



Can soil organic phosphorus reduce reliance on mineral fertilisers?

**Presented by:
Dr Charles A Shand**

Wattle Room: P use efficiency in
mining, agriculture, food processing II

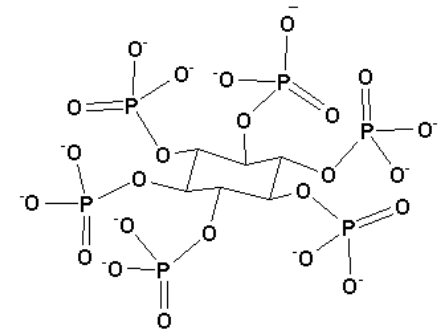


Can soil organic phosphorus reduce reliance on mineral fertilizers?



Much of the added P is lost by:

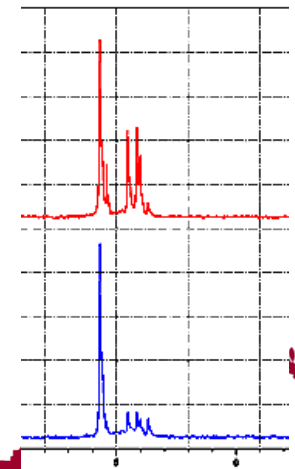
- Sorption reactions
- Organic complexation



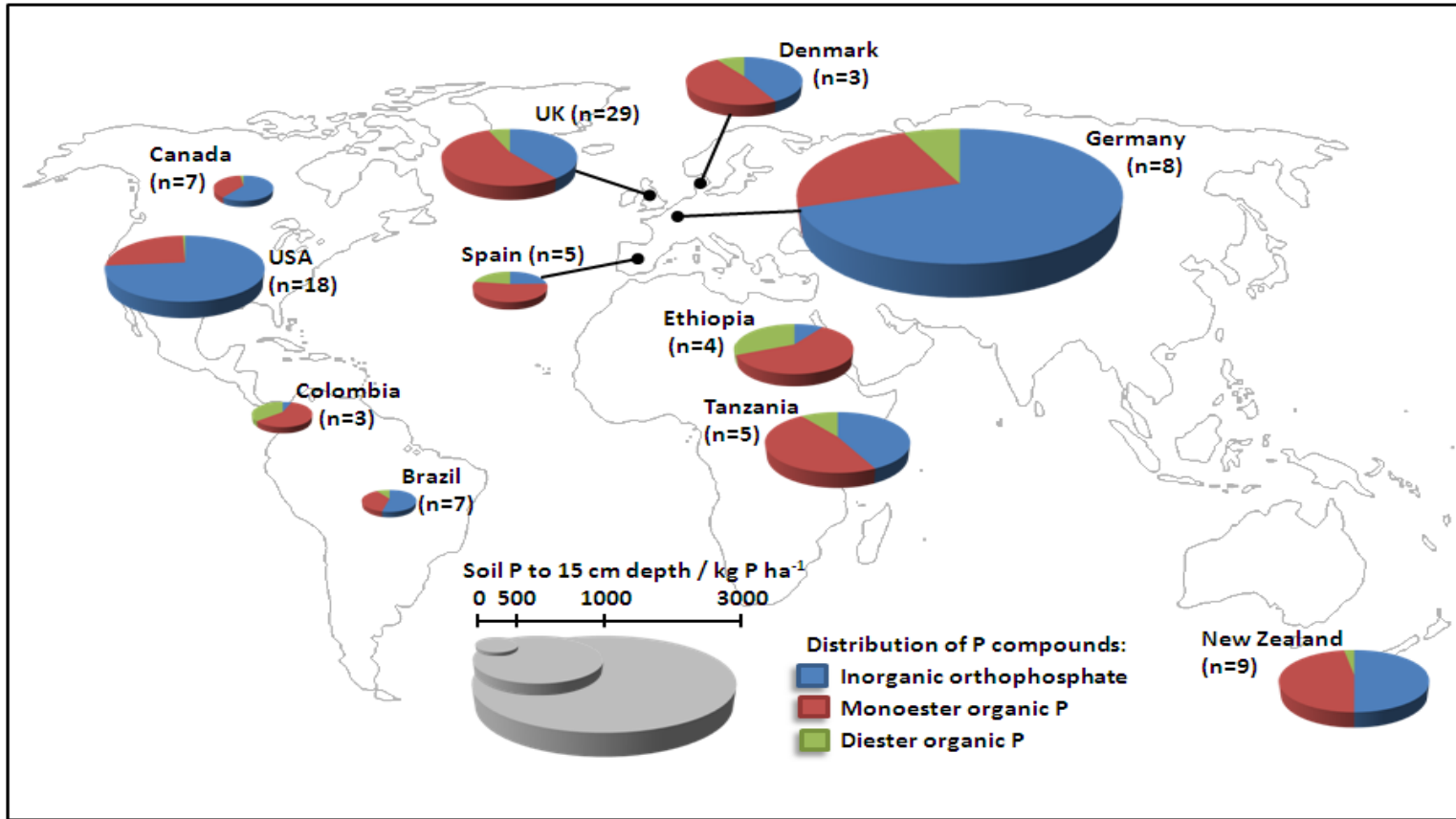
Inositol Hexaphosphate

The amount and forms of organic P in soil can be measured by ^{31}P nuclear magnetic resonance

- Organic P comprises mostly of P esters



Agricultural soil P concentrations and P compounds*



*From a compilation of global soil ³¹P NMR studies (Stutter *et al.*, ES&T, 2012)

Improving access and utilization of soil organic P



- Exudation of phosphatase and organic acids
- Morphological change
- Up rated enzyme activity

