

不同区域尺度烟叶化学成分与品质的关系初探

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Preliminary study on the relationships between tobacco leaf chemical components and quality at different regional scales

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摘要 在贵州2个主要烟叶产区,系统采集214个烟叶样品,研究了不同区域尺度烟叶化学成分与品质的关系。结果表明,县级尺度间烟叶的化学成分含量、品质指标及吸食品质差异较大,地级尺度间的差异缩小。在县级尺度,影响烟叶品质的主要化学成分组成较为相似,化学成分主成分分布较为集中,第1主成分主要包括总糖、还原糖、烟碱、糖碱比、氮碱比,化学成分与品质的显著相关性因子较少(1-2个因子),可用较少的化学成分来揭示烟叶品质。在地级尺度,烟叶化学成分与品质的关系复杂化,需用较少的化学成分(碳水化合物、含氮化合物)反映烟叶的主要品质特征,并需用更多的化学成分(K₂O、P等矿质成分)才能反映烟叶品质的特有差别。如遵义的吸食总分与总氮、氮碱比、烟碱显著相关,杂气与总氮、氯显著相关。在省级尺度,烟叶化学成分与烟叶品质的关系更为复杂,需用更多的化学成分(碳水化合物、含氮化合物及矿质养分)才能综合反映烟叶的品质,如吸食总分与总氮、糖碱比、氮碱比、磷、镁显著相关,杂气与总氮、糖碱比、氮碱比、磷、镁和还原糖显著相关。说明从县级尺度到省级尺度可用从少到多的化学成分种类表征相应区域尺度的烟叶品质。

关键词: 尺度 烟叶 化学成分 质量 尺度 烟叶 化学成分 质量

Abstract: A total of 214 tobacco leaf samples were systematically collected in two major tobacco-planting regions of Guizhou province to determine the relationships between tobacco leaf chemical components and quality at different scales. The results indicated that differences in chemical components, quality indicators and smoking quality were bigger among different counties than among different prefectures. At the county scale, major chemical components influencing leaf quality were rather similar, with the first principal component including total sugar, reductive sugar, nicotine, reductive sugar to nicotine ratio and total nitrogen to nicotine ratio. One or two principal components (or factors) can be used to evaluate tobacco leaf quality. At the prefecture scale, the relationship became complicated between chemical components and leaf quality, and more chemical components were needed to evaluate leaf quality. For example, significant correlation in Zunyi prefecture was found between smoking total scores and total nitrogen, nitrogen to nicotine ratio and nicotine, and between offensive odor and total nitrogen and chloride. At the provincial scale, the relationship was more complicated so that overall quality could be represented by using many more chemical components (including carbohydrates, compounds containing nitrogen, ratio and mineral nutrients). For example, significant correlation was found between total scores and total nitrogen, reductive sugar to nicotine ratio, nitrogen to nicotine ratio, phosphorous and magnesium, and between the offensive odor and total nitrogen, reductive sugar to nicotine ratio, nitrogen to nicotine ratio, phosphorous, magnesium and reductive sugar. It was concluded that more chemical components were needed to evaluate tobacco leaf quality at prefecture and provincial scales than at county scale.

Keywords:**引用本文:**秦松^{1,2};王正银¹;石俊雄³.不同区域尺度烟叶化学成分与品质的关系初探[J] 植物营养与肥料学报, 2007, V13(3): 443-QIN Song^{1,2};WANG Zheng-yin¹;SHI Jun-xiong³. Preliminary study on the relationships between tobacco leaf chemical components and quality at different regional scales[J] Acta Metallurgica Sinica, 2007, V13(3): 443-

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