

# Agronomy | Machinery | Livestock

## Value Chain Development

Nordic – New Zealand  
Industry Interface Support Initiative

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*New Zealand Hill and High Country – A Challenging Environment with Global Analogues*

### Overcoming constraints to pasture and animal productivity A Two-Way Approach

#### Constraints

- Strong presence of plant-available aluminium ( $Al^{3+}$ )
- Dominance of resident species – low acceptability to livestock
- Fragile soils – prone to wind erosion and further degradation
- Large seasonal climatic variation
- Pasture development is strongly limited by economic feasibility



#### Feasibility of Development Productivity vs Input Expense

#### Remediation

Remove  $Al^{3+}$  toxicity with  
fertiliser/lime inputs



#### Innovation

Establish lupin pastures that  
will thrive with minimal inputs

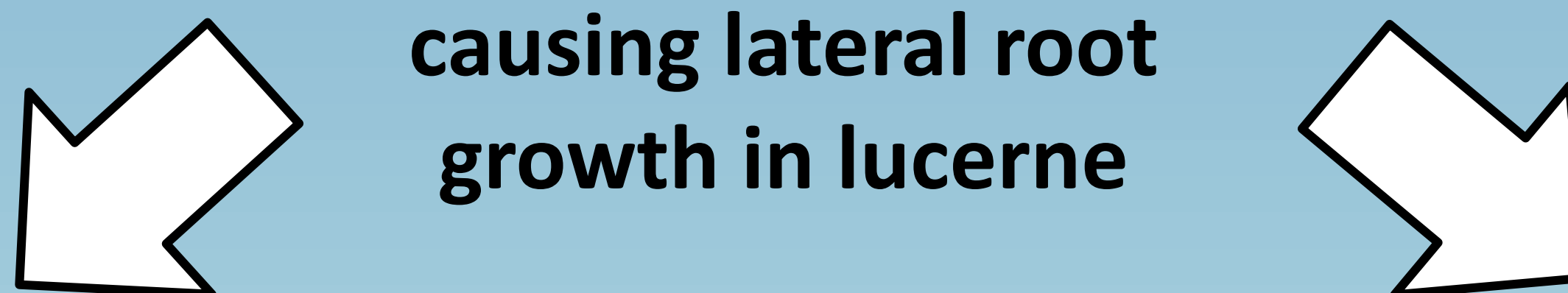


#### Subsoil Lime Injection

Development of a Unique Implement



Subsoil  $Al^{3+}$  toxicity  
causing lateral root  
growth in lucerne



#### Sow Tolerant Species

*L. polyphyllus* as a Suitable Forage



**Initiate Nitrogen Cycling - Rebuild Soil Organic Matter - Provide High Quality Feed**



New Zealand's specialist land-based university