

STOCKPLAN: IMPROVING DROUGHT DECISIONS

M.J.McPHEE^A, G.P.MEAKER^B, P.GRAHAM^C, P.M.CARBERRY^D, B.L.DAVIES^E, M.B.WHELAN^F, A.K.BELL^D, B.CLEMENTS^G and W.A.McKIERNAN^H

NSW Agriculture^A Beef Industry Centre, Armidale, NSW 2351; ^B Goulburn, NSW 2580; ^C Yass, NSW 2582; ^D Tamworth, NSW 2340; ^E Maitland, NSW 2320; ^G Bathurst, NSW 2795; ^H Orange, NSW 2795
^F Southern Cross University, Lismore, NSW 2480

StockPlan is a computer program for cattle and sheep producers to explore management options relating to drought. It is designed to be an extension tool to assist producers make management decisions that minimise the environmental and financial impacts of a drought. This paper aims to provide an overview of the 3 StockPlan decision support tools: Drought Pack (exploring feeding options), FSA Pack (exploring “Feed, Sell or Agist” decisions) and Im Pack (exploring herd or flock dynamics).

A number of decision support tools such as DroughtPlan (QDPI, 2000) and GrazFeed (Freer *et al.* 1997 and Horizon Technology 1998) are already available to assist managers make management decisions during drought. However, the authors believe that StockPlan will fill a niche to assist producers and advisers (i) make strategic decisions before and during drought, (ii) monitor the financial impact of the decisions they are making, and (iii) make pro-active decisions.

Drought Pack: A windows-based computer program, is an energy-based model (MJ ME/kg fed) that assesses the cost of feeding and determines the break-even price for specific animal classes. The nutrition component of Drought Pack performs the critical calculations that are based on several empirical equations published in AG bulletin 3 (Oddy, 1978). The break-even analysis assists a producer to determine whether or not to retain stock based on the inputs supplied to the package.

FSA Pack: An Excel spreadsheet, evaluates the cost of feeding, selling or agisting for a specific livestock category rather than a whole farm analysis. The user specifies up to 4 different drought lengths, and provides cash cost estimates and “bottom line” estimates. The “bottom line” estimates include allowances for pasture re-establishment costs, the value of pasture for other enterprises when an agistment or sell option is chosen, and a projection of stock values over the duration of the drought.

Im Pack: An Excel spreadsheet, assesses the impact of a herd or flock structure. This decision tool uses a static modelling approach, over a 10-year period, which provides a producer with the opportunity to assess the structure of the herd or flock after making extra culling decisions in the drought year. The equations are based around an age and herd structure model for beef breeding enterprises (Dobos *et al.* 1997).

The development of StockPlan has employed a strong team approach across a number of disciplines that has the potential to assist producers make informative and timely decisions before the onset of a full-blown drought. Multiple runs within StockPlan provide users with a range of strategies that can be compared. StockPlan will be delivered to producers through a series of workshops that will include the software on a CD and a comprehensive manual.

DOBOS, R.C., CARBERRY, P.C., VLEESKENS, S., SANGSARI, E., JOHNSTON, B.D. and ODDY, V.H. (1997). In ‘MODSIM 97 International Congress on Modelling and Simulation’ (Ed. A.D.McDonald and M. McAleer) Vol 3, pp. 1080-1085. (Uniprint, University of Western Australia:Perth).

FREER, M., MOORE, A.D. and DONNELLY, J.R. (1997). *Agric. Sys.* **54**, 77-126.

HORIZON TECHNOLOGY Pty Ltd (1998) V4.0 [disk] (Animal reproduction Pty Ltd, Roseville).

ODDY, V.H. (1978), AG Bulletin 3. (NSW Department of Agriculture).

QDPI (2000). v2.3 [CD]. (Department of Primary Industries: Queensland).

Email: malcolm.mcphee@agric.nsw.gov.au