DEVELOPING REGIONAL CURING SCENARIOS

H.G. Daily
School of Agricultural Science, University of Tasmania

S.A.J. Anderson
Scion, New Zealand (present affiliation Ministry of Agriculture and Forestry, New Zealand)

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.
- Grassland becomes more desiccated and flammable 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

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
  - Gather inputs on soils, species, management regimes and validate model outputs of grass biomass and timing of growth with landholders, fire agency staff.
  - Determine that the standard DST can be used to provide fire agencies with information on the current state of grasslands and validate the predictive outcomes of the simulations for accuracy, relevance, and timeliness.
- Develop forecasting curing capacity
  - GrassGro™ DST 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 timelines.

References


Acknowledgements

1. University of Tasmania - PhD scholarship
2. Bushfire CRC - top-up scholarship