

Outsmarting Effects of Episodic Droughts in Coconut Farms with *in Situ* Soil Moisture Conservation Techniques

Soil moisture conservation and coconut yields are highly correlated and the adverse effects of moisture deficit on the latter are long lasting due to the perennial nature of the crop. Farmers need to adopt any of these conservation measures depending on available resources in the farm to mitigate moisture stress.

❑ Base-Mulching of Coconuts with any Crown Residues

- ✓ Very ideal in low to medium rainfall areas
- ✓ Conserves moisture and improves water infiltration
- ✓ Enriches soil with organic matter and valuable nutrients upon decomposition



❑ Applying Organic Soil Amendments (Compost, Manures, Cocopeat) on Coconuts and Intercrops

- ✓ Improves soil structure thus better root penetration and water percolation
- ✓ Increases soil organic matter hence increase water and nutrient holding capacity
- ✓ Provides valuable nutrients to the soil



❑ Covercropping with Leguminous Crops

- ✓ In monocropped farms, maintaining good ground cover with leguminous covercrops protects the soil from the impact of extreme weather patterns and preserve soil moisture
- ✓ Enriches the soil with organic matter and nutrients and avoids soil compaction
- ✓ Provides biological tillage improving water percolation capacity of soil



❑ Burying Cocopeat/Coconut Husk in Pits or Trenches around the Palm Canopy

- ✓ Cocopeat or chopped husk for water harvesting
- ✓ Improves water holding capacity of soil
- ✓ Increases organic matter content



❑ Adopting Upland Micro-Catchment Technique using Coconut Husk in Sloping Areas

- ✓ Piling husk in contour furrows to reduce water velocity, run-off and for water harvesting and conservation



❑ Drip Irrigating Coconuts

- ✓ A bearing palm need at least 30 liters of water per day.
- ✓ Irrigating improves yield
- ✓ Drip irrigation makes efficient use of water.



☐ Chloride Application on Coconut

- ✓ Common salt or sea salt is the cheapest and most practical source of chlorine (Cl) for coconut, especially if the soil is inherently high in the macronutrient K (> 0.70 meq./100 soil).
- ✓ It is always desirable to increase the leaf Cl concentration of bearing trees to at least 0.60% to avoid the crop's physiological stress due to the long and strong drought or El Nino.
- ✓ The average recommendation for NaCl at different development stages of the palm is shown below:

Stage / Age	Rate of NaCl/ plant
Nursery	50 g
Field-planting (FP)	100 g
Six month from FP	150 g
One year from FP	500 g
Two years from FP	750 g
Three years from FP	1.0 kg
Four years from FP	1.5 kg
Five years from FP	2.0 kg

References:

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Guide to Follow in the Application of Chloride on Coconut

- ✓ Apply every two years to minimize the depressive impact of drought – ensuring a shorter time for trees to recover from the El Nino.
- ✓ Apply at least a month before the onset of long dry period so water will be available to the crop for the accompanying cations (Na^+ , K^+ , NH_4^+) to be easily absorbed by plants
- ✓ Apply fertilizer within the soil feeding zone (1 to 1.5 m around the trunk base) to avoid Na and Cl toxicities on sensitive intercrops like fruit trees
- ✓ Broadcast fertilizer over weeded area in flat to slightly sloping areas
- ✓ Broadcast, followed by fork-in or soil incorporation at 2 to 3 inches depth of soil when common salt combined with nitrogen fertilizers as urea (46-0-0) and ammonium sulfate (21-0-0)
- ✓ Make 8 to 10 holes (3 to 5 inches deep) around the trunk base sloping and hilly areas; amounts of fertilizers distributed equally into these holes and covered with the dug soil
- ✓ Apply a total of 50 g NaCl/seedling for the 6 to 8 month old seedlings to have big girth (region below the oldest living leaf) and normal number of healthy leaves to cope with the adverse soil conditions and dry period water stress following field-planting.



For more info. and assistance, please contact:



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