DEVELOPING REGIONAL CURING SCENARIOS

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Introduction to Overall Project

- PhD project - Development of Pasture Growth Models for Grassland Fire Danger Risk Assessment.
- Curing is the proportion of dead material in a grassland as a result of senescence[1].
- Grassland becomes more desiccated and flammable[1,2] as curing increases (Fig. 1 and 2.)
- This project aims to provide the senescence algorithms to adapt agricultural decision support tools (DST) to allow curing to be modelled across the temperate zones of southern Australia and New Zealand.

Aims of research adoption pilot study

- Test the senescence (curing) algorithms in the field
- Develop regional curing scenarios
- Develop predictive curing capacity
- Recommend strategies for operational implementation

Figure 1. Changes in curing in a phalaris pasture at Struan, SE SA over spring and summer. Note greening-up after summer rainfall.

Future Activity

- Incorporate models into DST
  - Negotiate incorporation of senescence algorithms into trial versions of GrassGro and APSIM DST products.
- Recruit regional fire officers to collect curing data during Spring/Summer 2010
  - Liaise with fire and land management agencies.
  - Determine extension approach which enables fire agency staff to utilise the curing estimate products.
- Develop GrassGro scenarios for these regional areas
  - Develop GrassGro or APSIM simulations for selected grasslands.
  - Gather inputs on soils, species, management regimes and validate model outputs of grass biomass and timing of growth with landholders, fire agency staff.
  - Confidence in the standard DST outputs will be necessary before the curing-specific outputs are able to be relied upon.
- Develop forecasting curing capacity
  - GrassGro™ DST[3] has a tactical mode, and can utilise weather files with Patched Point Data (PPD) from the Bureau of Meteorology's SILO website (www.bom.gov.au/silo).
  - Test "what-if" scenarios, given extensive climate data available based on weather data (from SILO) and grassland conditions as current as the previous day, for instance hot drying wind event, or summer rainfall event.
  - Fire agency staff would provide information on the current state of grasslands and validate the predictive outcomes of simulations for accuracy, relevance, and timeliness.

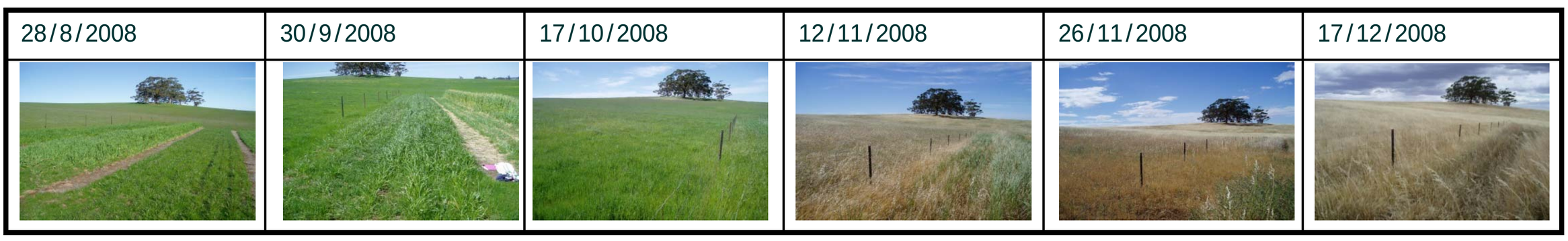

Figure 2. Changes in curing in a mixed perennial pasture at Clare, mid-north SA over spring and summer.

References

1. Cheney P & Sullivan A (1997) Grassfires: fuel, weather and fire behaviour. CSIRO.
2. Garvey M & Millie S (1999) Grassland Curing Guide. Victorian Country Fire Authority.
3. Moore AD, Donnelly JR & Freer M (1997) *Ag. Sys* 55(4): 535-582.

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