

Hoolehua PMC News

Helping People Help The Land

The Busiest Bee!

A worker honeybee is any female honey bee that lacks full reproductive capacity. They do everything but lay eggs and mate. They build the comb from wax extruded from glands under their abdomen. They clean, defend, and repair the hive. They ventilate, cool and heat the hive. They feed the larva, the queen, and the drones.



Some workers collect nectar, some collect pollen and some do both. The ones that collect pollen are the one most important to farmers because they pollinate our crops. Workers gather pollen into the pollen baskets on their back legs, to carry back to the hive. Nectar is sucked up through the proboscis, mixed with enzymes in the stomach, and carried back to the hive, where it is stored in wax cells and evaporated into honey. Both nectar and pollen is used as food for the developing brood or the bee eggs. Worker bees may travel up to 55,000 miles during the honey flow to produce one pound of honey. Each year an individual worker-bee can produce about 1/12 of a teaspoon of honey and about 1/80 of a teaspoon of beeswax. However, an entire colony can produce 200 lbs of honey annually. You can imagine how many flowers were pollinated.

Time To Rip?

Deep ripping breaks up traffic-induced or naturally occurring layers with high soil strength. With deep ripping, roots can penetrate the soil faster and deeper to absorb more soil moisture, capture more soil nutrients and improve yield.



On the other hand, deep ripping is time consuming and costly. Timing of ripping is vital but the results can last for many years if appropriate management practices are utilized. For the greatest crop benefit, the depth of ripping must be below the hard-pan and this may mean penetration to at least 12 inches. Moist soil throughout the ripping depth is necessary to obtain sufficient results. Soil that is moist will reduce the wear of ripper points and also the power requirements of the tractor, which translates into saving fuel. The main concern when deciding to utilize deep ripping within the farming system is the availability of desirable soil moisture conditions. Soils that are too dry will increase fuel consumption significantly. On the other hand, soils that are too wet will result in smearing or cutting the soil like warm butter. When the suitable soil conditions do arise, be sure to allow enough time for seedbed preparation.

Plant of Interest



Hybrid *Leucaena*

The *Leucaena* genus is used widely as livestock forage, fuelwood, and green manure. It suppresses invading grasses and nurtures and stabilizes the soils. Its capability of nitrogen fixation, rapid growth, and deep root system also make it very useful in reforestation, bioremediation, and soil conservation.

Currently at the Hoolehua PMC, a propagation study is being conducted on a hybrid *Leucaena* known as KX3 (*L. leucocephala* x *L. diversifolia*). This hybrid is of interest because of its inability to produce viable seed. Unfortunately, it is also very difficult to propagate by cuttings. The study will look at various propagation techniques to increase rooting success of KX3 cuttings.



Hoolehua Plant Materials Center

4101 Maunaloa Highway
P.O. Box 236
Hoolehua, Hawaii 96729
Phone: (808) 567-6885

Glenn S. Sakamoto
PMC Manager

glenn.sakamoto@hi.usda.gov

Kawika Duvauchelle
Natural Resource Specialist

Keni Reyes
Biological Technician

Andres Juario
Biological Technician Aid

Plant Materials Specialist
Robert Joy
robert.j.joy@hi.usda.gov

EAST AREA Survey Results

The Hoolehua Plant Materials Center would like to thank all who had participated in the Survey for the East Area. We appreciate all the time and effort that was put into completing it in a timely manner. We tabulated all the data and have determined the top 10 practices with plant material needs for the East area. This information will play an integral part in helping us to put together our Plant Materials Long Range Plan and also the Plant Materials Center Long Range Plan.

Pacific Island Area: East Area Plant Materials Priority Needs

1. Pasture and Hay Planting
(Forage and Biomass Planting)
2. Cover Crop
3. Conservation Cover
4. Mulching
5. Tree/Shrub Establishment
6. Critical Area Planting
7. Hedgerow Planting
8. Windbreak/ Shelterbelt Establishment
9. Grassed Waterway
10. Restoration and Management of Rare or Declining Habitats



Also, thanks to Butch Haas (center) and Hui Hoolana for hosting the DC meeting.