
EDITORIAL

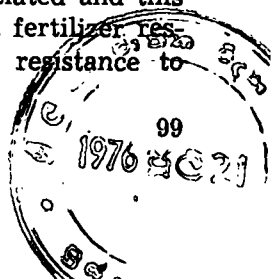
Fertilizer Practice in Rice

SINCE Ceylon imports nearly 45 per cent. of its rice requirement the problem of increasing local production is very important. It is also a well appreciated fact that further expansion of the present rice acreage is limited by the high capital cost of land development and irrigation. Rapid and substantial increases, must, therefore, be achieved in other ways which are directed to boosting existing acre yields.

However, very encouraging progress has been made in Ceylon in rice production as witnessed by an increase of nearly 50 per cent. in the total production of rice during the last six years, from an average of 31.2 million bushels in 1955-1957 to an average of 46.8 million bushels in 1961-1963. The average yield of rice per acre, too, has risen in recent years—nearly 39 bushels today—and it is either higher or comparable with average yields in India, Burma and Pakistan. According to recent analyses of the comparative increases of rice production in rice growing countries of the world by Dr. Sterling Wortman* the percentage increase in rice production in Ceylon (65.6 per cent.) is the highest in the world for the eight year period 1954-1962.

This has been made possible not only by an increase in the acreage under paddy but even more so by research achievements and extension efforts of the Department of Agriculture and the facilities afforded to the cultivators by the Department of Agrarian Services. The impact of better varieties, fertilizer use, improved practices like row sowing, mechanical weeding, etc., and chemical control of pests and diseases have all had their impact on raising rice yields to unprecedented levels in the Island.

The quickest road to substantial increases in rice production lies in the more widespread and intensive use of fertilizer in fields that are starved of nourishment. However, early attempts at intensifying the use of fertilizer met with unexpected problems. Firstly, most of our locally cultivated varieties did not have a high fertilizer response, and secondly, at increased levels of nitrogen fertilization these varieties succumbed to the Blast disease. An intensive programme of screening rice varieties for Blast resistance was initiated and this highlighted the variety M-302 which had the highest fertilizer response among our local varieties and also the greatest resistance to



Blast. A number of exotic varieties with these desirable characteristics were also selected in these tests. These results were of great value in subsequent breeding programmes. In 1960 the 4½ month hybrid H-4 made its debut combining high fertilizer response and blast resistance and clearing the way for an intensified fertilizer programme. Similar improved varieties in the shorter age-groups are currently undergoing their final tests.

Despite considerable progress since 1957, efficient fertilizer exploitation has been handicapped by (a) the lack of a rice soil map for making specific fertilizer recommendations, and (b) inadequate knowledge of the physiology of the rice plant in relation to nutrient intake. These deficiencies, however, have been rapidly remedied by the Department of Agriculture.

Consequent on the results of the All-Island Rice Soil Fertility Survey conducted in recent years a comprehensive list of specific fertilizer recommendations is now available for the twenty-two agricultural districts in this country and the various divisions within these districts. This is indeed a far reaching step when compared to the two general fertilizer mixtures, one for the wet zone and one for the dry zone, that were recommended a decade ago. Moreover, as a result of some excellent work carried out in the Department of Agriculture by Japanese physiologists it is now possible to get the maximum use of the nitrogenous fertilizer by varying the time of application to coincide with the critical period in the growth of the rice plant when it most requires the fertilizer.

It has also been observed that the continuous use of ammonium sulphate in acid rice soils in the low country wet zone results in an injurious build-up of sulphide. Consequently, Urea, which contains no sulphur, is now recommended for these soils and the sandy soils of the dry zone, while the use of ammonium sulphate is restricted to the neutral and slightly acid rice soils of the dry zone.

These findings in respect of the correct type of nitrogenous fertilizer to be used—urea or ammonium sulphate as the case may be—and the best times of application, have been embodied in the tentative recommendations now available for the separate districts. These should serve as a guide till refinements and modifications become necessary as and when our knowledge and experience of fertilizer practice grows.

It must be admitted, however, that even today the proportion of rice fields that receive correct and adequate fertilizers is comparatively small in relation to the total rice acreage. On a high estimate, perhaps not more than 30 per cent. of our total acreage of 1.5 million acres

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receives any fertilizer and it is probable that even this proportion does not receive the optimum fertilizer dosage. The rapid extension of fertilizer use therefore could make a substantial contribution to further increased yields in the future.

It is appropriate, therefore, that under the Sponsorship of F.A.O., a Freedom From Hunger Campaign Soil Fertility Project has been initiated in the Department of Agriculture and is now under way. Financed jointly by the Ceylon and Australian Governments, this project will work towards demonstrating the effective use of fertilizers in various parts of the Island during the next four years. With the credit facilities and subsidies on fertilizers offered by Government to the cultivators, there is no doubt that our Island's rice production will rise even more steeply in the years to come.

(June 1964)

* International Rice Commission News Letter Vol. XIII No. 1—(March 1964)