agreed on a maximum of three kilos per hectare.

The greatest consumers in Germany are the conventional hops farmers. In 2007 they sprayed fungicides containing around 150 tons of pure copper. Even though all the organic farms combined use only about one tenth of this amount, the sector faces a dilemma. "No organic farmer likes using agents that harm the soil they work with and live on," says Peter Röhrig from the Organic Food Growers' Association (BÖLW). In contrast to their conventional colleagues, however, organic farmers cannot resort to chemical/synthetic agents to keep the fungi plague at bay. They need copper preparations to combat late blight on potatoes, apple scab, and the dreaded downy mildew on grapes and hops. Conventional farmers also like using the heavy metal, because fungi do not develop a resistance to it – which they do to synthetic agents.

The EU wants to make a decision this year on whether copper preparations may be used in the future. Regulatory agencies from all the member states are currently commenting on a provisional evaluative report that is critical of copper. This debate is not new: The EU wanted to ban copper in agriculture back in 1992, but kept granting extensions. According to representatives of organic farmers from all the associations, there are no effective alternatives on the horizon – despite intensive research. Even the rigorous Demeter Association for organic/dynamic farming relies on copper preparations for grapes, hops and apples, albeit always with the caveat "no more than is necessary".

"If copper were banned, organic hops farming would be brought to a complete standstill," says Otmar Weingarten, the managing director of the Association of German Hops Planters (Verband der Deutschen Hopfenpflanzer). Stefan Kühne, who heads the organic pesticide department at the Julius Kühn Institute

(JKI), a newly created federal crop research center, warns against thwarting organic farmers: "More and more grape growers want to switch to organic farming – but that won't happen without copper." He considers it absurd to destroy organic sectors with all their benefits for the environment solely on account of a single agent. And an agent, moreover, that is a natural substance.

This argument is considered outrageous by staff at the Federal Environment Agency (UBA). "Just because copper occurs naturally is by no means an indication of harmlessness, especially when it is used in large quantities over lengthy periods of time," counters UBA scientist Tobias Frische. And even though the greatest sins were committed in the past: "Copper is now in the soil, and farmers keep adding to it – a creeping toxicity." Although it probably does not harm humans, the upper soil load has been reached multiple times over. Copper has to be eliminated from the crop protection arsenal over the medium term at the latest. As Frische explains, "Of course we see the environmental benefits of organic farming, but copper is at odds with the very principles held by the farming associations." As far as soil protectionists are concerned, it is no longer acceptable – an even less so by organic farmers – to use agents that are considerably more harmful than modern chemical/synthetic substances. The UBA is therefore calling for copper to be banned.

Manfred Krautter, a chemistry expert at Greenpeace, sees the situation in similar terms: "A heavy metal simply cannot be a solution for organic farming." He is calling on the sector to devote more intensive research to alternatives, or to plant more fungi-resistant crops. Some fruit farmers are in fact switching to resistant types, known in German as "Piwis" (*pilzwiderstandsfähig*). Among apples, for example, the Topaz has already established itself on the organic market. For vineyards, however, it's not that simple. Even though the "Piwi" red Regent and white Johanniter grapes are gradually becoming better known, Grauburgunder and Cabernet Sauvignon grapes are still preferred.

And so organic farmers are hoping for what the UBA fears – that the EU bases its decision about copper on economic as opposed to environmental grounds.

Text: Claudia Hönck