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Promising results on West Kimberley pindan country

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IN the 22 to 28 inch rainfall belt of the West Kimberley area of Western Australia are extensive areas of what is locally known as "pindan" country. The term "pindan" refers to a light red or yellow sandy soil type supporting scattered Eucalypts, sparse-dense wattle scrub and grasses such as curly spinifex, ribbon grass and native sorghum.

In its natural state the grazing value of pindan country is low; carrying capacity for cattle is estimated at about 4 beasts per square mile. During the short wet season, extending from late December to mid March, and for a few months thereafter, cattle make reasonable weight gains on pindan. However, from mid year onwards they begin to lose weight and late in the dry season mortalities are often high, especially among breeders and young stock.

The main problem is the very low protein status of the dry native pastures, complicated by phosphorus and, in some areas, copper and cobalt deficiency.

Despite its obvious limitations pindan country has some advantages which, in the long term, and if pasture improvement can be shown to be possible and economic, could lead to considerably greater productivity from it.

First, although the wet season is very short, rainfall is relatively high and...
reliable, and second, the bulk of the area concerned is reasonably close to established meatworks at Broome and Derby.

For a number of years the Department of Agriculture has been conducting a research programme in an attempt to find practical methods of removing the native scrub and establishing better quality pastures.

Clearing of the country by burning, bulldozing, rolling and ploughing has been attempted with varying success.

Burning in late dry season before ploughing promotes a tremendous increase in wattle seedling establishment and counts above 50,000 per acre have been recorded.

Clearing with a bulldozer becomes expensive and appears to delay plant establishment, possibly by removing the surface soil.

The method currently followed is to use a heavy disc plough behind a crawler tractor with the dozer blade slightly raised to push over trees without removing the surface soil.

Time of treatment is critical and for successful establishment ploughing should be done after opening rains have germinated the native grasses. With competition from these greatly reduced, the introduced species have a better chance of establishing and competing with the wattle seedlings and regrowth.

By mounting a fertiliser and seed box on the disc plough it becomes a "once-over" operation which greatly reduces establishment costs.

Good stands of birdwood and buffel grasses of considerably better quality than the native species have been established in two years. In the year of establishment phosphate fertiliser for the introduced grasses and hormone spray treatment for the control of wattle seedlings and suckers are necessary. Heavy stocking with sheep and cattle has not been a very effective or practical method of controlling wattle seedlings.

Accurate establishment costs are not yet available because to date most of the trial work has been on small-scale plots; however during the 1968-69 wet season bulk areas will be cleared and laid down to improved pastures in an effort to determine more accurately establishment costs, carrying capacity and productivity in terms of saleable beef.

A major break through is not likely until a tropical legume that establishes and regenerates successfully on pindan country with 25 to 28 inch rainfall is found. Early attempts to establish the then available strains of Townsville lucerne have not been a success. However a range of early maturing Townsville lucerne strains from the Northern Territory and Queensland have been obtained and these will be tested over the 1968-69 wet season. Some of the earliest of these are reputed to establish and regenerate successfully the following year on about 25 in. of summer rain. Other legumes under test include perennials such as Siratro, Dolichos axillaris and annual Dolichos biflorus or Leichhardt biflorus.

The method of utilising a legume pasture such as Townsville lucerne would be to graze it as a dry standing high protein supplement late in the year when the quality of dry native pasture is insufficient to maintain cattle weights. September to December are the critical months of the year and a legume pasture would be invaluable in filling this nutritional gap. During this period stocking rates of 1 beast per acre on Townsville lucerne are feasible.

A number of foders and grain sorghums have been grown under natural rainfall conditions for the past two seasons and yields have been encouraging. There is little doubt that the rapidly growing fodder sorghum types such as sudax, zulu, trudan and suhy, and bullrush can be grown with considerable reliability. When cut at the milky dough stage hay yields have been in the order of 4 to 5 tons per acre.

The average length of the growing period is about 12.9 weeks at Derby and 16 weeks at Beagle Bay in the Dampier Peninsular north of Broome. This is sufficient to mature a crop of the early maturing grain sorghums now available. Of six grain sorghums tested at Derby last year Texas RS 610 and Pacific 007 gave maximum and equal yields of 2,680 lb./ac. A range of 14 grain types will be under test this year.

Both the fodder and grain sorghums have fairly high levels of nitrogenous and phosphate fertiliser requirements and the cost of production is high. Freight charges
to Derby more than double the works cost of 22 per cent. superphosphate. Double superphosphate and the new compound fertilisers, if suitable, would give some saving in freight.

Methods of economically utilising wet season grown fodders and crops hay not been investigated but hay only or hay plus self feeding silage stacks for late dry season feeding could be possibilities. There is also a limited local market for hay and grain sorghum as a substitute for oats and other horsefeeds imported from the southern areas. Most stations of necessity feed their working horse plants during the mustering season.

Considerably more trial work is needed but it is hoped that pasture improvement and fodder and grain production will, in the long term, prove to be an economic method of increasing beef productivity from pindan country.

At the moment, with the present price structure for Kimberley beef, it is not likely that development of a pindan block as an independent unit would be an economic proposition.

However, such development may be worthwhile as a sideline activity to an existing self-supporting cattle station which has pindan country within its present boundaries. Such a developed block, if used for steers and bullocks, could mean a quicker turn-off at a younger age with consequent reduction in grazing pressure on areas used for the breeding herd. Alternatively, if legume pastures can be established successfully, they would be of great value in reducing breeder and calf mortalities late in the dry season.
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