

Effect of branch pruning and paclobutrazol application on mango

PRUNING the branches of mango trees aims at stimulating the formation of more shoots so that the branch field becomes wider, while paclobutrazol applications stimulate the growth of the panicle. Pruning branches by cutting precisely the last shoot on the node soon after harvesting increases shoot formation by as much as 47 to 50 %, and results in 3 to 4 shoots per branch. Paclobutrazol applications stimulate flowering 2 months after the application, or

2 months earlier than natural flowering. The application increases fruit production by as much as 73 -142 %.

News source: **Assessment Institute of Agricultural Technology (AIAT), Karangploso, Indonesia**

For further information:

E-mail: btpkl@malang.wasantara.net.id

Non destructive estimation of brix in grapes using an acoustic volume meter

SINCE grapes grow in bunches, the nondestructive estimation of Brix in grapes by the near-infrared method cannot be used. Another method, therefore, to take the place of the near-infrared method has been developed. 1) A high correlation was found between the specific gravity (weight/volume) of a bunch of grapes and the Brix of its juice. Therefore, if the specific gravity of a bunch is obtained by measuring both the volume and weight of a bunch, the Brix can be estimated by a regression line between the specific gravity and Brix. The statistical error of the measurement was around 0.5 (Brix).

The volume of a bunch of grapes can be measured very quickly by means of an acoustic volume meter. Compared with the near-infrared method, this new method using an acoustic volume meter has the merit of lower cost, while the device is smaller. Accordingly, this method seems to be best suited to small-scale fruit sorting and retailing.

News source: **National Institute of Fruit Tree Science, Japan**

For further information: Jour. Japan Soc. Hort. Sci. 68 (Suppl.2), 1999

Production of Cabbage Seed Production System in the Subtropical Lowlands

SEED PRODUCTION of common cabbage in the tropics and/or subtropics is hindered by a lack of low temperatures. Winter temperatures in the lowlands cannot meet the chilling requirement for flower induction. Even if plants can be vernalized at high altitudes, flowering and seed development will be poor, because of high humidity and high temperatures in the following rainy season. We developed a seedling vernalization method to overcome the chilling requirements, so that cabbage seed could be produced in lowland tropics over the winter season.

Four cultivars of cabbage, i.e. K-Y cross, Sha-Phon, Summer Summit and Yensen, were sown in plug trays. The seedlings were transplanted into 3.5-inch pots at 45, 55 and 55 days after sowing. The plants were then vernalized at 5°C for 45 days with 16 hr/day of illumination (1,000 lux). Vernalized plants were planted out in the field on November 24, 1998, and seeds were harvested on March 10, 1999. The results show that the seedling age and cultivar significantly interacted in determining the seed yield. In the variety "Yensen", seed yield decreased with an increase in seedling age at vernalization. The

highest seed yield in the “K-Y cross” and “Summer Summit” were found at a seedling age of 55 days. The 45-day-old plants of “Sha-Phon” produced the highest seed yield. Among the combined treatments, highest seed yield in the variety “Yensen” was found when 45-day-old plants were vernalized for 45 days. They produced 71.5 g seeds/plant. The lowest seed yield was the variety “Summer Summit”, when 45-day-old plants were vernalized for 45 days. They produced only 48.7 g

seeds/plant. This experiment indicates that cabbage seed production in the subtropic lowland is feasible if seedlings are vernalized.

News source: **Tainan District Agricultural Improvement Station, Taiwan**

For further information: Research Bulletin of Tainan District Agricultural Improvement Station 37:56-64, 2000

Use of Coconut Water as a Growth Regulator for Tea Cuttings (Camellia Sinensis)

COCOONUT water is an agricultural by-product that can be used not only as a beverage and as a growing medium in tissue culture, but also as a growth regulator. It contains useful compounds such as nicotinic acid, auxin, gibberellin, pyridoxine and thiamin. Research has indicated that the application of coconut water at a rate of 2.5 % - 10 % (v/v) is able to

increase by up to 95.83 % the number of tea cuttings which successfully root.

News source: **Center for Tea and Quinine Research, Gamburg, Indonesia**

For further information:
E-mail: gamburg@bdg.centrin.net.id

Production of non-stinging honeybees by gamma-ray irradiation

HONEYBEES, *Apis mellifera*, have been well recognized as pollinators of crops. They are, however, aggressive and possess a venomous sting, which has limited their utilization to a certain degree. Successful production of non-stinging honeybees was achieved by using gamma-ray irradiation. Non-stinging honeybees can be produced by gamma-ray irradiation, through which their stingers are disabled. Two methods can be used. In the first method, queen bees were exposed to acute gamma-ray irradiation of 20 to 50 gray (Gy). About 25 % of these queens produced non-stinging honeybee workers at a rate of 0.5 to 1.0 %. This characteristic of no sting proved to be a hereditary one.

Therefore, it is possible to establish a strain of non-stinging honeybees by further breeding and selection. The other method involves acute gamma-ray irradiation of 30 Gy during the developing stages of metamorphosis from mature larvae into pupae. In this method, non-stinging adult honeybees were produced at a rate of 97 %. In this way, artificial colonies of non-stinging honeybees can be obtained, which can easily be used as pollinators of crops.

News source: **National Institute of Animal Industry, Japan**

Rice husk as a growth medium for tea cutting

RICE HUSK is an agricultural by-product that is easy to obtain. Its price is low, and it is light in weight. It can be utilized as a growth medium for plants. The best mixture is 85% rice husk and 15% topsoil, or 75% rice husk combined with 25% topsoil.

News source: **Center for Tea and Quinine Research, Gamburg, Indonesia**

For further information:
E-mail: gamburg@bdg.centrin.net.id