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SHORT COMMUNICATION

MYOSMINE IN DIFFERENT ORGANS OF TOBACCO PLANT

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Abstract—Myosmine was found to be present in different organs of tobacco plant by TLC Myosmine is a natural minor alkaloid of tobacco plant, it is not a decomposition product nor a 'smoke' alkaloid

INTRODUCTION

THE ALKALOID composition of the leaves of different tobacco varieties and the biosynthesis of tobacco alkaloids are under intensive study The alkaloids in the roots, and in some cases that of the bleeding sap of tobacco plants are also known Much less information is available about the alkaloids of the stem and very little is known of the alkaloids of the reproductive organs Tso *et al* [1] and Blaim[2] estimated the nicotine content of flowers and the sepals of different *Nicotiana* hybrids, no other minor alkaloids were examined

In the course of examination of the alkaloid spectra of F_2 amphidiploid hybrids of *N tabacum* convar Kentucky (Ky) and *N glauca* (NL) the alkaloid composition of buds and flowers was studied

RESULTS

In the buds and flowers of all plants examined [KyGL^{T}2 hybrids] anabasine, nicotine and myosmine were identified by comparison with authentic samples and by co-chromatography. In a few samples nicotine oxide, anatabine and an unidentified alkaloid were also detected The spot of myosmine in every bud and flower samples examined was comparatively large and intensely coloured, suggesting the presence of a relatively large amount of this alkaloid

The question now arises of the origin of myosmine in the samples It is known[3] that nicotine at elevated temperature, and in the presence of oxygen may be partly converted to nicotine-oxide, cotinine, nicotyrine, myosmine and other compounds Such decomposition takes place during the fermentation and storage of tobacco leaves, and 2,3'-dipyridyl and myosmine have been detected in fermented tobaccos by Frankenburg *et al* [4] Our samples were dried at low temperature, were unfermented, and analysed on the day of picking To check our results fresh, undried buds and flowers were also examined immediately after picking The picture obtained was the same as in the case of dry material Moreover in all examined organs of the parental plants and in the leaves of the F_2 to F_5 generations of a

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selected tobacco strain (T3) and in many other tobacco samples, myosmine was detected and identified. It seems therefore that myosmine is a true, natural alkaloid of tobacco

EXPERIMENTAL

The organs were minced, dried at 60° in vacuum, ground and sieved The alkaloids were extracted according to the method of Cundiff *et al* [5] Chlorophyll and lipids were separated and the solvent was evaporated The dry residue was redissolved in $CHCl_3$ and the alkaloid spectra were determined by TLC,[6] by a method which was later modified for the purpose of serial examination [7] Dragendorff's reagent and in some cases Konig's reagent[8] were used for identification Konig's reagent gives characteristic colours with tobacco alkaloids [6]

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Key Word Index—Alkaloids of the reproductive organs, tobacco plant, myosmine, anotabine, TLC-method