

STORAGE STUDIES ON LEMONGRASS OIL

The lemongrass oil produced by farmers is usually stored for long time by merchants, exporters etc. before it is converted into final products. The farmers themselves may store it for some time before it is sold to merchants in anticipation of higher prices depending on the market fluctuations. Lemongrass oil is valued for the presence of citral, which is prone to oxidation during storage. There is every chance that the quality of oil may deteriorate by prolonged storage. Hence an experiment was conducted at the Artomatic and Medicinal Plants Research Station, Odakkali during 1981 to 1985 to study the changes that may occur to lemongrass oil during prolonged storage and the period up to which it can be stored.

Lemongrass oil from three places, viz., Odakkali, Pampadumpara and Mannuthy were collected and stored in small aluminium bottles. These bottles were completely filled with the oil, closed air tight and kept in darkness. As many number of bottles were kept according to the number of intervals of test and one bottle was taken for analysis at an interval. The oil was analysed for citral content by the sodium metabisulphite method (Guenther, 1948), specific gravity and solubility in

70% alcohol (ISI, 1969) at the time of collection and at half yearly intervals for five years.

The results of the five year study (Table 1) showed that the citral % and solubility of the oil gradually decreased and the specific gravity in general increased with increasing period of storage irrespective of the place of collection of the oil. The increased specific gravity was visually noticed by the increased viscosity of the oil. The citral % of Odakkali and Pampadumpara oil remained almost static up to three years eventhough a decrease was observed after twelve months. But the citral % of Mannuthy oil showed a decreasing trend by increase of storage period, except during the second year of storage. Its solubility also decreased gradually.

From the results it can be inferred that lemongrass oil can be stored in aluminium containers for a maximum period of three years without affecting the citral content to a larger extent. The containers should be filled completely with oil, sealed air tight and kept in darkness. This will prevent oxidation keeping the citral content practically stable.

Table 1. Properties of lemongrass oil during prolonged storage

Period storage (months)	Odakkali			Pampadumpara			Mannuthy		
	Citral (%)	Specific gravity	Solubility (v/v)	Citral (%)	Specific gravity	Solubility (v/v)	Citral (%)	Specific gravity	Solubility (v/v)
0	87.0	0.8886	1.8	85.0	0.8875	2.0	82.0	0.8890	2.1
6	86.0	0.8888	2.0	85.0	0.8895	1.9	80.0	0.9013	2.0
12	84.0	0.8908	2.0	84.0	0.8900	1.9	80.0	0.9028	2.0
18	84.0	0.8910	2.0	84.0	0.8910	2.0	78.0	0.9035	2.0
24	84.0	0.8922	2.0	84.0	0.8925	2.0	78.0	0.9067	2.3
30	84.0	0.8947	2.4	84.0	0.8974	2.3	76.0	0.9030	3.0
36	84.0	0.8970	2.4	82.0	0.9020	2.3	75.0	0.9045	3.0
42	84.0	0.8960	2.4	84.0	0.8960	2.3	74.0	0.9060	2.5
48	82.0	0.8900	2.0	82.0	0.8930	2.0	72.5	0.9070	3.1
54	80.5	0.9030	3.0	81.0	0.8990	2.7	70.5	0.9054	3.2
60	80.0	0.9000	3.0	80.0	0.8998	2.9	70.5	0.9070	3.4

REFERENCES

- Guenther, E. 1948. *The Essential Oils*. Vol. IV. D. Van Nostrand Company Inc., New York, p 279-282
- ISI. 1969. Indian Standard Methods of Sampling and Test for Natural and Synthetic Perfumery Materials (First Revision). ISI, New Delhi

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