

Phosphorus quota challenges Danish dairy farmers

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A new Danish legislation introduces a quota for phosphorus application per hectare. This means that Danish dairy farmers need to strengthen their focus on their use of phosphorus. Inspiration from the rest of Europe is used to find solutions to this challenge.

Denmark has changed the regulation of animal production which previously mostly focused on nitrogen. With the new regulation, both phosphorus and nitrogen quota are in the spotlight. The phosphorus quota is primarily affecting dairy farmers using a Danish derogation from the nitrate directive. The derogation entails that farmers may increase the amount of nitrogen used from 170 kg to 230 kg per hectare. But these farms must follow special guidelines regarding the choice of crops, cultivation and measure the nitrogen and phosphorus contents of the soil. Approximately a third of the Danish dairy farmers produce under the derogation from the nitrate directive.

The new phosphorus regulation requires that a normal dairy farm has a phosphorus quota of 30 kg phosphorus per hectare. On the dairy farms with a derogation, the quota is 35 kg phosphorus per hectare. The phosphorus content of the mineral fertiliser is included and represents a serious challenge for these farms.

Limitations on the use of starter fertiliser for maize

Normally, a mineral fertiliser is placed underneath the seed when sowing maize. With the phosphorus quota, the farms receiving a derogation will not be able to purchase starter fertiliser for maize without reducing the application of cattle manure to the crop. The value of the starter fertiliser is approximately 70€ per cow. Since the Danish farmers have a high focus on finances, 70 € per cow is a considerable part of the total income.

The phosphorus quota pushes farmers to find a new management practice to substitute the use of phosphorus as a starter fertiliser. One solution could be to spread slurry in the maize rows before sowing and therefore replacing the mineral fertiliser. Looking across the border, a system from Germany has been identified, which is able to deposit slurry in two levels. A GPS, which is placed on the tractor, allows the seed to be placed directly over the slurry. In 2019, Danish farmers and agricultural contractors will be testing this system.

Inspiration from a EuroDairy workshop

A EuroDairy workshop focused on the estimation of the mineral balances. During this workshop, the Danish representatives were inspired by the Dutch approach in the ANCA tool (Annual Nutrient Cycling Assessment). In Denmark, the milk and arable production are estimated separately. In the Dutch tool, the assessment is joined, giving a better overview and possibility to act on a total farm value and thereby identifying ways to increase the phosphorus utilisation.

The workshop also showed that the Dutch concentrates had a lower content of phosphorus compared to Danish concentrates. By implementing this in Denmark, farmers would face improved conditions when handling the phosphorus quota.

Research Themes

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