



Improving internal P utilization efficiency (PUE) in crop plants

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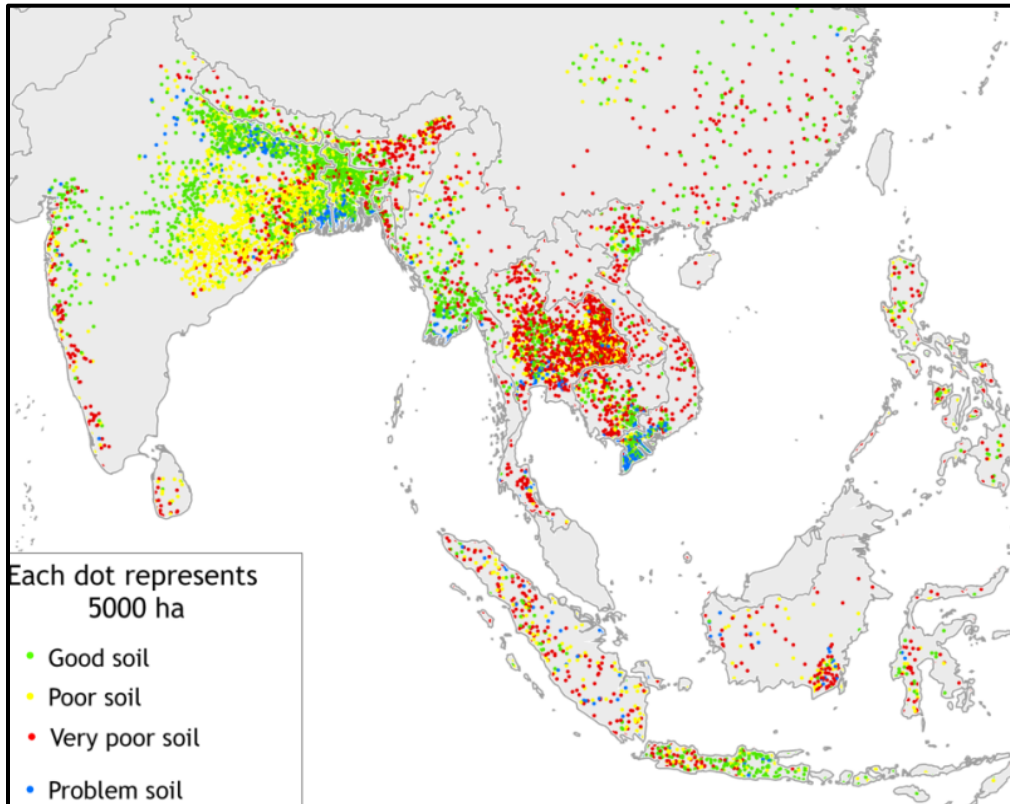
Wattle Room: P use efficiency in mining, agriculture, food processing II



Improving internal P utilization efficiency (PUE)

