CITRONELLA
Cymbopogon winterianus Jowitl

INTRODUCTION
Citronella oil is classified in trade into two types – Ceylon citronella oil, obtained from cymbopogon nardus, and Java citronella oil, obtained from cymbopogon winterianus. The Java type oil is produced and traded in greater volume than the Ceylon type oil, and it is the most widely used. Thus, the Java type oil is the subject of this report.

Citronella essential oil is widely used in perfumery, cosmetic and other fragrant products to give fresh, floral, green odour with citrus notes. In oriental medicine and aromatherapy it is applied as an antiseptic (especially antifungal) and antiphlogistic ingredient, and is also used as a calming antidepressant in various preparations. In natural cosmetology citronella oil is used to soothe dermatosis, skin infections of various origin, bad skin odour and eczema. On the basis of long time experience and numerous scientific publications, citronella oil is widely used as an active ingredient in insect repellent preparations, especially against mosquitoes (including dengue fever mosquito), ticks, head lice and stable flies (registered as insect repellent in USA since 1948 – EPA 021901). It is an effective natural bio-pesticide. It is also used in the flavour industry especially in fast food products.

The two main producers of Java citronella oil are China and Indonesia. With a world production of around 1,800 metric tons, China annual production varies between 800 and 1,500 metric tons, and Indonesia production between 250 and 500 metric tons. (Besar, 2005; IFEAT, 2011; Lawrence, 2009, Le 2009; Yeung, 2005).

In China, citronella is mainly grown in Java, as well as West and North Sumatra. In Indonesia, citronella is mainly grown in Java, as well as West and North Sumatra.

PRODUCTION AND PROCESSING CHARACTERISTICS
Citronella grows in clumps producing a perennial aromatic grass. The first harvest is around 6 to 8 months thereafter every 75-90 days from April to late December. The leaves are cut to around 5 cm from the base of the plant. The plant produces a better yield between years 2 and 3 of a 4 year life span, with yields of around 10 kg per hectare. Cutting is always undertaken first thing in the morning to obtain the maximum yield or around 18% of the leaves are left to dry for 4–8 hours to remove the excess moisture before distilling (IFEAT 2011).

The processing of the citronella takes place mainly at farm level.

SOCIAL AND ECONOMIC CHARACTERISTICS
In China, the economies of the production areas are comparatively underdeveloped. Cultivation and distillation is undertaken by farmers, and the crop is an important cash income source for them. About 20-30 thousand people are engaged in the citronella business in the producing areas. The total cultivation area is about 6,600 hectares. In the past, a conflict existed between the farmers and the provincial authorities over citronella production in that fuel for the distilleries was obtained from the wild forest and this has caused serious damage to the forest ecosystem (Le Li, 2009; Besar, 2005).

In China, considering an average production of citronella per annum of 400 metric tons, it is estimated that ca. 5,000 people make a living from citronella oil. Each farmer has an average of 2 hectares of land. One ha produces around 10 metric tons of citronella grass per annum. Total grass production for an average oil production of 400 metric tons is around 20,000 metric tons, i.e. 2,000 hectares and 1,000 farmer families, each family comprising a minimum of four members. The number of farmers could be doubled if non full time citronella farmers are taken into account, thus taking the number of people involved in the citronella business up to 10,000.

In Indonesia, considering an average production of citronella per annum of 200 metric tons, it is estimated that ca. 3,000 people make a living from citronella oil. Each farmer has an average of 1 hectare of land. One ha produces around 10 metric tons of citronella grass per annum. Total grass production for an average oil production of 200 metric tons is around 1,300 metric tons, 250 hectares and 2,500 farmer families, each family comprising a minimum of four members. The number of farmers could be doubled if non full time citronella farmers are taken into account, thus taking the number of people involved in the citronella business up to 10,000.

CONCLUSIONS

With a wide use, not only in cosmetics and perfumery but also as a proven active ingredient in insect repellent preparations and various medicinal purposes, citronella oil supports approximately 20 to 30 thousand people in the producing areas in China, where the crop is an important cash income source for farmers. Similarly, in Indonesia, it is estimated that the number of people involved in the citronella business could amount to as many as 10,000, with half of them making a living from citronella oil. These figures show the economic and social importance of this oil for people in the respective countries of production.

REFERENCES

