

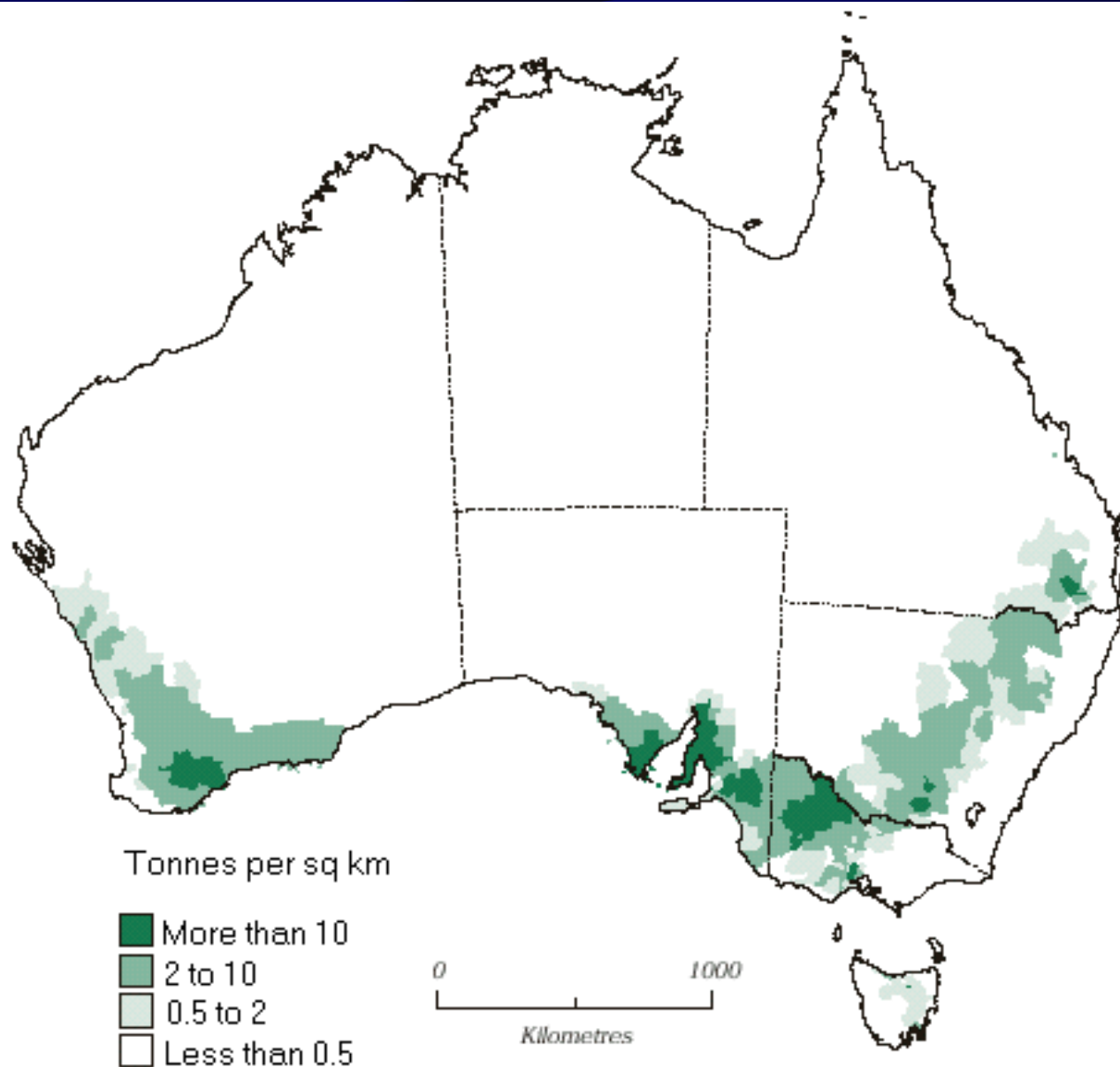


# Field Trials & Variety Evaluation in Australia

## The University of Adelaide Barley Program



# Australian Barley Production

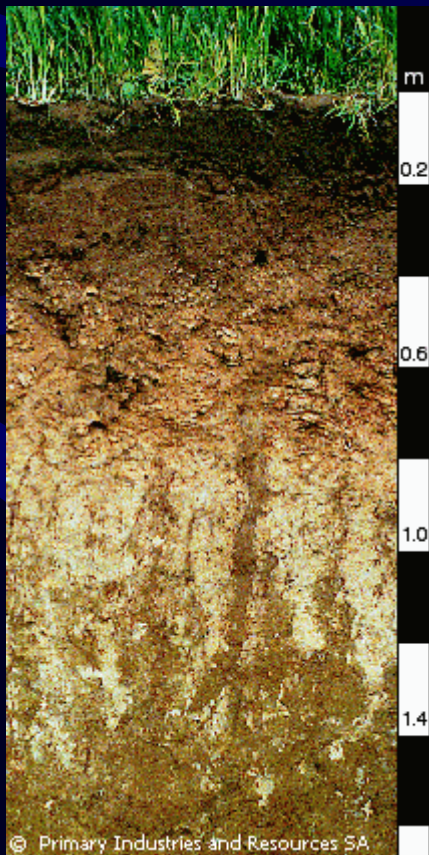


# Diverse Soil Types

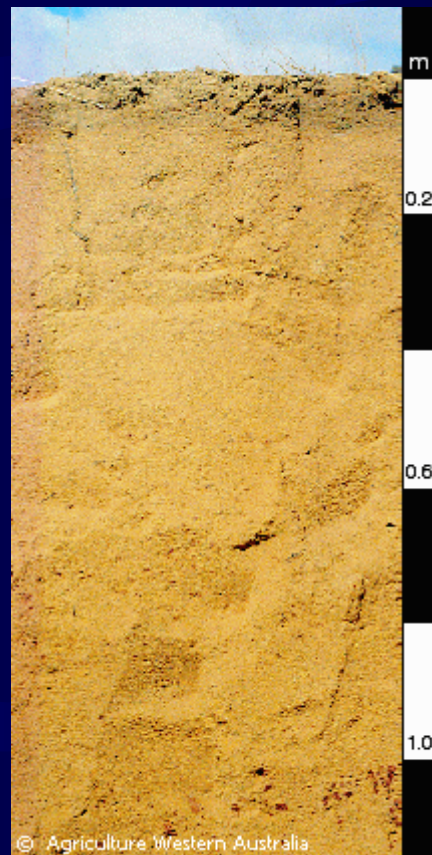
Wide range of pH (4.5 – 9.0)

