

COULD PHOSPHITE BE A NEW FUNGICIDE FOR ORGANIC FARMING?



Bernhard Speiser



Lucius Tamm

Courtesy of FiBL

Bernhard Speiser and Lucius Tamm, FiBL, Switzerland

“Potassium phosphite, also called «phosphonate», is a salt of phosphonic acid with the formula K_2HPO_3 . It should not be confounded with phosphates, nor

with the organophosphorous insecticides which are also called «phosphonates». Potassium phosphite can be used as a fungicide against oomy-

cetes in various crops. In the early 1990ies, it was extensively tested on organically grown grapevines in Switzerland. It was effective against downy mildew (*Plasmopara viticola*), and blocked the disease up to 3 days after infection. Phosphite was mobile and very persistent in plants and could be detected in grapes harvested one year after the last application. Analyses of 53 wine samples revealed that the treatment inevitably leads to phosphite residues in wine, usually ranging between 5000 – 10000 ppb phosphite. Phos-

phite residues were also found in other crops (e.g. potato, celery) treated with potassium phosphonate. From a toxicological point of view, these residues are of no concern. However, consumers of organic wine expect to buy a «natural» product, and we assume that they would not approve the presence of such quantities of fungicide residues in organic wine. Currently, potassium phosphonate is not authorized as a fungicide for organic farming in the EU, and we do not recommend its use in the future”.

certainly necessitate a bit more transparency. Some suppliers firmly believe in the future of the market while others are not so enthusiastic: “it is a sort of commodity, we have one product but it is not a strategic line for us”, says one Italian supplier while others, e.g. Biolchim (see interview) or Tradecorp (Spain) are expanding their range. The mood seems to be as contrasted in North America, with one big supplier of specialty plant nutrition products saying “we are presently not involved in phosphites- we have been presented with a number of opportunities but have thus far chosen to stay with other foliar products and biological disease control agents. The market is pretty crowded and the margins are pretty thin for a number of these products”. The future will tell who was right, especially after the lion’s share of the sup-

ply to most processors has been taken over by Chinese manufacturers (currently already supplying a number of Italian processors and a good part of the spanish ones) although it seems that the performance of the cristalline raw material coming from China (then dissolved by European importers to make a liquid finished product) is not as good as that of liquid product directly obtained through some different manufacturing processes. In the meantime, distributors and growers should be aware that phosphite fertilizers, if not formulated and used correctly in consultation with professionals, have a significant potential to be phytotoxic whereas if formulated and used correctly they may well fit in an optimized crop cultivation package, especially for selected cash crops. ■