



Nitrogen-fixing pines and grasses

This research programme investigates whether pine trees and grasses can fix nitrogen, by converting atmospheric nitrogen into plant-available nitrogen, and improve plant stress tolerance.

These benefits are conferred by creating new symbioses between plants, fungi and bacteria, this research is world leading.

Lincoln Agritech researchers are isolating and selecting New Zealand fungal-bacterial hybrids that naturally can undertake nitrogen-fixation and deliver proteins and polymers that enhance plant tolerance to stress.

The researchers are identifying and characterising naturally occurring hybrids between bacteria and two fungal endophyte species, *Trichoderma* and *Epichloë*, that have ability to live within

plants. These fungal-bacterial hybrids will then be introduced to pine trees and perennial ryegrass.

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