United States Patent Office

3,280,824

Patented Oct. 25, 1966

3,280,824

TOBACCO

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No Drawing. Filed Nov. 3, 1965, Ser. No. 506,261
9 Claims. (Cl. 131—17)

This application is a continuation-in-part of my copending application, Serial No. 344,807, filed February 14, 1964, now abandoned.

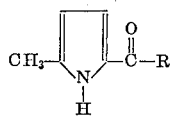
This invention relates to tobacco and has for an object the provision of a tobacco composition having an improved aroma and flavor.

It is well known in the tobacco art that the domestic tobaccos which are exemplified by burley, Maryland, flue-cured, bright leaf or Virginia tobaccos are low in flavor as compared with so-called oriental or aromatic tobaccos which are imported from Turkey, Greece, Bulgaria, Yugoslavia, Rhodesia and Russia. Accordingly, it has been common practice in the tobacco industry to prepare blends of domestic and oriental tobaccos in order to provide cigarettes which have desired flavor and aroma characteristics. Accordingly, it is a further object of this invention to provide a domestic tobacco which has an enhanced flavor and aroma.

An additional object of this invention is to provide a tobacco which has been treated in such manner as to impart an aroma which is pleasing to the smoker and may be described as a cherry-like aroma.

In accordance with one embodiment of this invention a domestic tobacco is provided to which has been added a small amount of a compound embraced by the following formula:

FORMULA I



wherein R is hydrogen or methyl.

When R in the above formula is hydrogen the tobacco additive is 2-formyl-5-methylpyrrole and when R is methyl the tobacco additive is 2-acetyl-5-methylpyrrole.

The 2-acetyl-5-methylpyrrole can be synthesized from 2-methylpyrrole. A detailed description of the synthesis is as follows:

(A) The starting material, 2-methylpyrrole, was obtained by the Wolff-Kishner reduction of pyrrole-2-carboxaldehyde as described in Journal of Organic Chemistry, vol. 21, p. 918 (1956). Sixty grams of pyrrole-2-carboxaldehyde were utilized and after fractional distillation 28 grams of pure 2-methylpyrrole, boiling point 148° C., were obtained.

(B) 2-methylpyrrole (10 g.) was heated at 190° C. for 30 minutes with 10 grams of sodium acetate and 25 grams of acetic anhydride. The cooled reaction mixture was taken up in water and extracted with ether. The ether solution was dried over potassium carbonate and then vacuum distilled. Approximately 1.5 grams of 2-acetyl-5-methylpyrrole was obtained having a melting point of 86–87° C. and the following analysis:

Ultraviolet spectrum:

$$\lambda_{max.}^{EtOH}$$ 299 mμ (ϵ =6,200)

and 245 mμ (ϵ<1,000).

Infrared spectrum: ν=3270, 1630, 1520, 1267, 1222, 1046, 930 and 800 cm.$^{-1}$.

Nuclear magnetic resonance spectrum: τ=3.08 (1, triplet), 3.95 (1, triplet), 7.55 (3, singlet), and 7.61 (3, singlet).

Analysis.—Calcd. for C_7H_9NO: C, 68.27; H, 7.37; N, 11.37. Found: C, 68.19; H, 7.35; N, 10.31.

SYNTHESIS AND PROPERTIES OF 2-FORMYL-5-METHYLPYRROLE

1. *2-methylpyrrole*

The Wolff-Kishner reduction of Cantor, Lancaster, and Vander Werf, J. Org. Chem. 21, 918 (1956), was used, starting with 60 grams of pyrrole-2-carboxaldehyde. After fractional distillation, 28 grams of pure 2-methylpyrrole, boiling point 148° C., was obtained.

2. *2-formyl-5-methylpyrrole*

The "Organic Syntheses" (Coll. vol. IV, 831 (1963)) method for 2-pyrrole carboxaldehyde was followed, using 81 grams (1 mole) of 2-methylpyrrole, 80 grams (1.1 moles) of dimethylformamide, 169 grams (1.1 moles) phosphorous oxychloride, and 500 milliliters ethylene dichloride. The material from the preparation was distilled and 88 grams of 2-formyl-5-methylpyrrole, boiling point 79° C./1 mm., was obtained. The compound was recrystallized from hexane and had a melting point of 68–69° C. The compound was characterized by the following spectroscopic data:

Ultraviolet spectrum:

$$\lambda_{max.}^{EtOH}$$ 254 mμ (ϵ=15,700)

Infrared spectrum: ν=3180, 1627, 1562, 1342, 1266, 1187, 1938, and 720 cm.$^{-1}$.