Micronutrient toxicities and deficiencies

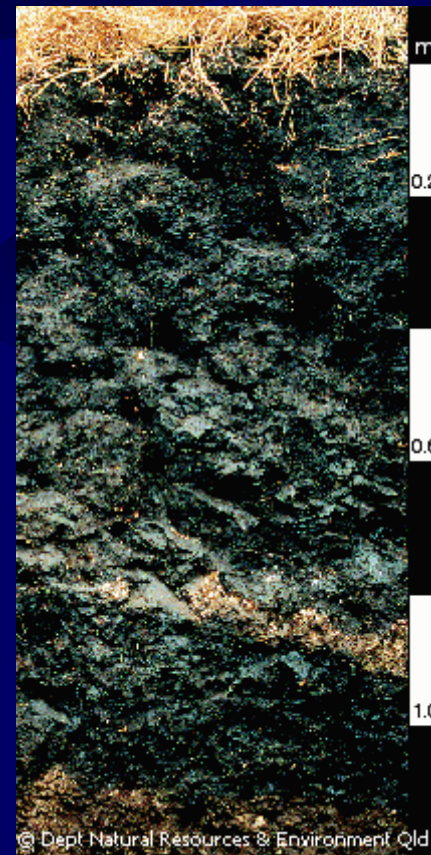
Calcarosols



Kandosols



Vertisols



Sodosols



# Diverse & Variable Climate

National average wheat yield = 2.0 t/Ha  
barley yield = 2.2 t/Ha



# Field Trials in Australia

Plant Breeding:           UA Barley ~ 100,000 plots  
                                  AGT Wheat ~ 200,000 plots

Agronomy trials:           Variety specific management  
                                  General agronomy & farming systems  
                                  Fungicide/Herbicide/Fertiliser trials

National Variety Trials: 250 locations  
(NVT)                       10 crops  
                                  <http://www.nvtonline.com.au/home.htm>

# Robotics and Logistics Management



# Packaging Trials

Reduced labour cost and errors  
Simplifies unique randomisations at each site  
& different seeding rates



# Principles of Field Evaluation

## Test in the target production environments

Limited use of research stations

Predominantly farmers fields

## Test under the target agronomic management

Select farmers reflecting regional 'best practice'

Predominantly ZT

Appropriate rotation (wheat > canola > barley > legume)

Seeding rates ~ 75kg/Ha (targeting 140 plants m<sup>2</sup>)

Up to 90-100 kg/Ha in very high yield situations

Down to 40-50 kg/Ha in LRA with heavy soils

Tactical nitrogen application

# Trends in Plot Seeder Design

Follows developments in commercial seeding equipment



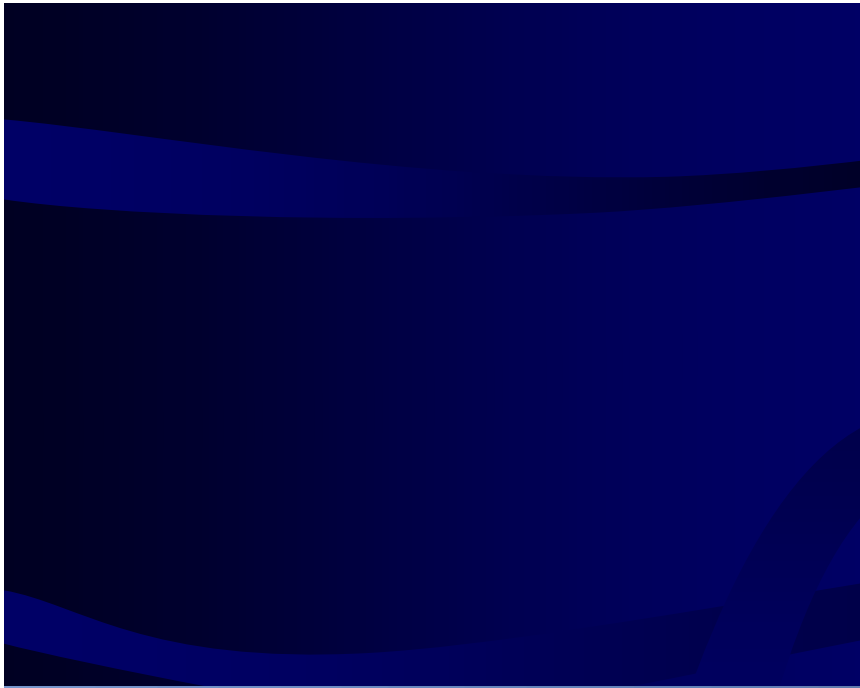
1 row of tynes → 2 rows

Row spacing 15cm → 20cm → 25cm

Fertiliser placement – deep banding







# Is Anything Different in ZT

Changes in root disease

Increased severity of stubble borne diseases

Increased relevance of early vigour and weed competition

Potential for earlier sowing

Increased pressure on plant establishment (coleoptile length)