

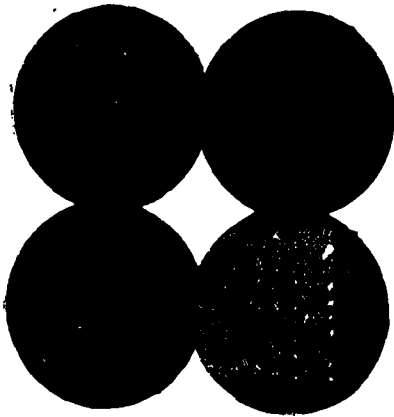
PLANTING SYSTEMS

A SUMMARY OF PRESENT-DAY PRACTICE IN CEYLON

By T. GANARAJAH,
Advisory Field Officer.

AN important limiting factor to the growth of crops is the need for adequate room for their development. A given area cannot support an unlimited number of plants; there exists for every crop, depending on the conditions of soil and climate, a definite number of plants per acre which will give maximum productivity from a given piece of land.

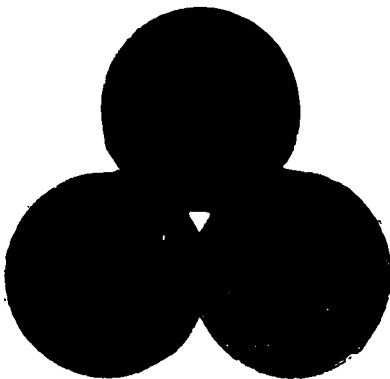
FIG. 1.



If the "stand" falls short of the optimum, production is diminished owing to the fact that full advantage is not being taken of the available area. If on the other hand, the stand is excessive, the yield will be diminished owing to overcrowding and the consequent interference by each plant with its neighbours resulting in intense competition for plant food, moisture, light and air. That is why coconuts must be correctly spaced and why there is no room for other subsidiary crops if the palms are correctly spaced. Catch crops can however be grown during the first three years when the palms are still young and small.

Systems of Planting.—There are four systems of planting coconuts used in Ceylon, viz., *Square, oblong or rectangular, quincunx and triangular.*

Square.—The palms are set at fixed equal distances at the corner of each square on a chessboard pattern. The distance between palms in each row and the distance between adjacent rows is the same. Square-planting, although normal practice in Ceylon, does not give the best coverage to the soil as there are big light patches at the centre of each square. (See figure 1).



Square and Triangular Planting.

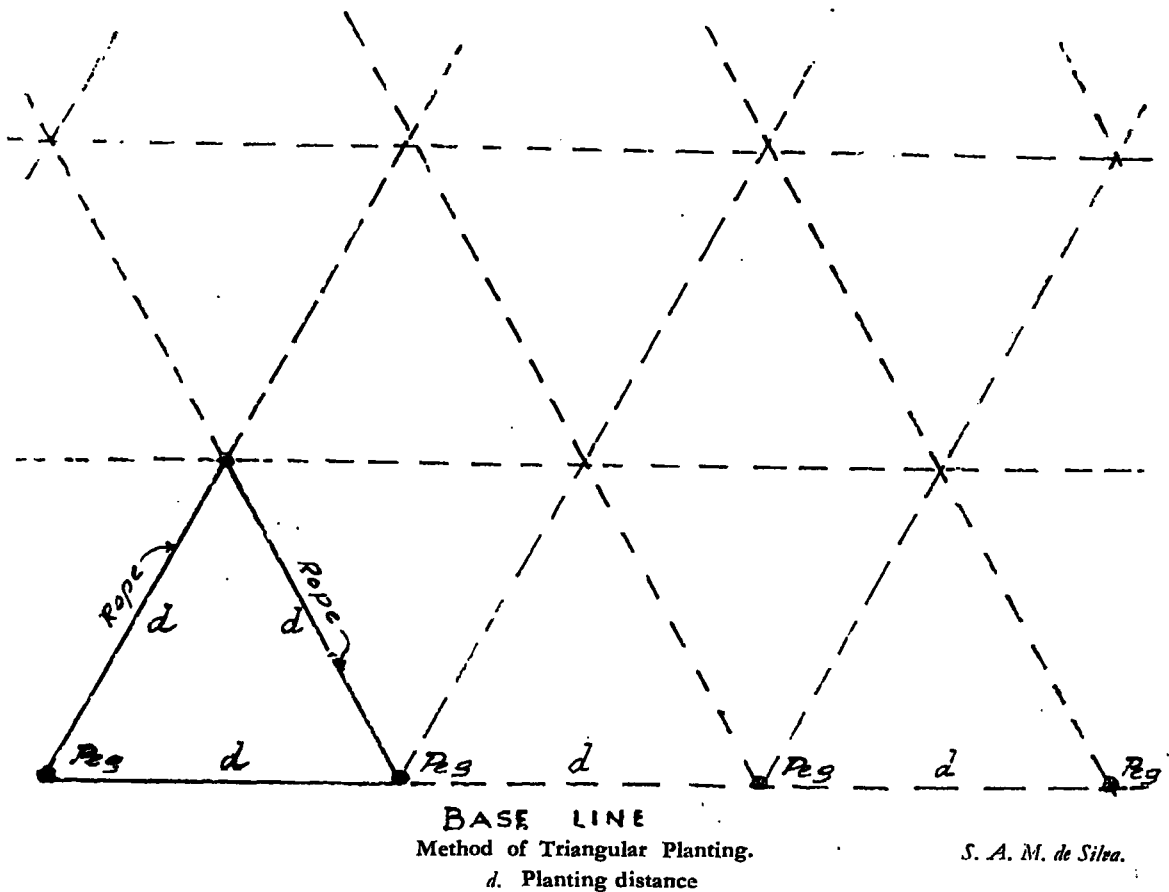
cultivation of catch crops between the young palms.

