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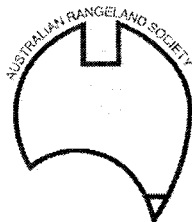
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## **SIMPLE STANDARD MEASURE OF SEASON: IS IT POSSIBLE?**

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### **ABSTRACT**

*In an attempt to provide a simple and standard procedure for documenting seasonal conditions which does not rely on rainfall reports from isolated recording stations, a non-destructive, field-based method was used. The measurement of pasture yield, pasture species composition, pasture cover and the vigour of woody plant species was trialled.*

*Both pasture yield and species composition gave effective indications of the seasonal conditions, but percentage cover and woody plant vigour did not. The procedure for site selection was limiting so a method allowing for greater coverage of the region will be trialled in 1996.*

### **INTRODUCTION**

For most years there is little documented information on seasonal conditions over the Alice Springs region, and what is available is mainly anecdotal. As it is the quality of the season which determines pastoral growth and hence the pastoral production potential in any year, improved knowledge of season is desirable. When referring to season we are examining the effect of the combination of a number of factors, the most dominant being that of rainfall. However, the effect of rainfall is determined by the timing, intensity and duration, as well as amount of rainfall.

There is no quantitative and repeatable measure of season other than the observed rainfall at isolated homesteads, and since 1970 the number of Bureau of Meteorology rainfall recording stations has fallen by 70% (N. Flood, pers comm). This is why we have set out to trial a series of methods to determine if recording, documenting, interpreting and presenting season quantitatively is possible in a cost-effective manner. Within these methods we are attempting to describe and quantify the unconscious decisions producers make about season when travelling over their stations. With a standardisation of these assumptions, people with low levels of technical knowledge will be able to document the seasonal conditions of the region.

### **METHODS USED TO DATE**

#### **Site Selection**

In 1995 seasonal conditions were determined by observations at 100 fixed recording sites. Sites were selected from current field sites used for another project, the Range Condition Assessment project, RCA (Bastin 1992). These sites were approximately 200 m × 300 m in area and at least 2.5 km from stock watering points. The sites were representative of the surrounding area. In order to minimise the variation attributable to the differences between vegetation types, only open woodland eco-types were considered.

#### **Yield**

After the entire site had been walked over, a single visual estimate of yield of dry matter was made using a modified comparative yield method (adapted from Friedel and Bastin 1988). Using photostandards, this involved allocating a rating which most closely approximated the yield of the site.

#### **Pasture Species Composition**

The three major plant species were noted. The operator estimated which species occupied first, second and third place in terms of dry weight after having walked the entire site. An estimate of the percentage of dry weight of the three species was also recorded using a single visual estimate.

### **Percentage of Pasture Cover**

The percentage of pasture cover was estimated within ten 1 m<sup>2</sup> quadrats. The ten estimates were then averaged for a percentage of cover at the site.

### **Woody Plant Vigour**

Woody plant vigour was determined using a five point scale where:

1. Looks dead.
2. Moisture stressed, but alive.
3. Unstressed but no new/recent growth.
4. Some active new/recent growth.
5. Vigorously growing plant, under no stress.

The vigour of the majority of the woody plants determined the value attributed to the site, according to the above scale.

## **DISCUSSION**

Re-location of the sites posed a major problem as there was only a 66% success rate. Another problem was the RCA sites do not provide broad enough geographic coverage to enable regional seasonal conditions to be determined. Therefore in 1996 an alternative method for site selection is being trialled which will enable greater coverage of the region but with a compromise in the detail of measurements at any given site.

The percentage of pasture cover and woody plant vigour were not effective in assisting to identify variations in season across the region. There was no variation at all across the 100 sites for woody plant vigour.

The use of pasture yield and pasture species composition as indicators of season were effective on open woodland sites around the Alice Springs region. The 100 sites had been grouped into eleven geographic localities to simplify data interpretation and presentation. Within these eleven localities, the yields varied by 370 kg/ha, with the localities west of Alice Springs having lower yields. The plant species composition was relatively uniform across the region, with *Aristida contorta* (mulga grass) being the dominant plant species at ten of the eleven localities. There was a high percentage of grass species at all of the localities.

Because the data collected for this work have a large spatial component, their value is enhanced by a good spatial presentation. The format and length of this publication does not allow this to be achieved.

## **FUTURE ACTION**

To better gauge the reliability of the current methods it is desirable to conduct field work across known and more extreme seasonal variations in the 1995-1996 season. A different procedure for site selection will also be trialled which allows greater geographical coverage of the region.

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