Proposed new fertiliser regulations for the European Union

The European Commission has recently proposed some new regulations dealing with fertilisers. These are designed to stimulate the use of recycled fertiliser products within the European Union and reduce cadmium levels in fertilisers. It is important that these proposed changes are understood within the context of their derivation and application.

A review of fertiliser regulations in Europe has been underway for many years, but in March this year the European Commission launched its proposal, which has been the source of much subsequent discussion. This proposal has been launched within the framework of the "Circular Economy Package" which is meant to help European businesses and consumers transition to a "more circular" economy where resources are used in a more sustainable way, including through greater recycling and re-use, thereby benefitting both the economy and the environment.

Currently about 5% of biowaste is recycled within Europe, but it is estimated there is potential for recycled biowaste to provide for up to 30% of the market currently supplied by inorganic fertilisers. The proposed regulations will set common rules for converting biowaste into materials that can be used to make fertiliser products. For access to free trade across European Union member nations, fertiliser products will have to comply with these rules and be "CE Marked" as such.

A second objective of the proposed regulations is to reduce cadmium levels in fertiliser to reduce cadmium input into soils. For phosphate fertilisers to meet CE Mark specifications, their cadmium levels will need to be less than 60 mg/kg P₂O₅ initially, reducing to 40 mg after three years and to 20 mg after 12 years. Note that in New Zealand and Australia, cadmium levels in phosphate fertilisers are designated in terms of elemental P rather than P₂O₅. The proposed European values are thus equivalent to 137, 92 and 46 mg Cd/kg P respectively. To put this in perspective, the average cadmium concentration in phosphate fertilisers used in New Zealand is currently about 184 mg Cd/kg P², which is close to the levels accepted by the European Union’s scientific panel’s opinion which, at moderate use rates, may provide for no further soil accumulation.

European regulators acknowledge that going to the lowest cadmium option is not feasible in the absence of a reliable and cost-efficient way to remove cadmium from phosphate rock at an industrial scale – a process known as decadmation. Furthermore, this would have severe economic consequences for producing countries in Northern Africa and the Middle East, which would be shut out of the European market as their phosphate deposits contain significantly higher amounts of cadmium than would be allowed under the new regulations. This situation would be incompatible with European Neighbourhood Policy objectives. While such proposed low cadmium limits would be a very strong incentive to invest in decadmation, the construction and operation of such plants at industrial scale are yet unproven and will not be feasible in the short-term.

These cadmium targets are thus to a large degree aspirational at this time. Furthermore, under the European Commission’s proposal, "optional harmonisation" would apply to the regulations. This means that fertiliser manufacturers can either choose to CE Mark their products, making them freely tradable in the single European market, or have them traded according to national standards based on mutual recognition in the single market. Hence, the CE Mark standards are optional, and a parallel pathway is provided.

The New Zealand fertiliser industry is monitoring developments in Europe with interest. It supports the increased use of recycled products where economically feasible. Here in New Zealand there has been a significant increase in the use of dairy effluent for its nutrient value. However, the opportunity to utilise recycled waste products is even more limited than in Europe. The industry also strives to support farmers who are using phosphate fertilisers at competitive prices with cadmium levels that are consistently below the limits agreed by the national Cadmium Management Group.

EDITORIAL

Our industry’s position on importation of phosphate rock from Western Sahara

By way of background, the Fertiliser Association of New Zealand’s (FANZ) two member companies, Ballance Agri-Nutrients and Ravensdown, import a portion of the phosphate rock used in New Zealand for the manufacture of fertilisers from OCP Group – a Moroccan, state-owned company, which sources some of its phosphate rock from a mine in Western Sahara. The fertiliser industry closely follows events in Western Sahara and within the United Nations in respect of the territorial dispute in Western Sahara and maintains an on-going process of due diligence regarding political developments in the region and their implications for fertiliser supply. This is a complex issue with a long history, where, due to the diversity of local perspectives, the rights and wrongs are not clear. This is a reason why the issue has been so difficult to resolve.

We are confident that domestic and international law currently permits the import of phosphate rock into New Zealand sourced from the territory of Western Sahara. We are also aware of current actions before the European Union judicial system calling into question the legality and application of European trade agreements with Morocco involving products sourced from Western Sahara. These actions are ongoing and a complete resolution is not expected to be reached for some time. In the meantime, we continue to actively monitor developments. At present, we do not consider there is any reason to alter our position as we are not acting illegally, under either domestic or international law, by sourcing phosphate rock from Western Sahara, pursuant to arrangements with OCP.