Oblong or Rectangular.—The planting lines are at right angles to one another but the planting distance is not the same in the N.S. as in the E.W. rows. In other words, the distance between the palms in one row is greater than the distance between the two rows. This method gives a slightly higher stand than square planting since the rows are brought closer, but lining is somewhat more difficult. This method allows more room for inter-

Quincunx.—The seedlings are planted on the square by the addition of one tree in the centre of each square of old palms. This method is commonly used in replanting, but the old stand must be removed, as soon as the new seedlings are established in order to avoid overcrowding and the resulting competition for food and light which will delay the fruiting of the young palms for over 15 years. The removal of the older palms should always begin after the third year.

Triangular.—The palms are set at fixed distances at the corners of equilateral triangles. *i.e.*, the planting lines are set at sixty degrees to one another. This is probably the best system. By this system more palms can be planted per acre with a proportional increase in yield, because the fullest use is made of the land without the fronds of the palms interfering with one another; furthermore, weed growth is checked because the ground is more effectively shaded so that the soil remains cool and moist—a very important point in the drier areas.

FIG. II.



Lining for triangular planting is simple. The first thing to do is to establish an absolutely straight base line (see figure 2). The direction in which this line runs is immaterial. When the base line is fixed, the planting distance, say 26 ft., is marked out by a succession of pegs, each about 18 ins. in height. Equilateral triangles are constructed with the distance between consecutive pegs forming the base of each successive triangle. This is easily done with a knotted rope the length

of which is twice the distance between pegs, viz., 52 feet. The ends of the rope should be held at the two pegs and the rope pulled from the middle so that a triangle with three equal sides is formed. A peg is then inserted in the ground at the apex and it only remains to join up the lines and peg out planting distances along each of them in the ordinary way. These pegs must be carefully placed so that the lines remain absolutely straight and this requires a little extra care.

Planting Distances.—The planting distance is correct when the tips of the fronds of the mature palms just overlap. The planting distance needs to be varied according to the lay of land, the nature of soil, and the climate.

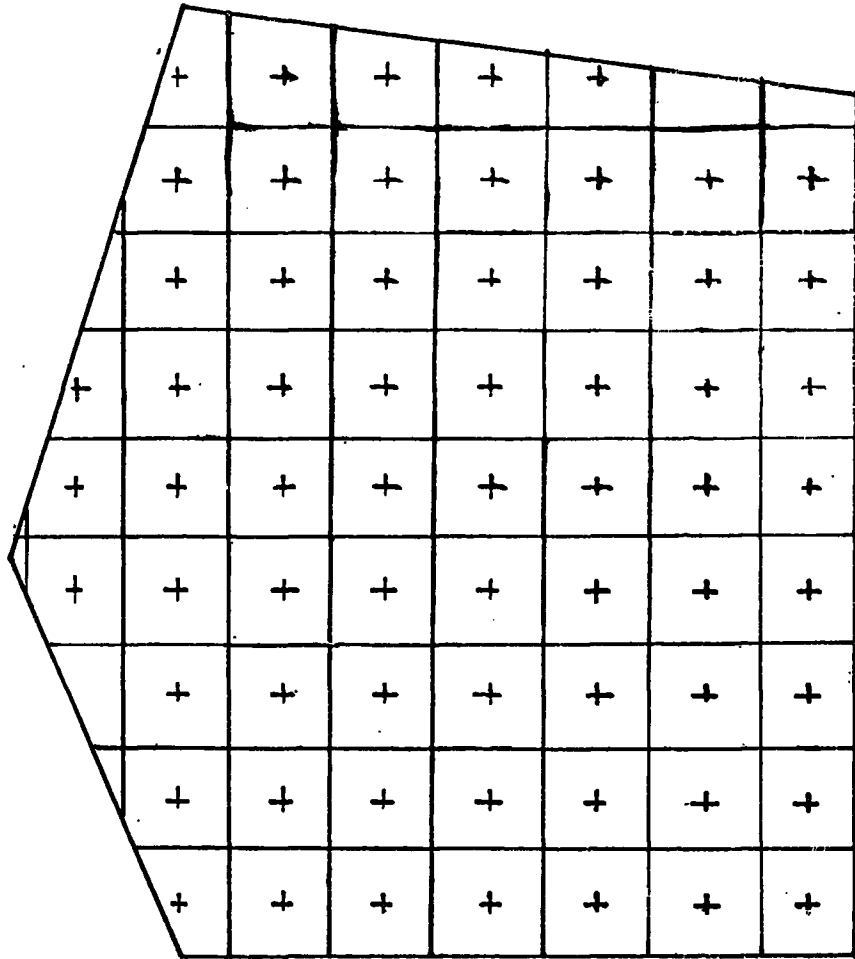
For most conditions in Ceylon, the correct planting distance may be taken as 26 ft. × 26 ft. In cross-drained, low-lying clay areas where the water-table is high, where each palm has to grow on a raised platform or island, and where the roots need room to spread, the spacing may be as wide as 30 ft. × 30 ft. In hot dry districts with sandy soils, like Batticaloa and Puttalam, which are subject to long periods of drought the seedling should be very closely planted, in order to obtain from the foliage as much shade as possible for the soil; the palms may be placed as close as 24 feet or even 22 feet apart.

