

Comments on: Integration of animal production in coconut plantations by S. Reynolds

From Francisco A. Moog <famoog@globe.com.ph>

Comments on 5th paper: animal production under coconuts

I would just like to share our results on grazing Signal grass and Humidicola under coconuts in Albay province. Our results from a trial (with support from the FAO Grassland Group through the Regional Working Group on grazing and feed resources in S.E. Asia) in a private farm (Ligao Farms Systems Dev.Inc.) indicate that we can carry 2 to 3 steers per ha with ADG of 350 g without supplementation. In our situation, this is already good because with native vegetation we get only 200 g ADG at stocking rate of one steer/ha.

While integration shows good economic benefits, I feel sad whenever I see coconut lumber transported by trucks to urban Manila - we are losing these coconuts due to encroaching industrialization and urbanization within the coconut growing areas, particularly in Laguna, Quezon and Camarines Norte 60 to 300 km south of Manila.

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From F. Neckles <fanec@eclacps.undp.org>

Comments on the fifth paper (integration of animal production in coconut plantations)

In the Caribbean and especially in Trinidad and Tobago animal production under coconuts has been practised for 40-50 years. In the more wet smaller islands, there has tended to be intercropping with coconuts i.e. other commercial trees - cocoa, bananas were mixed into the cultivation. Alternatively animals were tethered and grazed between the trees.

Like the other plantation crops coconut production has been negatively affected by low product prices for a long time. Further soybean oil

imports and from 1986, the importation and processing of whole soybean, diseases such as "Red Ring" in Trinidad and "Lethal Yellowing" in Jamaica which killed trees of 3-8 years of age, the incidence of praedial larceny, high cost of labour, etc. meant that the crop became less attractive to produce. Further, coconut growing lands by the sea or in the drier areas of islands are also a target of alternative land use especially for the hospitality/tourism industry.

In recognition of the long-standing uneconomic price of copra, land owners especially on the larger holdings introduced cattle mainly zebu and water buffalo herds to their plantations in the 1950's and 1960's. Mainly unsuccessful effort was made at planting improved grasses. Grazing then reverted to savannah grass, *Axonopus compressus*, and even deteriorated to inedible bushes which had to be brush cut mechanically. Cow/calf operations were the norm and still are maintained, often small feedlots are attached. Younger weaned stock are fed concentrates and by-products.

By the 1970's it started to be felt by some that the mixed coconut/grazing cattle system was at best "in transition" possibly to pure livestock rearing. Livestock earnings and value exceeded the coconut aspect and the balance of a sustainable system was not found. In fact, with the disease and other factors described above, and with the extractive nature of production system, replanting of plantations was neglected. Trees became aged with reduced bearing and have not been replaced. In many estates trees are now 60-80 years old and with declining yields. The newer coconut hybrids on which the industry may depend for the future are not yet in use locally.

Some smaller plantings consist of younger trees but the spacing does not appear to allow enough light for forage production. Such estates have tried cattle production and have found the cost of supplementary feeding with the reduced forage levels too high and have not continued. This has been aggravated by the livestock industry not developing as anticipated in the 1960's and 1970's and in fact we have tended to be more import dependent than having local sources of meats. On the island of Tobago some producers have persisted with improved breeding, with grazing of *Digitaria* species, feedlotting of young stock, followed by slaughter and

packaging but have had difficulty holding market share even in the midst of a flourishing tourism industry. Animal performances, meat quality, etc. are, however, good.

In summary the future does not appear to be very bright locally and this may have to do with both non-agricultural and agricultural reasons. I am interested in the outlook in parts of the world, including areas mentioned in the paper and in some more detail of their experiences.

From Jayasuriya Noble M.C. <Jayasuri@rip01.iaea.or.at>

Comments on Integration of animal production in coconut plantations (fifth paper)

Just a comment about pasture/grazing under coconut. There has been a very interesting study reported recently in *Outlook on Agriculture* (1996) Vol 25, No. 3 pages 187- 192 by Pathirana *et al.* (Bob Orskov mentioned this very briefly). The study conducted in the Southern coastal area of Sri Lanka, looked at the effect of grazing the natural herbage growing in coconut plantations on the growth and reproduction of indigenous cattle, as well as on coconut production and soil fertility. The outcome was very interesting. Very briefly, the growth, reproduction and lactation of zebu cattle was found to be poor when no feed supplement was given. Provision of rice straw or better, rice straw plus feed supplement greatly improved cattle performance (weight gain, milk yield as well as reproduction). There was an increase in coconut production and associated with it improved soil water holding capacity of the coconut land, mainly through recycling manure. Perhaps, here is a sustainable farming system, because it is a low input production system. On the other hand one can never say; it will all depend on what scale we use to measure sustainability !. (I can provide a copy of the article if any one needs - just send me an E-mail).

Noble Jayasuriya, IAEA

Comments from S. Reynolds on Floyd Neckles' comments on the fifth paper (integration of animal production in coconut plantations).

I noted with interest your comments regarding the situation in the Caribbean and particularly in Trinidad and Tobago. This is a situation not uncommon in other parts of the world and some of your observations could equally apply to the South Pacific. The major problem has always been the shade factor which limits the range and productivity of forage species and the fact that livestock were really an after thought as plantation spacing was designed to maximize coconut yield. With the decline in copra price since the 50's growers have become more interested in the livestock part of the system whereas previously livestock were rather regarded as useful weeders! Data are available which clearly illustrate the key role of livestock in providing the majority of plantation and small farmer income with low copra prices and also in cases where hurricane damage has been suffered which set back copra yields for many months. Until last year a number of Pacific Islands found that with low prices it was hardly worthwhile collecting copra as the returns barely covered the labour cost. With the recent price increase exports are again climbing. Many coconut trees are now past their optimum bearing age and while replanting has been undertaken many growers are beginning to question the wisdom of replanting at the traditional spacings. Thus the mention in my paper of the need to look at systems of tree spacing with emphasis on wide inter-row areas. With the wider spacing one can have production of forages or other crops in the inter-row areas on a continuous basis without the problem of severe light reduction (although with the coconut spacings and age of some of the trees in the Pacific this is not such a major problem). Whether the coconuts are for copra export or for local consumption this system will provide for continuing yields without undue interference with or influence on the other portions of the system. As the version of the paper which was distributed was somewhat reduced in length then this aspect may not have received sufficient emphasis.