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SOLVING PASTORAL PROBLEMS

By W. M. Nunn, B.Sc. (Agric.), Officer in Charge, North-West Branch

For many years, most of the Department of Agriculture’s rural extension work—especially the application in the field of methods evolved and tested in small-scale experiments—was confined to the southern portion of the State. To be more specific, it was confined to the triangle formed by the south and west coastlines and a line running from a few miles north of Geraldton to the vicinity of Esperance.

Since the North-West Branch was formed within the Department of Agriculture, considerable progress has been made in taking extension work farther afield into the pastoral areas. The branch was created in 1950, and the first of our field workers can be said to have recognised and come to grips with pastoral problems in 1952.

The first success achieved was in the Port Hedland area where Hank Suijendorp, now Regional Adviser for the district, was able to point the way towards arresting the decline of pastures resulting from continuous stocking practices. By introducing the principle of “deferred grazing” he showed how the waning carrying capacity of this country could be built up again.

He also demonstrated how, by “checkerboard ploughing,” the extensive claypans on stations near the coast could be reclaimed and re-grassed after being completely bare for many years.

This work has been written up several times already in this Journal—see particularly “Station Management—The Value of Deferred Grazing” (September-October, 1954) and “Pastoral Research” (May-June, 1956). Reprints of these articles are available as Bulletins Nos. 2194 and 2356 respectively.

The first Departmental field day dealing with the solution of pastoral problems in this State, was held at Abydos Pastoral Research Station in April, 1954. Since then, the field day has been an annual event in the Port Hedland district and the venue has alternated between Abydos and Mundabullangana—a station which has been most co-operative in providing facilities for our research men and in applying their recommendations on a field scale.
DEFERRED GRAZING

The deferred grazing principle is not of course a newly-devised one. It has been applied in America for years, and can be studied in American range management textbooks, but it had to be proved and demonstrated here before station owners could be convinced that it was sound for our conditions. What made it doubly important as an initial study was that research workers in other States had failed to obtain results and were inclined to doubt its application in this country.

There is little doubt now that it can be applied in principle over a number of different plant communities in our North-West and Kimberley pastoral areas. Minor variations, of course, will occur in practical methods to be adopted. In some areas an unpalatable invading species has to be disposed of before the desirable ones can be induced to return. In others it is necessary to break the hardpan surface to give seeds a chance to lodge and germinate.

But the principle of periodic deferment during the growing season appears basic to a wide range of types from Gascoyne to Kimberley.

MORE PASTORAL FIELD DAYS

The success which attended the initial work in the Port Hedland area resulted in an extension of pasture regeneration research, and ultimately to field day
activities in the West Kimberley and Lower Gascoyne districts. This year has witnessed some notable advances.

In May, a two-day meeting took place on Gogo and Cherrabun Stations, two Emanuel Bros. properties in the Fitzroy Crossing districts. This was the first gathering of its kind in the Kimberley division and the response was most gratifying.

Visitors were able to inspect some thousands of acres of grasslands recovered by a few years of good management after having been continuously bare for many years. Part of this area consisted of Departmental trials where lines of buffel grass had been planted in furrows to inaugurate the recovery processes but had been themselves replaced after a few years of deferment by the native Mitchell and rice grasses moving in from surrounding areas. On the lighter soil types, buffel and Birdwood grasses remain as permanent members of the perennial grass community. On heavier soils they do not do well, but have been sown because the seed is readily available, and because even small beginnings of any type of plant growth contribute materially to build-up of soil, seed and water penetration to

Fig. 5.—Another snapshot at the Woodleigh field day. Note the heavy growth of windgrass and mulla mulla on the experimental area. Perennial grasses have reappeared in small numbers and should multiply with further deferred grazing. Outside the fenced area, the country carries only sparse vegetation.
enable the native perennials to return in force.

In addition to the Departmental trials, visitors inspected the Coonoongoodie area where Emanuel Bros. have undertaken a huge project of fencing and furrowing to protect and regrass an area of approximately 200 square miles.

In September last, a field day was held at Woodleigh Station, just inland from Shark Bay and about 100 miles South of Carnarvon.

Here the country is fairly densely populated with acacia scrub. The taller, less accessible acacias have become denser in recent years, and progressively less is seen of the grasses and smaller edible species of scrub which provided former carrying capacity.

In a region which had been cleared by burning the dense acacia, an area was fenced and deferred during the growing season. Subsequently grazing was permitted and this was successful at a rate which made better use of the feeds than elsewhere under continuous grazing. The response is most pronounced in comparison with outside areas, and it seems that the deferment technique will produce worthwhile improvement here.

The immediate gratification however, is in the response among local pastoralists. Practically all near neighbours were present, and they came knowing that investigations were only at the commencement stage.

The atmosphere of friendly co-operation and constructive criticism was most inspiring to both the agricultural officers and owner-manager Mr. J. Thomson, whose combined efforts had led to the trials and the organisation of a field day, which now looks like becoming an annual event in the Shark Bay area.

NEW FRUIT FLY BAITS

Two new formulas for fruit fly bait have been recommended by the Department of Agriculture following upon experiments carried out by the Government Entomologist.

Announcing this, the Minister for Agriculture (Mr. L. F. Kelly) said that the new formulas contained malathion and were based on American preparations which had proved successful.

He said that the recommendation of sodium fluosilicate, as given on the back of the Orchard Registration Certificate and in the leaflet dealing with Mediterranean fruit fly, still stands but the malathion preparations were likely to give improved control.

The first new formula was—
Fifty per cent. malathion emulsion—4 oz.
Sugar—2½ lb.
Water—4 gals.

In the second new formula, 2 oz. of Protein Hydrolysate of Yeast was used instead of the 2½ lb. of sugar. It was pointed out, however, that supplies of yeast were limited and it was not readily available on the local market.

Both preparations are to be used as foliage baits in the same way as recommended for sodium fluosilicate, and should be applied every six days. The malathion could be recommended to both commercial growers and householders as an alternative to sodium fluosilicate.

There is quite a difference in relative costs. During the field trials last season the cost of the normal sodium fluosilicate was £2 7s. 3d. per 100 gallons, the malathion-yeast bait was approximately £4 5s. per 100 gallons. However cost would not be a factor if greatly increased control of fruit fly is obtained. A commercial firm has marketed a fruit fly bait in powder form consisting of malathion and yeast. This bait contains malathion as a wettable powder which could cause spotting of the fruit, if carelessly used. Moreover it must be noted that the strength recommended by the Department is twice that contained in the recommendations given on the label.

When used with normal precautions and in accordance with the instructions, malathion should offer no danger to operators or consumers. As with fluosilicate it is advisable to wash all sprayed fruit before eating.
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