The issue with Western Sahara has ethical as well as legal ramifications that we also consider on an ongoing basis. In this regard, OCP continues to affirm and provide evidence that it is meeting its obligations under international law and, in particular, the relevant Resolutions of the United Nations Security Council and General Assembly, that it is not acting in disregard of the interests and wishes of the local population of Western Sahara. OCP is a significant employer of local inhabitants of the region and has demonstrated its support for these people through its continued investment in the local community. In addition, FANZ member company representatives have recently visited OCP’s operations in Western Sahara and can confirm that OCP has undertaken significant investment in the local community including in housing, schools, healthcare centres, social facilities and, more recently, the construction of a new university campus.

The New Zealand fertiliser industry recognises that Western Sahara is subject to a long-running territorial dispute involving a number of complex legal and ethical questions. We strongly believe that the local inhabitants of Western Sahara should benefit from the resources of their territory, and that any activities involving these resources should be undertaken in their best interests and for their benefit. We thus continue to exercise due diligence on this issue and continue to receive a variety of information from OCP on their business practices, including key indicators on employment of local people and local community investments.

We are aware that the United Nations Secretary General has appointed a special envoy to seek solutions in Western Sahara. We are highly supportive of this initiative, as it is difficult for us to assess the ethical and legal complexities of the situation in Western Sahara on our own. We consider that the United Nations is the most appropriate organisation to make judgements on situations like this.

We believe that a timely solution to the territorial dispute in Western Sahara would be of benefit to all. It does not please us that the issues persist, but we do not believe there is sufficient justification for pre-emptive action by the industry, such as terminating our contracts for supply. Phosphorus fertilisers are vital to New Zealand’s agricultural sector and represent an important source of income for the local inhabitants of Western Sahara. We strongly believe that neither of these benefits should be discarded without thorough consideration of all relevant matters by appropriate authorities, and that termination of purchases of phosphate rock from Western Sahara would likely contribute to the erosion of economic and social stability in the region, without providing a pathway to resolve the issues.
Research investments — a long history of benefits

One of the far-sighted research investments which is helping us to better understand the role of fertiliser in pasture production is associated with the long-term phosphate fertiliser trials at the Winchmore Research Station on the Canterbury Plains. These trials, established 64 years ago, provide a long-term record of fertiliser history on sheep-grazed pasture. It is one of only a handful of similar long-term agricultural research facilities globally. This site is becoming more valuable and relevant to New Zealand as each year passes, providing a unique perspective of trends over time under conditions specific to New Zealand. The fertiliser industry funds the annual maintenance and data collection at the site, including soil and pasture assessments. The industry’s support for this research facility has so far ensured its availability to meet current and future science needs.

The fertiliser trials at Winchmore were initially established to study the response of grazed pasture (white clover/ryegrass) to increasing rates of superphosphate fertiliser. The original fertiliser treatments at Winchmore included a control (nil application of phosphate fertiliser), superphosphate applied at 188 kg/ha/yr and superphosphate applied at 376 kg/ha/yr. Thirty years ago two additional treatments were included: 250 kg/ha/yr of superphosphate and application of an equivalent rate of phosphorus using reactive rock phosphate.

The results from these fertiliser trials have firmly established the benefits of superphosphate in significantly increasing pasture production under New Zealand conditions. The latest results for the 2015/16 season show that the application of phosphate fertiliser increased pasture production by 77% to 98% and confirm that for Winchmore soils under grazed sheep production there is no advantage in using more than 188 kg superphosphate/ha/year. The results also show that 92% of maximum pasture production was achieved at an Olsen P of 25 μg/ml.

Many of the issues identified as important research topics today could not have been envisioned back in 1952 when the Winchmore trials were first established, and the value of these trials now go well beyond what was originally conceived. The long-term nature of the measurements made at the site, together with the foresight to archive soil samples annually, provide the ability to study long-term trends under different fertiliser conditions. The issue of fertiliser-derived soil contaminants was not anticipated back in 1952 and is a good example of the important insights made possible by long-term experiments of this kind. The Winchmore site has provided the important ability to “go back in time” and track changes in soil cadmium levels over decades, and correlate these to fertiliser use. The work has shown how soil cadmium levels increased during the 1950s–1990s when superphosphate produced from Nauru rock phosphate was mainly used, and how it appears that soil cadmium levels have now plateaued as the industry switched to lower cadmium phosphate fertilisers from the mid-1990s. These trials are also providing insights on long-term changes in soil carbon. For example, work by Condron et al. has shown that levels of soil carbon are very similar for the various fertiliser treatments, despite greater production under the fertilised treatments. This is attributed to accelerated decomposition of organic matter inputs linked to improved pasture quality and increased earthworm activity. The trials also clearly show that earthworm numbers increase with increased soil fertility, biomass production and turnover associated with the application of superphosphate fertiliser.

