

- for problems with hard water

Hard water is a big and expensive problem many places in Scandinavia and Eastern Europe. Water hardness is determined by a number of cations, but the two that create the biggest problems are Calcium (Ca) and Magnesium (Mg). The reason these two are in focus is they produce deposits in the sprayer when precipitated from the spray liquid. Since they both bond with CO3, the water pH is high.

We have worked intensively on developing the product Bio pH Control. The product composition ensures that the pH in the spray liquid is lowered and the harmful effects of $CaCO_3$ and $MgCO_3$ are neutralised.

Traditional pH-lowering products are composed of one or two active ingredients. Bio pH Control contains four active ingredients/additives which, in addition to lowering the pH, ensure that both pesticides and micronutrients are absorbed by the plants quickly and effectively. The additives are unique to Bio pH Control. Practical experience shows that pesticide use can be reduced by 30% when hard water is treated with Bio pH Control.

Several BioNutria products come with Bio pH Control pre-mixed; these are: Bio Mangan 170 NSP, BioCrop Opti^P and BioCrop Potato^P. Depending on the water hardness, it may be necessary to add extra Bio pH Control, to ensure the optimal pH and thus reap the full effect of both pesticides and micronutrients.

Not all pesticides work optimally at a low pH. Therefore, always know the optimal pH for the pesticides you are using. Then adjust the spray liquid's pH to the optimal level using Bio pH Control.

We recommend buying a pH meter. It costs a couple thousand kroner and may end up being a very good investment.

Getting started with Bio pH Control

If you have hard water, you are sure to have deposits in your sprayer, even if you use sprayer cleaner. Most - if not all sprayer cleaner products - are alkaline and do not clean/dissolve Ca and Mg deposits.

Therefore, it is very important to clean the sprayer effectively with Bio pH Control before using Bio Mangan 170 NSP, BioCrop OptiP and BioCrop PotatoP, and before starting the actual spraying.

Cleaning the sprayer

- 1. Pour 200–400 L of water in the sprayer.
- 2. Add 0.5 L Bio pH Control/100 L water and let it circulate in the sprayer for 30 minutes.
- 3. Remove nozzles and filters and then flush out the liquid.
- 4. Repeat the process if necessary.

After cleaning, the sprayer is just as clean inside as a new sprayer.

How to use Bio pH Control when spraying Bio-Nutria micronutrients and pesticides

- 1. Pour the desired amount of water in the sprayer and start mixing.
- 2. Add Bio pH Control in the recommended dose normally between 0.10-0.30 L/100 L water.
- 3. Add BioNutrias micronutrients (but not boron).
- 4. Add pesticides (Betanal can also be used without any problem).
- 5. Add boron (where needed).

You are welcome to contact our Agro Team with any questions you may have; for contact information, see bionutria.dk



Reduce **pesticide** use

Bio pH Control produces surprising and impressive results when added to the spray liquid. Glyphosate spraying, for instance, produces a visible effect – total wilting of weeds – in a matter of 2–3 days. Spraying with Betanal and Boron is problem-free, and spraying is highly effective. And the same pattern is seen in other spraying. Multiple pesticides have a rapid half-life* at a high pH. That means their effect is reduced substantially in a very short time, and the spraying results are poor.

Practical experience from a long list of customers shows customers can reduce their pesticide use by 30% when they add Bio pH Control. Many of these farmers will try to achieve a 40% reduction in 2019.

The price depends on the water hardness, but is typically between DKK 4–5/100 L of water.

Significant financial and environmental benefits

The positive financial effects are easy to calculate. Moreover, you are spared the decline in crop yield resulting from the inadequate effect of herbicides/fungicides.

Last, but not least, are the substantial positive environmental benefits.



* Not all pesticides work optimally at a low pH. Therefore, always check the optimal pH for the pesticide(s) you use. Then adjust the spray liquid's pH to the optimal level pH using Bio pH Control. We recommend buying a pH meter. It costs a couple thousand kroner and could very well be your best investment.

We are always at your disposal to offer sparring and advice on nutrients and are happy to pay you or your professional interest group a visit.

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