

## Production of Broad-leaved Suckers in Bananas

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The occurrence of two types of suckers in banana plantations, the sword and the broad-leaved or water suckers is well known. Cook (1911) attributed the development of sword suckers to the growth of buds on the rhizome situated near the surface of the ground. Skutch (1929) says that this "phenomenon is one of apical dominance". Preliminary investigations on the occurrence of broad-leaved suckers were undertaken and materials collected by the excavation of a number of broad-leaved and sword suckers in various stages of development. These reveal in general that broad-leaved suckers arise under any one or more of the following circumstances:—

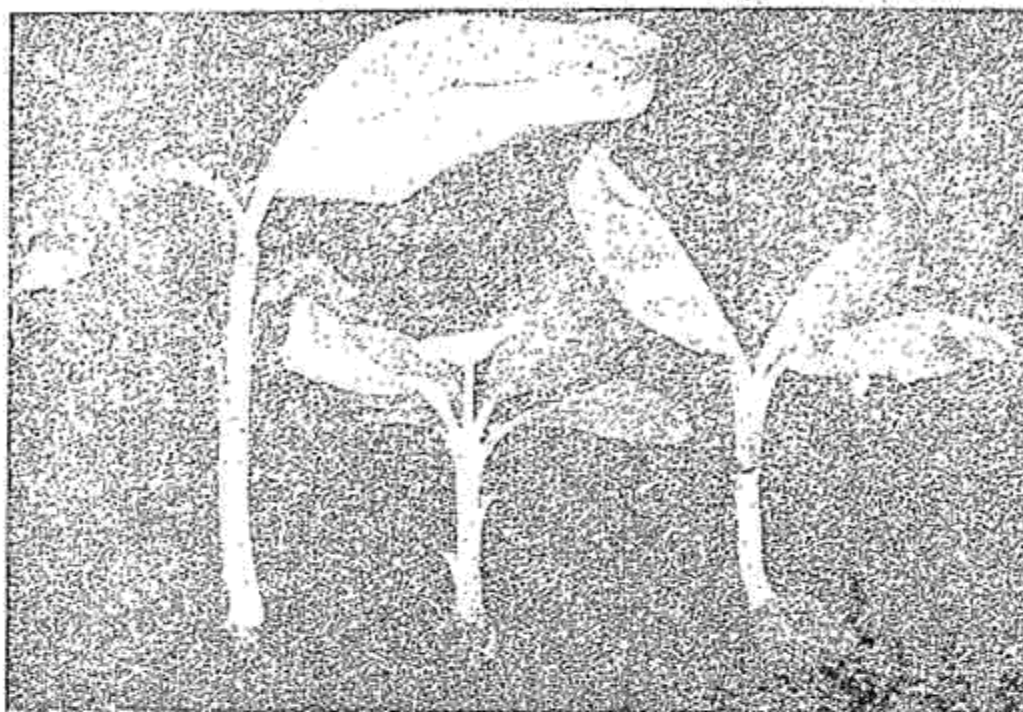
(i) If the bud from which the suckers sprout is small and is attached to the parent corm by a narrow connection. (Vide photographs).

(ii) If the parent corm and tissues surrounding the buds which produce the sucker are diseased.

(iii) If the parent corm or portion of the corm which contains the sprouting bud is injured or cut and separated to small bits or damaged by insects.

(iv) Lack of moisture or ill-drained conditions prevailing in the soil for a sufficiently long period affect the supply of nutrients to the buds. The sprouting of water suckers in banana plantations immediately after the first rains following an acute and prolonged period of drought has been noted. At the Banana Research Station, Aduthurai, in a trial designed to test the efficacy of corms and bits as planting material, 144 corms and 144 bits were planted in a portion of the wet land in January 1950. Due to ill-drained conditions in the field, which continued for a period of over a month after planting, their sprouting was very poor. Only 28 corms and 34 bits sprouted. On examination it was found that all the corms and bits which had not sprouted had become rotten. It was also observed that all the sprouts from the corms and bits were broad-leaved suckers and that portions of all the corms and bits which had sprouted were diseased.

(v) If the banana plantation is too old, over-crowded and shady, not desuckered properly or not manured adequately.



1. Broad-leaved sucker from a small sprouting bud.  
2 and 3. Broad-leaved suckers from diseased corms.

These suckers therefore are not at all the normal phenomenon in a healthy banana area. The senior writer did not find even one per cent production of broad-leaved suckers from the sprouting of the corms and bits planted with sufficient size in the pits of commercial banana plantations in Jamaica. It is a recognised practice there to cut the parent corm into two bits each with a good bud, only if the diameter of the corm exceeds  $4\frac{1}{2}$  inches and upto  $7\frac{1}{2}$  inches. The corms are cut into four if their diameter exceeds  $7\frac{1}{2}$  inches. It can therefore be taken that the broad-leaved suckers arise due mainly to environmental factors causing the dislocation of adequate supply of nutrients to certain ill-placed buds in the corm of the mother clump. Even under these circumstances the total number produced is by far smaller than the total number of sword suckers produced.

Excavation studies have shown that the attachment of the sword suckers to the parent corm is closer and firmer and as such the sword sucker in the early stages of its growth draws freely from the reserve food material stored by the mother plant. It builds up a sturdier pseudostem than the broad-leaved sucker. Due to the easy availability of food material from the parent corm, the function of leaves to build up starch is not so essential in the case of a sword sucker as in the case of a broad-leaved sucker and therefore the leaves of the sword sucker are narrow and attain full lamina size only gradually. Due to the weak

attachment of the broad-leaved sucker to the parent corm, the availability of food supply to it from that source becomes restricted. This leads to a weak and stunted pseudostem in the early stages and an adaptation to form a broad leaf to build up food material.

The initial growth attained by the sword sucker is recognised by all to be superior to the broad-leaved sucker to such an extent that planters throughout the world take care to eliminate broad-leaved suckers at the time of planting. After some time when both the type of suckers are planted without the parent corm, it is possible that the rate of growth of either may vary being subject to environmental factors also and the broad-leaved sucker may approach or even overtake the growth made by the sword sucker. Such a study, with the ultimate performance of each type of sucker as the main objective is well worth investigation and is now under way at the Central Banana Research Station at Aduthurai.

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**Rooting of Cuttings — Part II**

*Rooting media, depth of planting and basal cut*

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**Introduction:** Among the various factors influencing the rooting of cuttings, the rooting medium demands, perhaps, the foremost consideration. No less important are depth of planting and the position of basal cut. A precise knowledge on these aspects will be of practical benefit to a nurseryman dealing with large-scale propagation of fruit and ornamental plants.

Numerous instances have been cited by workers on the variable performance of cuttings of the same species in different media. The more common among the media put to test were sand, pumice, peat, peat moss, peat and soil, fiber, saw-dust charcoal etc. Water has also been tried by some. The results of these studies are not only diverse but are also in some cases inapplicable to conditions obtaining here, so that it seems necessary to conduct independent trials with cuttings commonly met with in our regions, before one can safely make a satisfactory