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HOW TO LAY OUT YOUR CASHEW PLANTATIONS

By Dr. P. Abraham

While extensive plantings of the cashewnut tree is proceeding apace in various parts of this country, the attention of the cashew planters may be drawn to the very important fact that to obtain maximum yield of cashewnuts and to make the planting of the tree really useful in various other ways, plantations should be laid out in such a way as to give the trees scope for normal development ensuring vigorous growth and maximum productivity.

It will be also of the greatest additional value to the land if the lay out of cashew plantations is devised in such a way as to check soil erosion and thereby conserve soil moisture, which are among the most outstanding problems relating to the agricultural, forest and other lands in India.

At present India holds the monopoly in cashew kernel exports supplying more than 90 per cent of the world's demand for cashew kernels and earned for the country Rs. 14. 54 crores in foreign exchange this year. As the indigenous production of cashewnuts is not much more than a third of the at least 1,50,000 tons required by the factories in this country, the Government are taking very active steps through big development schemes to greatly increase the area under this dollar earning tree crop in all parts of India where it can be grown.

Till about a quarter century ago, i. e., before the manufacture of cashew kernels emerged as an industry in India, cashew has essentially been a wasteland crop in this country on which very little attention was bestowed. In those days the tree was invariably planted along the borders and corners of house compounds and outlying areas which were considered unsuitable for any other crop and also mixed with other trees. Only recently systematic cultivation of the tree on plantation scale has been attempted on the West Coast of India.

Cashew tree is really a multi-purpose tree of great value and in these days of great efforts to grow more trees in the country, the cashew plantations should be laid out in such a way as to ensure the maximum production of nuts and the various other by-products of the tree as well as to help in checking soil erosion.

The Portuguese introduced the tree into India about 400 years ago mainly for the purpose of checking soil erosion. As is well known prevention of soil erosion incidentally conserves soil moisture.

The tree provides excellent firewood after its productive life of about forty to fifty years.

The wood of the cashew tree is also used for packing cases, boat making and for making charcoal. In fact there is no part of the tree that is not useful in one way or another.

No systematic experiments seem to have been conducted hitherto to determine the optimum spacing of the cashew trees in plantations to obtain the maximum yield of nuts. Such experiments would take decades to give useful information on the point. The spacing now adopted is 15 to 25 feet between trees or 30 x 30 feet in very rich soil. In most regions 15 x 15 feet or even 20 x 20 feet is observed to be too close a spacing resulting in over-crowding and very poor yields of nuts thus defeating the very purpose of such plantations.

The cashew tree is a very hardy and highly drought resistant tree thriving in wastelands where no other crops can be grown, even in areas with only 25 inches of rainfall.

However, the tree responds very well indeed to richness of soil and abundance of soil moisture. In fact soil moisture conditions seem to be the all important factor affecting the development and productivity of the cashew tree.

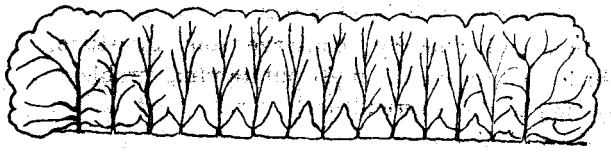
It is also an observed fact that the cashew tree exerts the greatest drain on the fertility and moisture content of the soil that nothing else will grow within about 25 to 30 feet of the tree.

In closely spaced cashew plantations in the low rainfall areas it is a common sight to see the trees along the borders, saddles and the more moist sides of any water course, growing vigorously and yielding profusely while the tree in the interior of the plantation remain stunted and giving comparatively very little yield. These are evidences to show the very keen competition among the trees for soil moisture.

The above sketch illustrates the behaviour of cashew trees in a closely spaced plantation in low rainfall areas and sandy coastal belt. Notice the stunted growth of trees in the interior of the plantation.

Cashew trees behave similarly in many of the scattered small plantations on the sandy East Coast belt. Here where there is plenty of soil moisture the limiting factor may be the low fertility of sandy soils.

In the heavily raining areas where there is not much dearth of soil moisture, the trees in closely planted fields being denied the required space and scope for normal development, grow thin, lanky and tall and remain largely unproductive. Close and even spaced lay out, therefore, does not seem to be condusive to the full and proper development of the cashewnut tree, either in the dry and low rainfall areas or the more moist heavier rainfall areas as well as in the sandy coastal belt.



The above sketch illustrates the behaviour of cashew trees in a closely spaced plantation in heavily raining areas. Notice the lanky growth of trees in the interior of the plantation.

In situations with favourable moisture conditions and very wide spacing the trees grow luxuriantly to a height of 30 to 40 feet, often with a spread of about 30 feet and yielding profusely. This is commonly the case with segregated solitary cashew trees also.

All these observations go to show that to obtain normal growth and maximum productivity of nuts and other by-products of the tree, the trees should be given the optimum spacing and other conditions in the lay out of the plantations.