Problem soils in Asia's rice areas

P deficiency is one of the main factors on problem soils

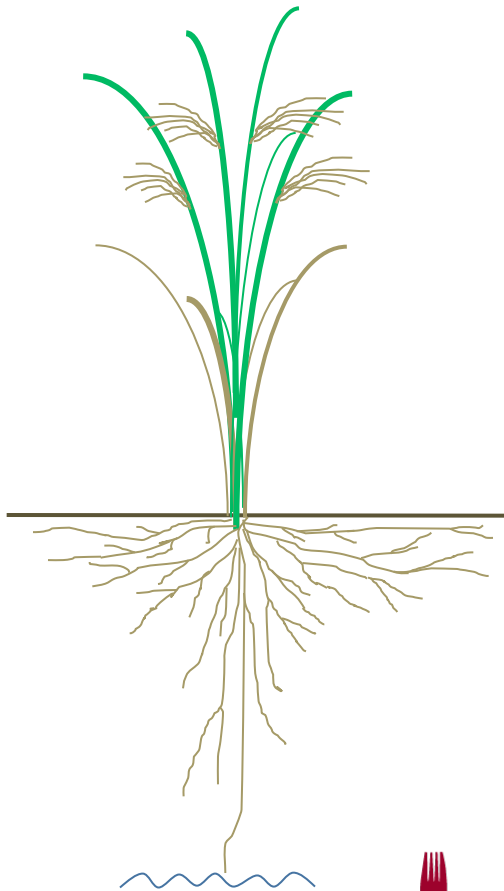


The potential yield in rice is
8t/ha

Many of the problem soil
areas have yields of around
2-3 t/ha

Our target is to improve yield
and P efficiency in rice

Breeding P efficient crops



Lower grain P concentration

- stable yield at reduced P input
- decrease P off-take or P mining

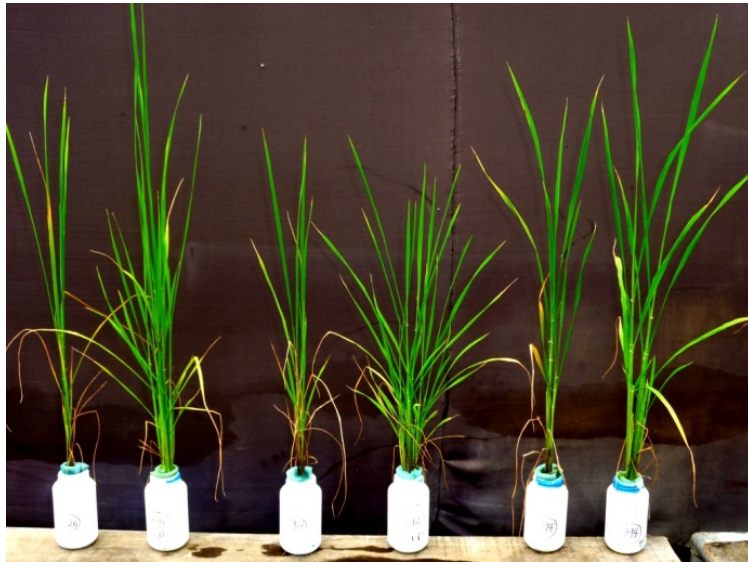
Internal PUE

- more biomass per unit P
- remobilization
- substitution

P uptake

- Pup1
- novel P uptake genes mobilizing fixed soil P

Screening for PUE



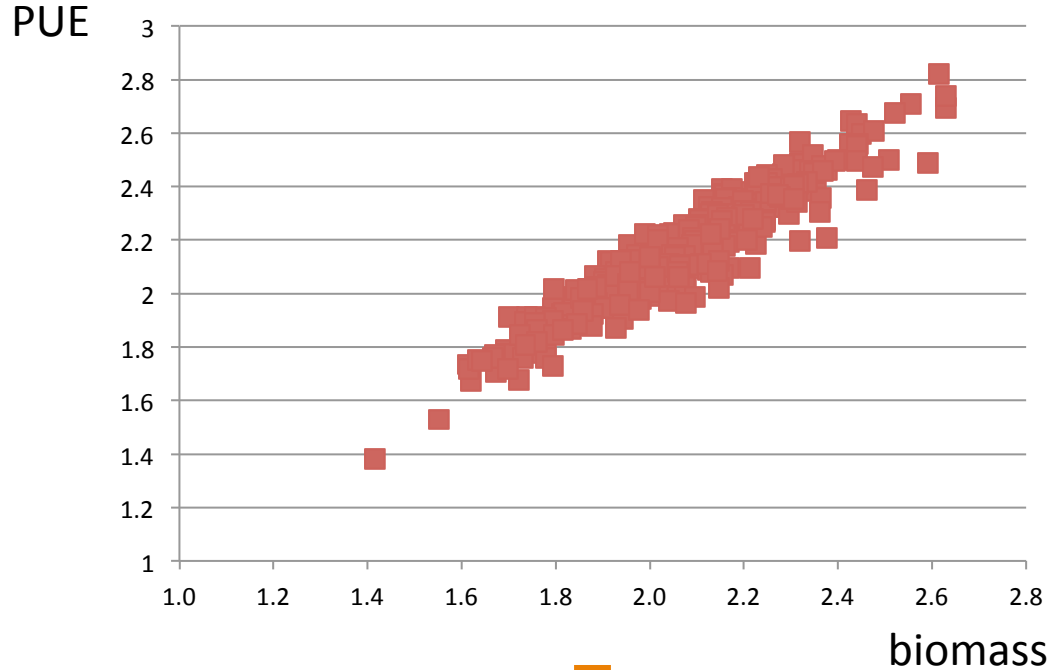
Grow rice cultivars at a fixed amount of P (e.g. 1 mg)

- 330 genebank accessions
- 44,000 - SNP platform



Genome wide association mapping for PUE

Get biomass and estimate PUE (~ P received + seed P)



Association mapping of loci controlling PUE