The Winchmore long-term fertiliser trials have contributed significantly to our knowledge of pastoral agriculture in New Zealand. Well over 70 papers based on information gathered at the site have been published since 1975, and these have been cited well over 900 times. A special edition on Winchmore was published in the New Zealand Journal of Agricultural Research on the 60th anniversary of the establishment of the trial.

Other long-term trial sites supported by the fertiliser industry over the years have included those at Whatawhata, Te Kuiti and Ballantrae. Of these, the hill country trial at Ballantrae established in 1975 is still operating. It provides for contrasting topography and conditions to those at Winchmore on the Canterbury plains. The pasture assessment at Ballantrae supported by the fertiliser industry was reported on in our previous issue, confirming once more the value of science supporting the essential role that fertilisers play in maintaining sustainable primary production on New Zealand pastures.

In our previous issue we highlighted the fertiliser industry’s role in helping to deliver the science and technologies which support efficient, safe and sustainable farming, as well as ensuring that New Zealand farmers remain commercially competitive and recognised as sustainable producers of high-value, safe and nutritious food. It was emphasised that there is a pressing need, here in New Zealand and globally, to manage the conflicting pressures of increased agricultural production and environmental protection.
OVERSEER® appoints two independent directors

In August, OVERSEER® Limited announced the appointment of two independent directors to its board: Bill Luff and Ian Clarke, joining the three existing board members: Greg Campbell (representing the Fertiliser Association of New Zealand), Tom Richardson (AgResearch Limited) and Dan Bolger (Ministry for Primary Industries). Mr Luff, who is also a Director of Central Plains Water, has been appointed as Chair of the Board. Mr Clark is also a Director of Techion Group Limited.

EVENTS

A&P Shows
November 2016 – March 2017
A&P Shows are being hosted around the country between November and March with the following coming up:
- Feilding A&P Show: Manfield, South St, Feilding, 2–3 December 2016
- Whangarei A&P Show: Barge Showgrounds, Maunu Rd, Maunu, Whangarei, 3 December 2016
- Franklin A&P Show: Pukenaho Showgrounds, Pukekohe, 18–19 February 2017
- Golden Bay A&P Show: Golden Bay Recreation Park, Golden Bay Showgrounds, Golden Bay, 21 January 2017
- North Kaipara A&P Show: Paparoa Showgrounds, 2062 Paparoa Valley Rd, Paparoa, 4 February 2017
- Northern Wairau A&P Show: Arapohue Showgrounds, 3338 Mittal Rd, RD10, Dargaville, 11 February 2017
- Kaitaia A&P Show: 30B State Highway 1 Kaitaia, 24–25 February 2017
- Helensville A&P Show: Grand Hotel Helensville, 1 Railway St, Helensville, Auckland, 25 February 2017
- North Hokianga A&P Show: 1062 Broadwood Rd, Broadwood, 18 February 2017


7th International Nitrogen Conference (INI 2016)
4–8 December 2016, Melbourne, Australia
The theme of INI 2016 is “Solutions to improve nitrogen use efficiency for the world”.

The overall goal of the International Nitrogen Initiative is to optimize nitrogen’s beneficial role in sustainable food production and minimise nitrogen’s negative effects on human health and the environment resulting from food and energy production.

Conference themes include:
1. Nitrogen at global and regional scales
2. Biological nitrogen fixation
3. Improving fertiliser efficiency
4. Crop-nitrogen interactions
5. Livestock and nitrogen
6. Nitrogen contamination of the environment
7. New ways to measure nitrogen
8. Nitrogen and the atmosphere
9. Nitrogen accounting
10. Nitrogen and the community.


Soil, a Balancing Act Downunder
12–16 December 2016, Queenstown
This joint conference of the NZ Society of Soil Science and Soil Science Australia will draw together scientists, land users, policy makers and other rural and urban stakeholders. This trans-Tasman event only occurs once every four years, and will present the latest research on soil and land-based issues, and will include debates regarding the current challenges being faced in balancing land production versus environmental values. The programme includes optional field trips, international keynote speakers, soil judging events and networking functions. To register for the event, visit www.nzssaconference.co.nz.