Whether or not the coconut palm needs common salt is a moot point although it has been found to benefit the palm in the absence of other fertilizers, especially potash. If added to planting pits of laterite soil sodium chloride softens the hard laterite thereby enabling the tender roots of seedlings to penetrate into the soil easily. Not only that, irrigation of coconut palms with sea water results in increased yield.

Use of Common Salt in Coconut Gardens

by P. L. RAMANANDAN *

Application of common salt (sodium chloride) to the base of the coconut palms as well as in the crowns is an age-old practice among many of the coconut cultivators in India. It is believed that the coconut palm requires common salt for its high yield either as a direct manure or as an indirect soil ameliorant.

Sodium requirement in plants

Sodium is reported to be connected with the water relationship of plants helping them to tide over drought by maintaining turgidity of cells. The presence of sodium was shown to reduce evaporation from soils to some extent. It is also known to prevent the excessive accumulation of other toxic and injurious ions in the plants. Sodium also improves the yield and quality of fibres in some plants.

There is some reason to believe that sodium is needed in coconut nutrition. In Ceylon it is computed that from an hectare of land having 148 coconut palms yielding 25 nuts per tree per year, 9.9 kg. of sodium is removed in a year. Application of common salt on laterite soils of Ceylon has increased the vegetative growth of palms.

Sodium itself might be a nutrient or it can make available more important potassium to coconut palm from the soil or again it may act as a substitute for potassium in the nutrition of the palm. There is evidence to show that for quite a number of plants such as table beets, celery etc. sodium can partially but not completely replace potassium as a plant nutrient.

Sodium has been shown to delay the setting in of the potassium deficiency symptoms in plants. However, sodium cannot take the place of potassium completely. In farming practices common salt can be used with beneficial effects under conditions of potassium deficiency.

Fremond, a French worker has reported that the application of sodium chloride to young palms has increased significantly the number of inflorescences, female flowers per tree and nuts per bunch. An increase of about ten per cent in the out-turn of copra was also reported.

A field experiment was conducted at the Central Plantation Crops Research Institute, Kasaragod from 1954 to 1961 to find out the effects of common salt application with the following treatments on adult coconut palms. The annual dose of manures was applied during September every year in circular basins round the base of the palms. The treatments were as follows:-

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Dose per tree per year.

T 1	Ammonium sulphate	1.7 kg.
	Superphosphate (ordinary)	1.4 kg.
	Muriate of Potash	0.9 kg.
T 2	Ammonium sulphate	1.7 kg.
	Superphosphate (ordinary)	1.4 kg.
	Common salt	1.2 kg. (replacing the muriate of potash of treatment T 1.)
T 3	Common salt	4.5 kg.
T 4	Control	no manure.

The results obtained showed that the addition of common salt alone has increased the yield by 7.4 per cent over the control. In treatment T2 where muriate of potash was substituted by common salt, there was an increase of 12.2 per cent in yield over the control, while in treatment Tl, the increase in yield was 16.8 per cent over control. So it can be assumed that sodium may partially take up the functions of potassium in the nutrition of coconut. The data obtained also show that the application of common salt alone is beneficial to the coconut when other fertilizers, especially potash, is not applied. From the data it is observed that combined fertilizer application is definitely superior to common salt alone or N plus P and common salt.

Salt tolerant nature of coconut palm

Coconut roots tolerate high salt concentration even upto 0.6 per cent which could be lethal to several other plants. This may be one of the reasons why the cultivators think that the coconut is a salt tolerant plant. It has been reported that salt concentration of 6,380 ppm in the soil did not kill the coconut palms although there was an initial set-back; while arecanut, mango and jack trees were damaged beyond recovery. Moderate quantities of salt applied to the coconut seedlings appeared to have an invigorating influence on the seedlings, though application of heavier doses proved to be harmful. In Ceylon, after fifteen months of treatment with 454 gm of salt per seedling per month on rocky laterite soil, clear improvement in vigour, size and foliage colour was noticed when compared to untreated seedlings. In Malaya it is reported that best coconut palms are found in places irrigated with slightly brackish water. The addition of salt to planting pits of laterite soil is also said to soften the hard laterite, facilitating the tender roots to penetrate easily.

The above observations indicate that while the coconut palm can tolerate high salt concentrations and the palm seems to benefit by the application of salt although it cannot be held that there is a specific need of the sodium ion for the palm. Irrigating the palms with sea water (brackish) has been found to increase the yield without any deleterious effects.

NPK fertilizer application is essential to maintain the high and steady yield of coconut. Addition of common salt at the rate of four or five kg. per tree per year particularly in sandy soil may further increase the yield.

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