BOOK REVIEW

"Managing Pastures and Cattle Under Coconuts", Donald L. Plucknett, 1979, Westview Tropical Agriculture Series, Westview Press, Boulder, Colorado, U.S.A. 364 pp. Price: US$26.50.

Dr. Don Plucknett is Professor of Agronomy at the University of Hawaii at Manoa. He has compiled in this book, a considerable body of information gathered during his extensive travels in the Pacific and Asian tropics, from attendance at Regional Conferences, and from a wide review of the available literature. The book is directly reproduced from the typed script in clear bold type with over 100 very clear and well selected photographs, drawings and figures.

The author has attempted to provide a comprehensive handbook covering all aspects of pasture and cattle development under coconuts. He has succeeded admirably in this at the practical and technical level. Nevertheless my main criticism of this book must be that in attempting a comprehensive treatment, the text lacks depth in some areas of particular interest to agricultural researchers. However the author is working within severe constraints as quantitative data are limited and much data which have to be quoted are often not based on very rigorous scientific research.

The book begins with a discussion of the advantages and disadvantages of undercropping coconuts, provides useful statistics on world coconut areas, and a brief review of the status of cattle and pasture development in major coconut growing countries. The second chapter discusses the cultural requirements of coconuts, covering briefly botany, rainfall, soils, pests and diseases, and harvesting. The section considering yield potential of coconuts is based on rather old data, suggesting potentials of 2500–3000 kg copra ha^{-1} $year^{-1}$, but neglects the recent development of hybrid coconut breeding with suggested yield potentials up to 6000 kg ha^{-1} $year^{-1}$. The nutritional requirements of coconuts, fertilizer schedules and placement, are then summarised and the chapter concludes with a discussion of spacing and underplanting old coconut stands.

The third chapter on understory cover management lists and describes (in 40 pages) the main weeds of the tropical areas. While these descriptions are usually readily available in most coconut growing regions, I suppose there is some advantage in having such a listing assembled here, but specific control measures for each weed species are not given. There is a short (3 pages) general section on weed control and a table (with the strange title "Suggested chemical control measures for coconuts") describing usage of some weedicides.

Considering that one of the major considerations in intercropping relates to competition for water and nutrient and shading by the coconut canopy, the very brief treatment in Chapter 4 does not do this topic justice. While data are limited, the important topic of shading deserves more than one graph showing light transmission with palm age without definition of spacing, variety or palm height. The use of crops underplanted in coconuts is well illustrated with some excellent photographs.

There is a very useful chapter on naturalised pastures with descriptions of the main species, estimates of carrying capacity in different coconut growing areas, and some quantitative liveweight gain data from Samoa and the Solomon Islands. The chapter on pasture establishment provides data on cultivation requirements, and a guide to inoculation requirements of legumes, but surprisingly no guide to sowing rates of grasses and legumes.

The chapters on improved pastures open with a very useful compilation of the data mainly from Sri Lanka, on the interactions of sown grass species, fertilizer inputs and grazing on coconut yield. Unfortunately there are few data available on grass/legume mixtures, or on levels of animal production. This chapter then discusses the

major pasture grasses, their management, productivity and special features. The next chapter then describes the sown pasture species and again lists the grasses and their adaptations. I feel this material could have been combined so that all information regarding one species is presented in one place. Also animal production data are given with the species in the first chapter and these migh have been consolidated. We would not necessarily agree with some of the characteristics noted for some species, *e.g.* in our experience puero is not grazed out (p. 234), on the contrary with grazing under shade it becomes dominant. Also we would not agree that para is somewhat tolerant of shade and grows vigorously under coconuts (p. 215).