

Increasing levels of phosphate in farmland soil

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Phosphate levels in arable farmland have risen over the past thirty years, despite the restrictive policy on manure. This is the conclusion of Alterra (part of Wageningen UR) researchers in the journal *Soil Use & Management*.

The researchers analyzed [phosphate](#) data covering the past seventy years. A striking feature is the large regional differences that have arisen since the 1930s: phosphate levels can be twice as high in some regions compared with others. There is a clear link with the availability of manure in the surrounding area and with the market value of the crops grown. The more manure there was available, the more phosphate got into the soil. A high market value for the crops also led to more phosphate in the soil.

Average levels of phosphate in farmland soil have increased over the past seventy years. Levels in arable land grew by as much as 33 to 40 per cent in the past thirty years. However, phosphate levels in grassland have remained the same since the 1970s.

The introduction of the policy on [manure](#) in 1984 has clearly not had an effect on phosphate levels in arable soil. Arjan Reijneveld from Alterra is not surprised. 'On average more phosphate was being added to the land than was being taken from it during the period we studied. This surplus may gradually have been getting smaller over time but there was still constantly more phosphate entering the [soil](#) than there was being extracted via crops.'

However, he does find it strange that phosphate levels in grassland have remained constant. 'The phosphate surplus must have gone somewhere', says Reijneveld. 'Perhaps it is deposited in deeper layers, but unfortunately we don't have any data for them.' Reijneveld and his colleagues expect phosphate levels in arable land to remain relatively high in the decades to come. That means there will still be a risk of phosphate getting into the surface water for some time to come.

Provided by Wageningen University

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