

# Citronella

## Harvesting

Citronella is cultivated for essential oil. Although, all the plant parts contain oil, leaves contain the maximum amount of oil. Therefore, only the leaves should be harvested. Harvesting is done by sharp sickle at about 20-45cm above the ground. The number of harvests, which can be taken during a year, depends upon the growth of the plants. Under favourable conditions, upto 4 harvests can be obtained in a year. The leaves are ready for first harvest, about 6 months after planting. The second and subsequent harvests can be taken thereafter at 2.5 -3 months interval. Harvesting too soon and too late affects the quality of oil adversely. The delay also causes the leaves to dry up resulting in decrease in yield of oil. While harvesting, only the leaf blade should be cut and the sheath should be left. This is because the sheath contains only little and poor quality oil. Flowering should be discouraged as it causes aging in plants and reduces their life span.

The same schedule of harvesting is to be followed during second and subsequent years. The Java citronella plantations remain productive for 5-6 years but the yield of leaves and oil is highest during second and third years, after which it starts decreasing. It is recommended that the plantation should be uprooted after 3-4 years and rotated with some small legume species. Horsegram is a very good rotational crop in south, cowpea or sunhemp (*Crotalaria* species) is recommended for north Indian plains.

### **Yield :**

On an average, the oil content is about 1% on the basis of fresh weight of leaves. Depending upon the nature of growth, the yield of fresh leaves is about 15-20 tonnes/ha in the first year and 20-25 tonnes/ha in the second as well as in the third year, after which the yield declines.

The yield of oil obtained during the first year is about 100 kg/ha and 150 kg/ha during second and third years. Under very favourable conditions, yield of 200-250 kg oil/ha can be obtained.

### **Uses :**

The oil is used mostly in perfumery, both directly and indirectly. Soaps, soap flakes, detergents, household cleansers, technical products, insecticides, etc are often perfumed exclusively with this oil.

It is also a valuable constituent in perfumery for soaps and detergents. Citronellal is occasionally used in traces in flower compositions of the citrus, cherry, ginger, etc. However, the greatest importance of Citronellal lies in its role as a starting material for further derivatives. Hydroxycitronellal can be prepared from citrinellal and it is a key ingredient in compounding. Hydroxycitronellal is one of the most frequently used floralizing perfume materials. It finds its way into almost every type of floral fragrance and great many non-floral ones. For soap perfumes, a slightly rougher grade is used. High grade is used in flavour compositions.

## Oil Contents :

<b>Chemical Constituents of Java type</b>	
<b>Chemical</b>	<b>Percentage</b>
Citronellal	32-45%
Geraniol	12-18%
Geranyl acetate	3-8%
Citronellyl acetate	2-4%
Linalyl acetate	2%
1-limonene	2-5%
Caryophyllene	2.1%
Linalool	1.5%
Farnesol	0.6%
Methylisoeugenol	2.3%
$\beta$ -elemene & $\gamma$ -cadinene	2-5%