

## 中国烤烟中部叶矿质营养元素浓度状况

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The status of mineral nutrition concentration in middle leaves of flue-cured tobacco from China

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摘要

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**摘要** 于2001~2004年,从重点植烟县采集了410个烤烟中部叶样品,运用ICP测定方法和概率密度分布函数对其氮、钾、磷、钙、镁、硫、锰、铜、锌、硼、钠、铁、氯13个矿质元素的浓度特征进行了分析。结果表明:1)大量元素的变异系数较小,中量元素其次,微量元素较大;2)除氮、镁、硫、铜、锌、钠、铁外,其他元素的浓度在品种之间的差异显著,但不同指标在品种之间的高低秩序不同,例如,云烟87的磷浓度显著地高于云烟85、K326的磷浓度,而钾浓度按K326、云烟87、云烟85依次降低;3)所有元素在省份之间的差异极显著,但不同元素在地区之间的高低秩序不同,例如,河南烟叶的钾浓度显著地低于其他省份,贵州烟叶的氯离子浓度显著地高于其他地方;4)钾、磷、钙、硫、硼、钠在烟叶中的浓度符合正态分布,氮、镁、氯、锰、铜、锌、铁在烟叶中的浓度符合对数正态分布;5)氮、磷、钾、钙、镁、硫、锰、铜、锌、硼、钠、铁、氯的正常浓度范围分别为1.18~2.34、0.11~0.30、0.87~2.83、0.99~3.64、0.1~0.8、0.25~0.9、25.18~601.65、2.1~37.271、3.11~105.421、2.6~55.62、163.02~503.11、97.6~384.2、0.07~0.53(氮、磷、钾、钙、镁、硫、氯的单位为%,其余为mg/kg);6)氮、钾、氯、钾/氯比四个因素符合“国际型优质烟叶”质量标准的概率只有0.726、0.379、0.193、0.829,目前我国烤烟营养不够协调的主要方面是养分浓度偏低。

**关键词:** 烟叶 矿质元素 概率密度分布函数 烟叶 矿质元素 概率密度分布函数

**Abstract:** Based on 410 samples collected uniformly from 2001 to 2004, covering main tobacco-planting counties of China, the concentration of N, P, K, Ca, Mg, S, Mn, Cu, Zn, B, Na, Fe, Cl in middle leaves of flue-cured tobacco were investigated. The results showed: 1) Variation coefficients of macronutrients were smaller, followed by Ca, Mg, S and micronutrients; 2) Except N, Mg, S, Cu, Na, Zn and Fe, all other elements differentiate significantly among varieties. For examples, the average K concentration in K326 was 1.96%, which was significantly higher than that in Yunyan85 and Yunyan87. The average P concentration in Yunyan87 was significantly higher than that in Yunyan85 and K326; 3) All elements collected from different sites showed highly significant difference. For examples, the average K concentration in tobacco leaves from Henan province was significantly lower than those from other provinces. The average Cl concentration in tobacco leaves from Guizhou province was significantly higher than those from other provinces; 4) The concentration of P, K, Ca, S, B, Na conformed to normal distribution, and other elements conformed to logarithmic normal distribution, and for the concentration of N, P, K, Ca, Mg, S, Mn, Cu, Zn, B, Na, Fe and Cl, the confidence interval with 0.95 confidence level were 1.18-2.34, 0.11-0.30, 0.87-2.83, 0.99-3.64, 0.1-0.8, 0.25-0.90, 25.18-601.65, 2.1-37.27, 13.11-105.42, 12.6-55.62, 163.02-503.11, 97.6384.2 and 0.07-0.53 (The unit of N, P, K, Ca, Mg, S and Cl were %, others were mg/kg), respectively; 5) For N, K, Cl and K/Cl, the probability of according with the international standard of high quality tobacco leaves were respectively 0.726, 0.379, 0.193 and 0.829, indicating that unbalance nutrient in flue-cured tobacco in China may attribute to the insufficient of nutrient in leaves.

**Keywords:**

## 引用本文:

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