Nuclear magnetic resonance spectrum: τ=0.60 (1); 3.06 (1, triplet); 3.92 (1, triplet); and 7.60 (3, singlet).

Mass spectrum: Parent peak at 109 mass units.

In accordance with this invention, a compound embraced by generic Formula I, or mixtures thereof, is added to tobacco or applied to a smoking article or its component parts in amounts of about 0.001 to 1.0 percent by weight of the product. Preferably the amount of additive is between about 0.005 and 0.15 percent by weight in order to provide a tobacco product having a desired flavor and aroma. However, the amount used will depend upon the amount of flavor and aroma desired and the particular compound or mixture thereof that is used. The additive may be incorporated at any step in the treatment of the tobacco but is preferably added after aging, curing and shredding and before the tobacco is formed into cigarettes. Likewise, it will be apparent that only a portion of the tobacco need be treated and the thus treated tobacco may be blended with other tobaccos before the cigarettes or other smoking articles are formed. In such case the tobacco treated may have the additive in excess of the amounts above indicated so that when blended with other tobaccos the final product will have the percentage within the indicated range.

In accordance with one specific embodiment of this invention, an aged, flue-cured and shredded tobacco is sprayed with a 1% ethyl alcohol solution of 2-acetyl-5-methylpyrrole in an amount to provide a tobacco containing 0.1 percent by weight of the additive on a dry basis. Thereafter the alcohol is removed by evaporation and the tobacco is manufactured into cigarettes by the usual techniques. It has been found that the cigarette when prepared as indicated has a desired and pleasing flavor, an aroma which to some people is reminiscent of cherry and is detectable and pleasing in the main and side smoke streams when the cigarette is smoked. The tobacco additive, 2-formyl-5-methylpyrrole, imparts a sweet note.

The additives falling within the scope of this invention may be applied to the tobacco by spraying, dipping or otherwise, utilizing suitable suspensions or solutions of the

additive. Thus water or volatile organic solvents, such as alcohol, ether, acetone, volatile hydrocarbons and the like, may be used as the carrying medium for the additive while it is being applied to the tobacco. Also, other flavor- and aroma-producing additives, such as those disclosed in United States Patents Nos. 2,766,145, 2,905,575, 2,905,576, 2,978,365 and 3,041,211 may be incorporated into the tobacco with the additive of this invention.

While this invention is principally useful in the manufacture of cigarette tobacco, it is also suitable for use in connection with the manufacture of pipe tobacco, cigars or other tobacco products. Furthermore, the compounds may be added to certain tobacco substitutes of natural or synthetic origin and by the term "tobacco" as used throughout this specification is meant any composition intended for human consumption by smoking or otherwise, whether composed of tobacco plant parts or substitute materials or both.

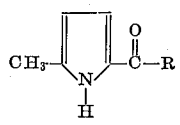
Also, the invention has been particularly described with reference to the addition of the compounds directly to tobacco. However, it will be apparent that the compound may be applied to the paper of the cigarette or to the wrapper of a cigar. Also, it may be incorporated into the filter tip, the packaging material or the seam paste employed for gluing the cigarette paper. Thus a tobacco product is provided which includes the specified additives and tobacco although in every instance the compound need not be admixed with the tobacco as above specifically described.

While several particular embodiments of this invention are shown above, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is contemplated, therefore, by the appended claims, to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A tobacco product intended for human consumption and comprising a major amount of tobacco having added thereto an amount sufficient to alter the flavor and aroma

of the tobacco product of a compound selected from the group of compounds having the formula:



wherein R is hydrogen or methyl.

2. The product recited in claim **1** wherein the amount of said compound is between about 0.001 and 1.0 percent by weight of the product.

3. The product recited in claim **1** wherein the amount of said compound is between about 0.005 and 0.15 percent by weight of the product.

4. A tobacco product intended for human consumption and comprising a major amount of tobacco having added thereto a small amount sufficient to improve the flavor thereof of 2-formyl-5-methylpyrrole.

5. The product recited in claim **4** wherein the amount of said flavorant is between about 0.001 and 1.0 percent by weight of the product.

6. The product recited in claim **4** wherein the amount of said flavorant is between about 0.005 and 0.15 percent by weight of the product.

7. A tobacco product intended for human consumption and comprising a major amount of tobacco having added thereto a small amount sufficient to improve the flavor thereof of 2-acetyl-5-methylpyrrole.

8. The product recited in claim **7** wherein the amount of said flavorant is between about 0.001 and 1.0 percent by weight of the product.

9. The product recited in claim **7** wherein the amount of said flavorant is between about 0.005 and 0.15 percent by weight of the product.

No references cited.

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