# Split applying phosphorus fertiliser increases the risk of phosphorus runoff

Agricultural Research *information bulletin*

Applying phosphorus with nitrogen fertiliser, the ability to better manage cash flow and the belief that it grows more grass have meant that many farmers are now applying phosphorus fertiliser at lower rates, but several times throughout the year (split applications).

When water runs over the surface of soil (after heavy rain or when soils are saturated) this is called surface runoff. Surface runoff often contains dissolved phosphorus which is invisible but can leave the farm in drains and rivers and pollute surrounding water ways. Phosphorus fertiliser granules do not need to be washed in. There is enough moisture within the pasture canopy to allow phosphorus fertiliser granules to rapidly dissolve. The leftover granule is usually just the gypsum carrier. If runoff does occur close to phosphorus fertiliser application, phosphorus losses can be high and represents a waste of money and a potential risk to the environment.

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Recent research conducted in Tasmania by TIAR showed that if lower rates of phosphorus fertiliser are applied, less phosphorus runs off. However, if phosphorus is applied more often at lower rates, the chances of getting heavy rain and runoff close to these frequent applications, increases. This means that the risk of phosphorus runoff after several applications even though they might be low rates, is higher compared to applying phosphorus once at a higher rate.

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If soils already have adequate soil phosphorus fertility, then do not apply phosphorus fertiliser. If a soil test suggests that phosphorus fertiliser is required, it is recommended that farmers apply phosphorus fertilisers as infrequently as possible and carefully choose the time they apply to reduce the risk of runoff. This can be done by using a reliable weather forecast and only applying phosphorus in drier parts if the year when the risk of runoff is lowest (e.g. summer). Careful thought is also required if farmers want to combine nitrogen and phosphorus fertiliser, as nitrogen applications usually correspond with the times of the year when runoff risk is greatest.

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The Tasmanian Institute of Agricultural Research (TIAR) is a joint venture between the University of Tasmania and the Tasmanian Department of Primary Industries and Water (DPIW).
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