WHAT DOES CADMIUM IN OUR FORAGE CROPS MEAN FOR OUR LIVESTOCK

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There has been anecdotal evidence for some time that 'weeds' have an ability to accumulate an elevated concentration of trace elements. Much of this relates to the uptake of essential trace elements such as Cu and Zn. However, a paper by Stafford et al. in Geoderma Regional published in 2016 showed that chicory had a Cd concentration approximately 20 times higher than rye grass. The concentration of Cd was also significant elevated in plantain and Lucerne relative to ryegrass.

New Zealand farming systems are today diversified away from stands of rye grass. Forage crops are a common sight on New Zealand farms. Chicory and plantain can have superior nutrient profiles to traditional grass and are more resilient to dry conditions. Lambs are commonly fattened on chicory, plantain and Lucerne, with and without clover. Cadmium accumulation models designed to protect against exceedances of this contaminant in foodstuffs (i.e. offal) are based on rye grass. The question that must be asked is 'what effect does grazing on forage crops with elevated Cd have on the concentration of Cd in the animals' body?'

Research stared in late 2016 aims to quantify the potential impact of forage crops with elevated Cd on the concentration of Cd in the blood and liver of sheep. The findings of this work will provide preliminary data on the potential magnitude of the 'forage crop effect' on the Cd burden of New Zealand's livestock. This paper will explore the context for the work, and report on provisional findings.

Editor's Note: An extended manuscript has not been submitted for this presentation.