

# Visit to Essential Oil Processing Plant and Stingless Bee Honey Production Site

AGRICULTURAL AND FOOD ENGINEERING TECHNICAL DIVISION

reported by



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On 5 April, 2017, the Agricultural & Food Engineering Technical Division (AFETD) organised a technical visit to the Malaysian Agricultural Research and Development Institute (MARDI) in Serdang, Selangor, for 21 IEM members and non-members.

The participants were welcomed by Ir. Mohd. Fazly Mail, a senior scientist from MARDI who was also an AFETD committee member. First, the participants attended a briefing on the programme which included technical talks and visits to the essential oil processing plant and the stingless bee honey production site.

There was also a briefing on an incubator programme. The first speaker was Encik Zulkifli Abdul Rahman from MARDI Kuala Linggi, Melaka, who talked about the production of essential oil.

Two distillation methods are adopted: Steam and hydro. Essential oils are extracted from various plants such as tea tree (*Melaleuca alternifolia*), kesum (*Polygonum minus*), patchouli (*Pogostemon cablin*), citronella (*Cymbopogon nardus* L), lemongrass (*Cymbopogon citratus*), sweet cinnamon (*Cinnamomum zeylanicum*), kaffir lime (*Citrus hystrix*) and lime (*Citrus microcarpa*).

In the second session, Encik Mohd. Fahimee Jaapar spoke on the production of stingless bee honey, focusing on farming and beekeeping. Stingless bee honey is said to have therapeutic properties and there is an increasing demand for this type of honey. The local name for stingless bee is kelulut and the common type found in Malaysia is *Trigona itama*. The participants were given an introduction to the stingless bee as understanding the behaviour of the bee would help increase the quality of honey production.

A colony of stingless bee can produce up to 500g honey each month and the bees will search for flowers within a 300m radius. The physiology of the flowers too will influence the quality, aroma and taste of the honey.

The last session of the technical talk, given by Cik Siti Shurazizah Sukhur, was on Inkubator, an incubation programme by MARDI Kuala Linggi. The programme is also to help new entrepreneurs in the production of their products, particularly essential oil. The incubator centre

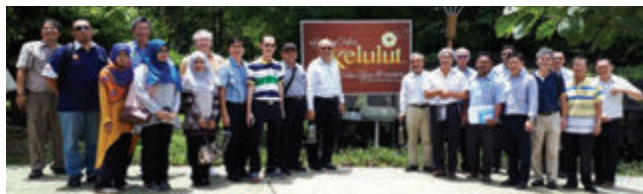
for the essential oil processing plant is certified by Australian Certified Organic (ACO) and acts as a technology transfer medium for those interested to start their own businesses. Some of the programmes offered include technical services, facilities/infrastructure services and business/marketing services.

After the briefing sessions, the participants boarded a tram to go to the essential oil pilot plant and the stingless bee farm. At the essential oil pilot plant, they learnt that the pilot plant was used for showcasing MARDI products during Malaysian Agriculture, Horticulture & Agrotourism (MAHA) and for product testing.

A larger-scale pilot plant was located at MARDI Kuala Linggi, Melaka and the participants were told that the pilot plant operated and manufactured essential oil on a daily basis.

After this, the participants visited the bee farm and had a taste of the stingless bee honey directly from the hives box.

At the end of the technical visit, AFETD chairman Ir. Yong Hong Liang, on behalf of IEM, presented Encik Zulkifli with a token of appreciation. ■



Group photo session



Delegates at the bee farm