In the States of Kerala, Mysore, Madras, Andhra Pradesh, Bombay, Orissa, Bengal, Assam and Andaman & Nicobar Islands where there is very great scope for expansion of cultivation of the cashew tree the land available for the purpose may be divided into the following categories:

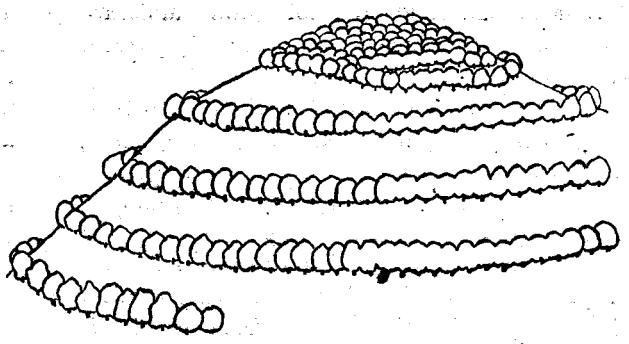
(1) The sandy coastal belt which is generally level land.

(2) The undulating country and the sub-montane areas of low hills upto an elevation of 1000 feet which are usually sloping land.

(3) Slopes of hills upto an elevation of 2000 feet.

(4) Hill slopes ranging from 2000 to 3000 feet elevation where cashew trees do not yield much but may be planted mainly for afforestation of disforested areas.

In the first three categories of land, cashew planting may be done in lines 60 feet apart with a spacing of 15 feet between trees in the line. The lines may be on level trace. On lands of considerable slope and heavily raining areas such lines of trees may be along the contour with a gradient of 1 in a 100. Although by this kind of spacing the number of trees per acre remains the same as in the 30 x 30 feet spacing, the trees will get vastly more scope for normal growth and development and may yield nuts at least double the yield



The above sketch illustrates the method of lay out of cashew plantations on hill slopes in widely spaced lines (60 feet or more apart), if necessary along the contour. Notice the uniformly spaced grove at the hill top.

per acre of trees planted with even a 20 x 20 feet spacing. The sixty feet spacing between lines gives the trees sufficient moisture and nutrition for full development. The space between trees in the line may be increased to 20 feet according to the variable conditions of the soil and land. At the top and on ridges of hills where tree growth and yield are usually very poor, planting may be done with a 20 x 20 feet or even a 15 x 15 feet spacing as groves to help conserve moisture prevent washes during the rainy season and act as windscreens.

The advantages of planting cashew trees in widely spaced lines are borne out by the behaviour of trees planted on borders of house compounds and field bunds where they grow luxuriantly and yield profusely, taking advantage of the wide space available on either side of the line of trees.

In the coastal areas of the first category and other areas subject to strong winds the cashew tree has a tendency to spread out extensively and does not grow tall. In such areas too planting of the tree in lines even 100 to 200 feet apart would seem to be the most suitable lay out for normal growth and productivity.

Besides high yields and soil and moisture conservation there are also other important advantages in planting cashew tree in widely spaced lines. It is a common practice to grow ginger, chillies, pulses, sweet potato, ragi, tapioca and even paddy as intercrops in cashew plantations in the first three or four years of planting cashew. Between very widely spaced lines of cashew trees the growing of such intercrops can be continued and made a perpetual affair giving additional returns from the land.

The sandy coastal belt in the Andhra Pradesh is very commonly used for raising nurseries of paddy and tobacco. Fruit trees like mango and guava as well as vegetables are also usually grown in this area. Such nurseries, vegetables and fruit crops can be most conveniently raised in-between widely spaced (100 to 200 feet or more if necessary) lines of cashew trees.

In coastal areas subject to strong winds lines of cashew trees would also serve as magnificent windscreens if they are laid at right angles to the direction of strong winds. Such windscreens are also a protection to the crops against drifting sand during seasons of strong winds.

Cashew trees planted along the borders and boundaries of fields in orchards and other annual crops in the interior regions also, are known to serve as excellent windscreens.

In South Kerala where food crops and other cash crops are intensively cultivated there is now very little wasteland available for cashew growing. In these regions cashew planting may be done along borders of sufficiently large holdings without interfering much with the growing of food crops.

In forest lands of the fourth category, i. e., lands from 2000 to 3000 feet elevation which are usually slopy and often steep, cashew trees do not give much yield of nuts and will be rather stunted in growth. Here planting is done mainly to afforest disforested hill slopes with a view to check soil erosion. The trees here may be spaced 20 x 15 feet and on very steep land the lines 20 feet apart may be along the contour with a gradient of 1 in 100 or even level trace according to the lie of the land.

The States of Madras and Kerala have already covered more than 20,000 acres with cashew during the past year and tens of thousands of acres in various parts of India will be put under the cashewnut tree during the Second Five Year Plan. Unless these plantations are laid out properly a good proportion of the enormous amount of money and energy which go to it may be wasted. This should on any account be avoided.

It is needless to emphasise here the incalculable benefit bestowed on the land by the check on soil erosion by the proper lay out of cashew plantations.

Apart from lay out a factor of fundamental importance in stepping up production of cashewnut is the inherent quality of the trees planted. The seed material used for raising plantations should be from selected high yielding trees producing nuts of the desired quality.

The large majority of trees now standing in the cashew plantations of the West Coast are inherently poor yielders simply because the plantations were raised mostly from unselected seed obtained perhaps from the market, with the result that very poor yields are obtained from most of these plantations.

Yield per acre of cashewnuts may be increased several fold if plantations are raised with seeds of selected high quality trees.