POSTHARVEST LOSSES OF ESSENTIAL OIL OF LAVENDER FLOWERS

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AIM

- the amount of the essential oil (EO) yielding from the aromatic plants depends on many factors and some of them are storage conditions and the time between plant harvesting and EO extraction
- the aim of this study was to analyse the EO content changes of two Czech Lavandula angustifolia Mill. varieties, ‘Krajová’ and ‘Beta’, in the long time period between the harvesting and chemical analysis

MATERIAL and METHODS

Dry full blooming inflorescences (at least 120 plants of each cultivar) were stored in paper bags in a dark room at room temperature. The first samples of lavender flowers, which were removed from the stems before the hydrodistillation, were analysed between 43 (in 2011) and 66 (in 2009) days after harvesting and then almost every week (except the Christmas break) until the plant material ran out. The last samples were taken between 158 (in 2012) and 310 (in 2008) days after harvesting. Dry flowers (20 g) were submitted to hydrodistillation with a Clevenger-type apparatus. The EO was co-distilled with 500 ml of distilled water for 4 h. The mean values of two extraction yields are reported.

RESULTS

The amount of EO in the dry lavender flowers was between 1.15 and 4.05 ml.100g⁻¹ in the ‘Krajová’ variety and 3.80-8.95 ml.100g⁻¹ in the ‘Beta’ variety. Among the treatments the continual loss of oil was obtained for both the varieties and all the years that were treated. A linear regression showed the average EO yield loss of 0.007% per day, which means about 2.56% per year.

CONCLUSION

An eight-year experiment proved that during the long-term storage of dried lavender flowers a gradual reduction in the total content of EO occurs at a rate of about 0.007% per day, which means about 2.56% per year.

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