

USE OF COIR DUST FOR MOISTURE CONSERVATION

Moisture conservation in coconut lands, particularly in the dry and intermediate zones is an important management practice. In fact, it has been observed that palms suffer less from drought effects in estates which regularly carry out moisture conservation practices. Traditionally, coconut husks have been buried in pits for this purpose. Experiments conducted by the Coconut Research Institute have demonstrated that coir dust can be used effectively instead of husk for moisture conservation.

This article briefly describes the use of coir dust in pits and its beneficial effects and endeavours to create an awareness of this new practice amongst coconut growers.

Beneficial effects of coir dust burying

Coir dust has the ability to absorb and retain ten times its weight of water. Experiments conducted in the intermediate zone have clearly indicated the increase in nut and copra yield due to moisture conservation by coir dust. In fact, the performance of coir dust compares very favourably with that of husks in moisture conservation. In gravelly soils, burying of coir dust gave a 20% increase in the number of nuts and 15% increase in copra yield. Substantial increases were noted in sandy soils too.

These experiments have also shown that when coir dust is used for a long period, the water holding capacity of the soil is considerably improved. The soil also becomes more porous allowing better root penetration. These conditions induced a more active root system in palms resulting in more roots.

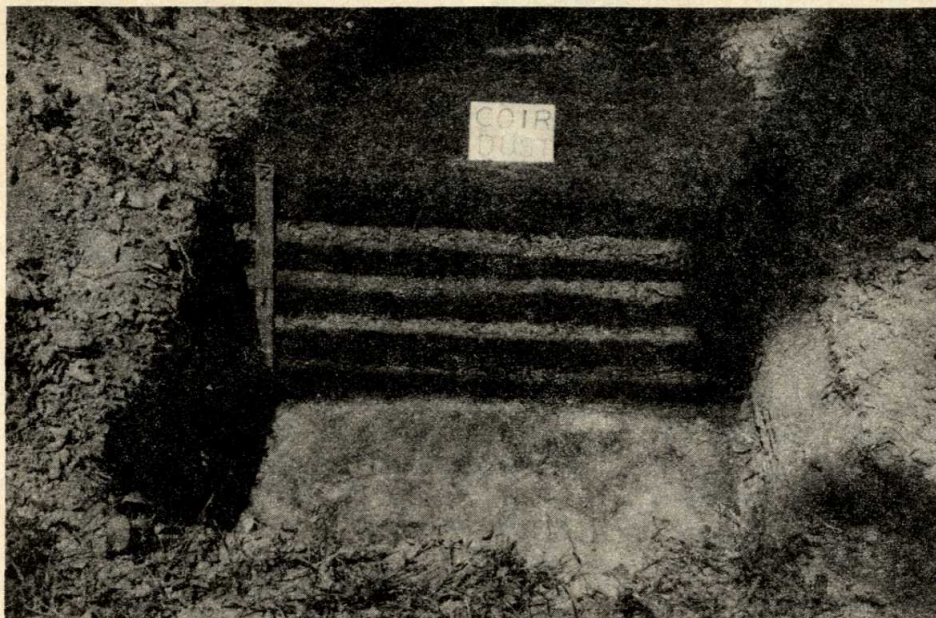
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Method of burying coir dust in pits

Coir dust can be buried instead of husks in pits. The size and location of pits in relation to the coconut palms are similar to practices adopted in husk pits. The maximum benefit can be obtained by burying coir dust in layers 8 cm (3 inches) thick alternating with 5 cm (2 inches) thick soil layers. A pit of the size 8×4×2 ft will require about 50 small cane baskets of coir dust. The pit should be filled upto the ground level and the remaining soil is heaped on top of the pit. Since coir dust contains only about 0.3 to 0.4% nitrogen on a dry weight basis, it would be useful to grow a leguminous cover crop on top of the pit, to reduce depletion of soil nitrogen. At the current rates, the cost of completing a coir dust pit of the above size, including labour and materials, is estimated around Rs. 45.00 to Rs. 50.00.

Some practical hints on the coir dust

1. Some growers believe that the use of coir dust will encourage the breeding of black beetle (rhinoceros beetle). If coir dust is used alone and if the pits are exposed, there is a likelihood of black beetles being attracted to them for egg laying. However, if coir dust used in the manner described here, there is no danger of black beetle breeding. In our experiments, we have not observed this pest in coir dust pits.



A profile of a coirdust pit showing alternate layers of coirdust and soil.

2. Some believe that continued use of coir dust could increase soil acidity. We have found no evidence to support this.
3. Since coir dust contains 30–40% lignin, it decomposes slowly so that beneficial effects of coir dust could last for a period of 8–10 years, which is longer than the effective period of husk pits. Also, old coir dust can be effectively used for burying.
4. Coir dust should not be buried without alternating with soil layers, for it tends to harden, thereby encouraging the formation of a dense mat of fibrous roots.
5. Coir dust should not be buried in low-lying areas subject to water logging.

Conclusions

Coir dust in pits increased nut and copra yields, particularly in gravelly soils as a result of its moisture conservation ability and improvements to the soil. It can be recommended for burying in pits.

Further the use of coir dust would help to save husks for the coir industry as well as to dispose the heaps of accumulated coir dust.

The Coconut Cultivation Board has extended the subsidy scheme for burying of husks to the use of coir dust. Further details can be obtained from the nearest Coconut Development Officer or from a Regional Office of the Coconut Cultivation Board.