The following table gives the approximate number of palms per acre with the different systems of planting :—

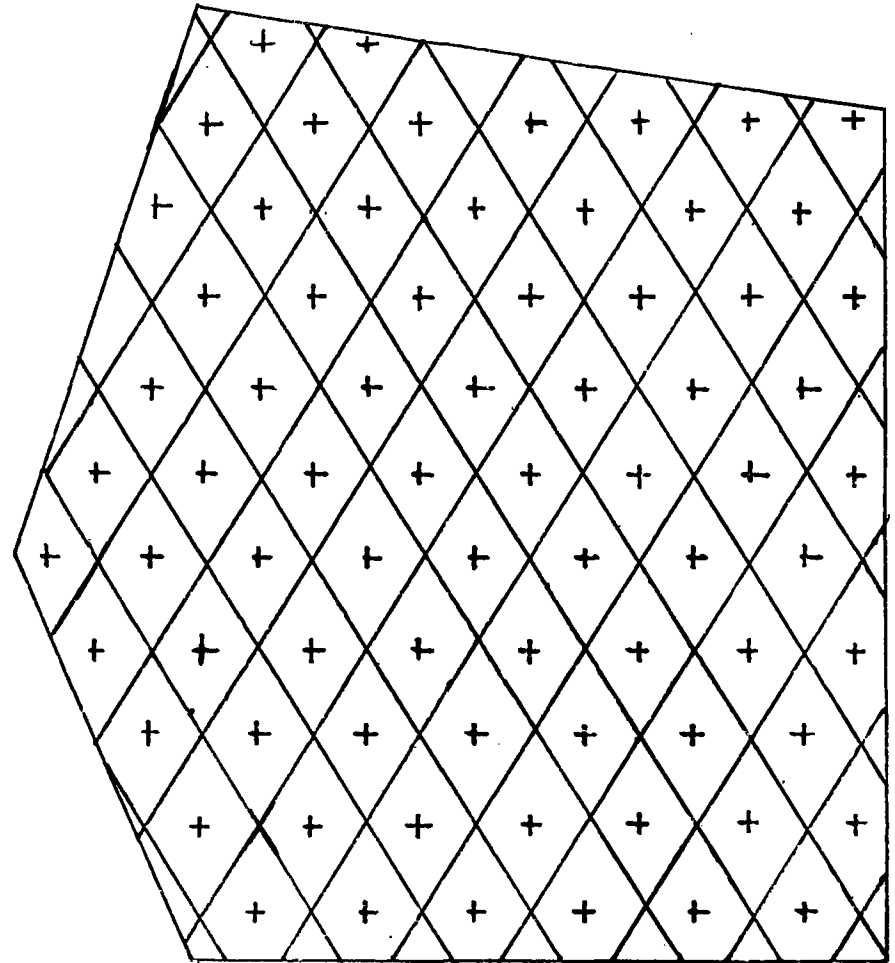
Planting Distance	Planting Systems				
	<i>Feet</i>		<i>Square</i>	<i>Triangular</i>	<i>Quincunx</i>
22 × 22	90	104	—
24 × 24	75	87	—
26 × 26	64	74	128
28 × 28	55	64	112
30 × 30	48	55	96
					<i>Rectangular or Oblong</i>
22 × 24	81
24 × 26	69
26 × 28	59
28 × 30	51

[*Note*: A demonstration of triangular planting may be seen at the north end of Ratmalagara Research Station, Madampe, N.W.P., and at the Coconut Nursery, Hettipola.—Ed.]

FIG. I.—SQUARE AND TRIANGULAR PLANTING.



64 Palms per Acre.



74 Palms per Acre.

S. A. M. de Silva.