

A Method of Differentiating *Kusmi* and *Rangeeni* Lacs

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The method currently used for differentiating the two main varieties of lac—*kusmi* and *rangeeni*—is based on smell test. This method, besides being subjective, fails in the case of aged samples. A more reliable method of differentiation is reported in which the sample of seedlac or shellac under test is subjected to steam distillation and the distillate is collected. While the distillate from *kusmi* variety is invariably turbid, that from *rangeeni* variety is clear.

OF the two main varieties of lac, the *rangeeni* variety has deeper colour than the *kusmi* variety. With the crushing and washing treatments given for the preparation of seedlac, the colouring matter is mostly washed away and as far as colour is concerned there is very little difference between the seedlacs prepared from the two varieties. This is more so when some chemicals are used as aids to washing. Due to the superior properties of *kusmi* lac, namely its fusibility, life and flow, it is graded superior to *rangeeni*. On ageing, however, these properties deteriorate and come down to the level of those of *rangeeni* lac.

The qualitative method followed in trade is based on smelling the sample and only experienced persons can detect the difference. The object of the present study was to develop a more objective method of differentiation.

Experimental procedure

Samples of *kusmi* and *rangeeni* seedlac (as well as shellac) were steam distilled to see if the odoriferous principle can be isolated in sufficient quantity to enable differentiation by smell. But the content of the odoriferous principle was so low that even on distilling 1 kg material, the intensity of odour was not sufficient to enable differentiation. This approach was, therefore, given up.

During steam distillation of the material it was noticed that the distillate obtained in the case of *kusmi* lac, either in the form of seedlac or shellac, is turbid. This observation was followed up and different samples of *kusmi* and *rangeeni* seedlac and shellac were steam distilled. The results obtained indicated that this can form the basis for qualitative differentiation of *kusmi* and *rangeeni* varieties.

Procedure—The method described earlier¹ for isolating the odoriferous principle by dissolving shellac or seedlac in sodium carbonate solution was tried, but the distillate was not so deeply turbid as when shellac or seedlac dissolved in sodium hydroxide solution was steam distilled. Subsequently, all the experiments were carried out using sodium hydroxide solution of seedlac. The seedlac or shellac sample (20 g) was dissolved in 200 ml water containing 2 g sodium hydroxide. This solution was then subjected to steam distillation. The distillate in the case of *kusmi* seedlac or shellac was found to be turbid, whereas with *rangeeni* seedlac or shellac, no turbidity was noticed. Thirty samples of each variety collected from different sources were tested and the test was found to hold good in all the cases. More than a dozen unknown samples from different sources were next tested and the identification was found to be correct in every case.

The method was tried for the estimation of the two varieties in a mixture. This

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however was not found possible since the intensity of turbidity in the distillate from *kusmi* lac varies from sample to sample.

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References

1. *Annual report, Indian Lac Research Institute, Nankum, Ranchi, 1948-49, 21.*