

CHEMICAL AND PHYSICAL PROPERTIES

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D.I. ALIEV; A.F. VANIN; KH. B. GESALOV; I.S. KURBANOV. On the presence of the weak-connected non-gemous iron in tobacco. Akad. Nauk Az. SSR. Dokl. 41(10):35-37, 1986.

1577

A. CASTRO; N. MONJI. Nicotine enzyme immunoassay. Clinical Chemistry 32(6):1064-1065, June 1986. Abstract from Joint Meeting for Clinical Chemistry and Canadian Society of Clinical Chemists, Chicago, Illinois, July 13-18, 1986.

1578

SE CHUN CHOI; JUN YUNG PARK. Studies on the volatile aroma components of Korean burley tobacco. Han'Guk Yonch'o Hakoe Chi=Journal of the Korean Society of Tobacco Science 6(2):97-116, Nov. 1984. (Kor.: Engl. summ. and captions).

Volatile aroma components were extracted from Korean burley tobacco grades heavy-1, heavy-5, thin-1, and thin-5 using a vacuum steam distillation apparatus. Individual flavor components were identified using a combination of Carbowax 20M fused silica capillary gas chromatography and mass spectrometry. Of the identified components, neophytadiene (43.6 ppm), megastigma-4,6,8-trien-3-one (four isomers of 8.32-23.51 ppm), ethanol (1.8 ppm), and ethylacetate (4.7 ppm) were more abundant in heavy-1 than in heavy-5. Neophytadiene (43.7 ppm), metastigma-4,6,8-triene-3-one (four isomers of 1.09-3.03 ppm), ethylacetate (7.9 ppm), and ethanol (8.4 ppm) were more abundant in thin-1 than in thin-5. Nicotine (75.79 ppm) and solanone (8.5 ppm) were more abundant in heavy-5 than in heavy-1. Solanone (5.76 ppm), geranylacetone (9.02 ppm), phenylacetaldehyde (1.12 ppm), β -phenylethylalcohol (1.93 ppm), and dihydroactinidiolide (1.89 ppm) were more abundant in thin-5 than in thin-1. By contrast, iso-valeraldehyde, n-valeraldehyde, dimethylpyrazine, and propionic acid were identified in American, but not in Korean, burley. (authors' abstract from journal)

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WILLIAM A. COURT; JOHN G. HENDEL. Characteristics of flue-cured tobacco grown under varying proportions of ammonium and nitrate fertilization. Tob. Int. 188(4):35-37, Feb. 21, 1986. Tob. Sci. 30:20-22, 1986.



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A field experiment was conducted in 1981 and 1982 on Fox loamy sand to study the effects of different proportions of ammonium (NH_4^+) and nitrate (NO_3^-) fertilizer on selected agronomic and chemical characteristics of flue-cured tobacco. Five forms of fertilizer N consisting of 100% NH_4^+ , 75% NH_4^+ + 25% NO_3^- , 50% NH_4^+ + 50% NO_3^- , 25% NH_4^+ + 75% NO_3^- and 100% NO_3^- were applied at 33.6 kg/ha. Increasing the proportion of NO_3^- in the fertilizer decreased yield, value, and reducing sugars in cured leaves, but increased organic acids, phenolic constituents, total N and total alkaloids in cured leaves. The proportion of NH_4^+ in the N fertilizer had no effect on leaf pigments, diastrienediols, fatty acids, phytosterols, surface waxes, hexane extracts, grade index or maturity index. In general, differences were quite small possibly due to the moderate amounts of rainfall in each year of the study. (Copyright 1986 Lockwood Trade Journal Co.)

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JOSEPH C. JOHNSON. Development of machine smoking parameters for measurement of cigarette tar yield in the United Kingdom. *Assoc. Off. Anal. Chem. J.* 62(4):598-600, July-Aug. 1986.

The smoking and analytical methods used by government and tobacco industry laboratories are the result of many years of collaborative work within the industry and through international bodies such as the International Standards Organization. Recently, some publications have criticized the validity and scientific soundness of these procedures. It is shown that such criticisms are totally unfounded by reviewing the work that led to the adoption of the current technique. Tar tables, published by the UK Health Departments are valid in ranking brands in order of their yields, while not necessarily reflecting the absolute tar delivery to the smoker. These tables are intended to and do provide a relevant guide for smokers about the proportional tar yields of UK cigarettes. (Copyright 1986 Assoc. of Official Analytical Chemists)

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HYOUNG-KAB KIM; UNG-JU KIM. Effects of ozonization on the qualities of lower grade tobacco leaf. *Han'Guk Yonch'o Hakoe Chi-Journal of the Korean Society of Tobacco Science* 6(2):215-219, Nov. 1984. (Kor.: Engl. summ. and captions)

An experiment was conducted to investigate the effect of ozone treatment on the physical and chemical characteristics of lower-grade tobacco. With ozonization of low-grade tobacco,

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