

СПИСЪК НА РЕЗЮМЕТА НА НАУЧНИТЕ ТРУДОВЕ  
НА ДОЦ. Д-Р ТОНЯ ДОБРЕВА ГЕОРГИЕВА

ЗА УЧАСТИЕ В КОНКУРС ЗА ПРОФЕСОР ПО  
РАСТЕНИЕВЪДСТВО ШИФЪР 04.01.14

I. В РЕЦЕНЗИРАНИ ИЗДАНИЯ

**I. 1. Method for Attaining Rosemary Essential Oil with Differential Composition from Dried or Fresh Material**

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**Abstract:** Rosemary (*Rosemarinus officinalis* L.) is a well-known medicinal and essential oil plant, utilized by humankind since ancient times. The objective was to determine the effect of steam distillation time (DT) and material (dry or fresh biomass) on essential oil yield, composition, and bioactivity; and to develop regression models that can predict oil yield and composition at specific DT. The oil yield (content) from dry biomass was higher (0.43%) than that from fresh biomass (0.35%) and ranged from 0.18% in the 1.25 min DT to 0.51% in the 40 min DT. There was no yield advantage in extending the DT beyond 40 min, which is much shorter than the DT used by industry. In this study, the antioxidant capacity of the rosemary oil using the ORACoil method was 4,108 mmolVE/L. Rosemary oil did not exhibit significant antileishmanial, antimalarial, or antimicrobial activity. In general, the low-boiling constituents eluted earlier than the higher boiling constituents of the essential oil, resulting in a great variation of essential oil composition obtained at different DT. The most important constituents are  $\alpha$ -pinene, eucalyptol, and camphor. The highest  $\alpha$ -pinene concentration in the oil (30.4%) was obtained from dry biomass at 2.5 min DT; eucalyptol (23.3% of the total oil) from fresh biomass at 2.5 min DT; and camphor (15.9% of the total oil) from fresh biomass at 160 min DT. The DT could be used as an inexpensive tool to alter essential oil composition of the essential oil from fresh or dried rosemary biomass, and to produce rosemary oils with elevated or lowered concentration of specific targeted oil constituents to meet specific market demands.

*Key words:* steam distillation time, *Rosemarinus officinalis*,  $\alpha$ -pinene, eucalyptol, camphor

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**I.2. Сравнително изпитване на перспективни образци обикновен фий (*Vicia sativa* L.)**

