

Key findings

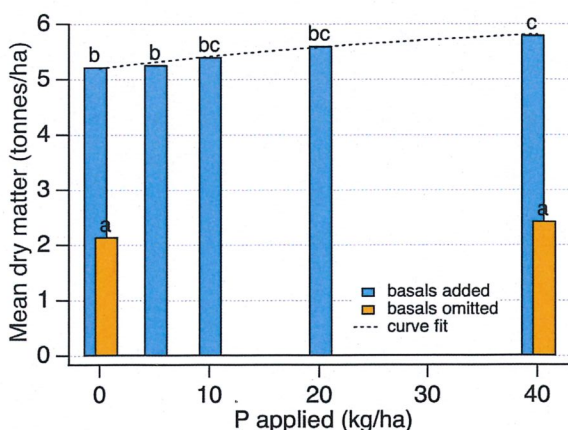
There was a pasture response to P application at the Ford trial, which was expected because of the low P fertility index of the site.

In the first year (2021) a pasture response to P only occurred at the highest rate of 40 kilograms per hectare (kg/ha), while in the second year (2022) responses to P occurred at 5 kg/ha and above (blue bars). Significant differences in pasture response are represented by different letters in the figures below.

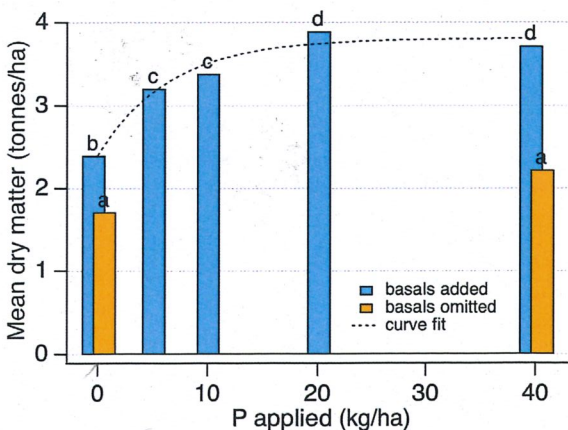
The difference in pasture response to P between the two years was likely because of differences in pasture composition. Ryegrass was dominant in 2021 (80 per cent), with much more clover in 2022 (47 per cent).

In both years there was a significant increase in pasture production with the addition of basal nutrients (nitrogen, potassium, sulphur, and some trace elements shown by blue bars) compared to treatments without basal nutrients (orange bars).

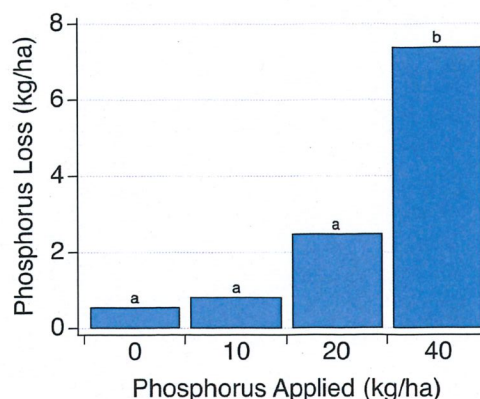
2021



2022



In 2022, the amount of P lost in leaching more than doubled when the rate of P application increased from 20 kg/ha to 40 kg/ha.



Key learnings

The Ford site showed that P leaching losses increased as the rate of P applied increased. This highlights the extra care required to manage fertiliser application on low PBI soils to minimise P losses to the environment.

“Our fertiliser applications need to be more targeted on sandy soils to avoid losses. Applying fertiliser after the break of season and a little-and-often approach is better to maximise production.”
– Lance Ford

“The Ford trial highlighted the different P requirements for ryegrass and clover. Ryegrass has a much lower P requirement than clover, so pasture composition is an important consideration for farmers when making fertiliser decisions.”
– David Weaver, Principal Research Scientist, Department of Primary Industries and Regional Development

More information

These trials were among 52 trials established over four years across south-west WA. Together, the results from the trials validated that national critical soil test values for P are relevant to south-west WA soils and contemporary pasture species.

Learn more at estuaries.dwer.wa.gov.au/uptake

uPtake case study: Peel-Harvey catchment

The Ford trial

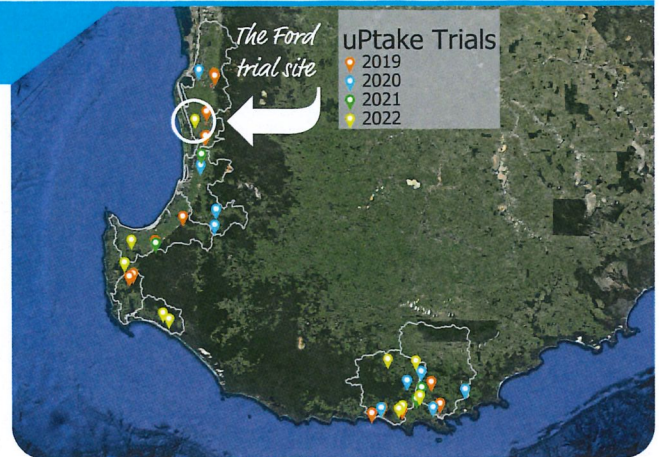


Lacey, Jenni and Lance Ford

The award-winning uPtake project has increased farmer and industry confidence in the science behind phosphorus fertiliser recommendations by validating national critical soil test values for phosphorus (P) for south-west Western Australia (WA).

Lance, Jenni, and Lacey Ford purchased their property in Waroona on the banks of the Harvey River in 2016 and have been farming Angus beef cattle with their family since then. As previous wheat and sheep farmers from the Wheatbelt, the Fords wanted a change in farming so moved to the coastal plain.

“The trial was undertaken on a particularly sandy part of the farm with a low phosphorus buffering index so we were interested in how it would respond to the different nutrient treatments.”
 – Lacey Ford



Ford site

The Ford trial was undertaken over two years, in 2021 and 2022. In 2022, 30 lysimeters (underground tanks) were installed to measure P loss from the different treatments.

Site characteristics

	2021	2022
Phosphorus buffering index (PBI)	4.5	13
P fertility index	0.5	0.5

