

### **Project Scope- Feedbase Theme**

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The Feedbase section of the Border Rivers Grain and Graze is directly concerned with providing a continuous supply of quality feed throughout the year. This will allow producers to obtain maximum liveweight gain of animals to meet specific market requirements and to turn animals off faster, or to allow producers to better match the nutritional demands for quantity and quality with seasonal plant production.

The maintenance of optimum biomass production will also benefit the soil by providing better ground cover, increase soil organic matter, and hence soil biological activity, structure and increased infiltration and thereby reducing erosion risk through reduced water run-off.

Methodology will be to determine the pattern, quantity and quality of feed produced from a range of pasture and forage plants on a range of soil types under our environmental conditions. Modelling can then be used to extend the results to other sites and rainfall patterns and marry this with livestock requirements to maximise livestock returns. A main target will be to identify where the feed gaps lie and provide possible sources of production that can help fill these gaps.

The final part of this section as with others will be to deliver these results to landholders, through field days or workshops and to produce printed material to encapsulate this information.

Activities currently under way include a legume species evaluation trial sown at McMaster's UNE Research Farm at Warialda. This was sown to 30 lines of mainly annual legumes on the 20<sup>th</sup> June 2006. The 30 legumes consist of 6 medics, 5 sub-clovers, 11 other clovers, 2 yellow and 2 pink serradellas, Biserrula, an annual lotus and the perennials sulla and sainfoin. The soil is a red, sandy loam with a pH of 6 in water and 5.3 in CaCl<sub>2</sub>.

CSIRO are also planning to sow 6 summer legumes, 12 winter legumes, 9 summer grasses and 3 forages (oats, sweet forage sorghum and millet). In addition at McMaster Farm 3 equal areas of 4 ha each will be sown either lucerne plus summer dormant temperate grasses (Phalaris and Fescue), lucerne plus a sub-tropical grass mix (Digit, Rhodes and creeping blue grass) or tropical legumes, Burgundy Bean and Desmanthus plus tropical grasses. The tropical species will be sown this spring/summer.

Other activities include production from short-term summer forages, forage oats in grain based systems and trade-offs in utilisation of sorghum stubbles between feed value for animals and compaction and erosion risks. All these would involve the integration between the STOCK and APSIM simulation models to look at beef production.