

عنوان مقاله:

Influence of the Season on the Quantity and Chemical Composition of the Essential Oil and Synthesis of Secondary Metabolites in *Cymbopogon martini* (Roxb.) Wats

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نویسندگان:

Nilofer Nilofer - *Division of Crop Production and Protection, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

Saudan Singh - *Division of Crop Production and Protection, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

Anil Singh - *Division of Crop Production and Protection, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

Parminder Kaur - *Division of Crop Production and Protection, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

Aman Siddiqui - *Division of Crop Production and Protection, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

Devendra Kumar - *Division of Crop Production and Protection, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

Raj Lal - *Division of Genetics and Plant Breeding, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

Chandan Chanotiya - *Analytical Chemistry Division, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, ۲۲۶۰۱۵, India*

خلاصه مقاله:

Perennial aromatic crops' production, yield, and quality are significantly impacted by seasonal variations. *Cymbopogon martinii* (Roxb.) (Poaceae) is a perennial aromatic grass that produces valuable essential oil from the leaves and inflorescence containing high concentrations of geraniol and geranyl acetate. The current study intends to determine how seasonal changes (autumn, winter, and summer) affect the production of geraniol, geraniol acetate, and essential oils from various plant components, (leaves and inflorescence). The field study was conducted at the experimental farm of India's CSIR-Central Institute of Medicinal and Aromatic Plants for two years (May ۲۰۱۸ to May ۲۰۲۰). Four varieties viz. cv. Tripta, Trishna, PRC₁, and CIMAP Harsh were grown, and harvesting was done in three entirely different seasons, i.e., autumn, winter, and summer, for two consecutive years; thus, a total of six harvests (two in each season) were obtained. The research findings revealed that under the sub-tropical climatic conditions, cv.

CIMAP Harsh performs better in yield and productivity with maximum essential oil yield obtained in the summer, followed by autumn. Maximum geraniol (۸۹.۹% and ۵۱.۲۶ kg ha^{-۱}) and geraniol acetate (۳.۰% and ۱.۷۳ kg ha^{-۱}) yields in leaves were reported during the summer season. In contrast, in inflorescence, geraniol (۷۶.۸% and ۱۲.۷۷ kg ha^{-۱}) yields were recorded maximum during the autumn season, irrespective of variety. In terms of essential oil yield and quality of oil, harvesting during the winter months did not make any significant difference. Nevertheless, it is intriguing to notice that the CIMAP Harsh variety placed top for the traits N_۲, N_۳, N_۵, N_۶, N_۷, N_۸, N_{۱۳}, N_{۱۵}, N_{۲۱}, and N_{۲۲} and second for N_۱. In the traits N_۲ to N_۸, N_{۱۳}, and N_{۱۴}, Trishna was the variety that placed second. Therefore, it is advised .that these two palmarosa cultivars be grown commercially on a wide basis

کلمات کلیدی:

Essential oil, geraniol, Geranyl acetate, harvesting season, rosagrass

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