

United States Patent

[11] 3,625,224

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[54] **TOBACCO PRODUCT**
14 Claims, No Drawings
[52] U.S. Cl. **131/17 R,**
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A24d 01/06
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144; 99/140

[56] **References Cited**
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3,288,146 11/1966 Bailey et al. 131/266 UX
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Pages 1,027 and 1,067 cited.

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ABSTRACT: Addition of methyl and ethyl substituted pyridine compounds to tobacco to enhance the flavor and aroma.

TOBACCO PRODUCT

This invention relates to a tobacco product and has for an object the provision of a composition for improving the flavor and/or aroma of tobacco and tobacco smoke.

It is well known in the tobacco art that the flavor and aroma of the tobacco product and the smoke from the tobacco are very important considerations insofar as the ultimate consumer is concerned. Considerable efforts are exerted by the manufacturers of tobacco products to provide a product that will be acceptable to the consumer, particularly as regards flavor and aroma characteristics. It has been the common practice in the tobacco industry to prepare blends of domestic and oriental tobaccos in order to provide smoking tobacco which has a pleasing flavor and aroma before and during smoking. However, such a procedure is costly and may at times become prohibitive in the event that certain types of tobacco may be in short supply. Accordingly, it is a further object of this invention to provide a new class of additive materials which when applied to the tobacco products improve and enhance the flavor and aroma of these products and the smoke emitted therefrom thereby increasing or enhancing the pleasure and other values that may be derived by the consumer from the use of these products.

A further object of this invention is the provision of an additive for enhancing or otherwise improving the flavor, aroma and other qualities of certain domestic, oriental, reconstituted or synthetic tobaccos which may be deficient in said flavor or aroma or other qualities.

An additional object of this invention is to provide a product which when smoked has an enhanced flavor or aroma.

A still further object of this invention is the provision of smoking products, such as cigarettes, cigars or pipe tobacco, whereby the flavor and aroma before and during smoking are improved or enhanced.

Further and additional objects will appear from the following description and the appended claims.

In accordance with this invention the flavor and/or aroma of tobacco or tobacco products is improved by adding thereto a small amount of a pyridine compound having from one to three lower alkyl substituents therein. More particularly, the tobacco additives are pyridines substituted with from one to three methyl or ethyl groups. Representative of the tobacco additives are: 3-methylpyridine, 3,4-dimethylpyridine, 3,5-dimethylpyridine, 2,4-dimethylpyridine, 2,5-dimethylpyridine, 2,6-dimethylpyridine, 2-ethylpyridine, 4-methylpyridine, 3-ethylpyridine, 4-ethylpyridine, 4-ethyl-2-methylpyridine, 3-ethyl-4-methylpyridine and 2,4,6-trimethylpyridine. Preparation of the alkyl substituted pyridines employed in accordance with this invention is known to the art.

In practice of this invention an alkyl substituted pyridine of the class described or mixtures thereof is added to tobacco or applied to a tobacco product or its component parts in amounts of from about 0.00001 to about 0.05 percent by weight of the tobacco or tobacco product. Preferably the amount of additive is between about 0.0001 and 0.001 percent by weight. However the amount used will depend upon the amount of flavor and/or aroma desired and the particular compound or mixtures thereof that is used. The additives can be incorporated at any step in treatment of the tobacco but are preferably added after aging, curing and shredding and before the tobacco is formed into cigarettes or other products. Likewise, it will be apparent that only a portion of the tobacco need be treated and the thus-treated tobacco can be blended with other tobaccos before the cigarettes or other tobacco products are formed. In such case the treated tobacco may have the additive in excess of the amounts above indicated so that when blended with other tobaccos the final product will contain a percentage of additive within the indicated range.

The tobacco additives of the invention when incorporated into tobacco products improve the flavor and/or aroma of the product. However, it is to be appreciated that definition or characterization of flavor or aroma in the tobacco art is almost purely subjective and different smokers may define the same

flavor or effect quite differently. With tobacco additives of this invention in cigarettes has been made as follows:

Additive	Effect
3-methylpyridine	Affords a burleylike character to taste and smoke aroma—increases "body" of tobacco smoke—adds burley character
3,4-Dimethylpyridine	Increases aroma of cut tobacco—gives an enrichment of tobacco taste in smoke—increases "body" of tobacco smoke—adds burley character.
3,5-Dimethylpyridine	Modifies tobacco flavor and enhances flue-cured character.
2,6-Dimethylpyridine	Adds a distinct tobacco aroma to cut tobacco and a burley character to smoke.
2-Ethylpyridine	Improves both pack and smoke aroma as to burley character.
4-Methylpyridine	Affords a burleylike character to taste and smoke aroma—increases "body" of tobacco smoke—adds burley character.
3-Ethylpyridine	Improves pack and smoke aroma—affords aroma character in smoke.
4-Ethylpyridine	Improves pack and smoke aroma—increases tobacco flavor.

In accordance with one specific embodiment of this invention, an aged flue-cured and shredded tobacco is sprayed with a 1 percent ethyl alcohol solution of 3-methylpyridine in an amount to provide a tobacco containing 0.001 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 an improved burley character.

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 additives. 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 additives while being applied to the tobacco. Also, other flavor- and aroma-producing additives, such as those disclosed in U.S. Pat. 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 additives 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 additives can be added to certain tobacco substitutes of natural or synthetic origin by the term "tobacco" as used throughout this specification is meant any composition intended for use 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 additives directly to tobacco. However, it will be apparent that the additives can be applied to the paper of the cigarette or to the wrapper of a cigar. Also, they can 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.

Those modifications and equivalents which fall within the spirit of the invention are to be considered a part thereof.

I claim:

1. A tobacco product having added thereto a small amount of an alkyl substituted pyridine compound having the pyridine nucleus and having as the only substituents thereon from one to three alkyl groups selected from methyl and ethyl, said amount being not more than about 0.001 percent by weight of the tobacco product and being sufficient to alter the flavor or aroma of the tobacco product.

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- 2. A product in accordance with claim 1 wherein the pyridine compound is 3-methylpyridine.
- 3. A product in accordance with claim 1 wherein the pyridine compound is 3,4-dimethylpyridine.
- 4. A product in accordance with claim 1 wherein the pyridine compound is 3,5-dimethylpyridine.
- 5. A product in accordance with claim 1 wherein the pyridine compound is 2,4-dimethylpyridine.
- 6. A product in accordance with claim 1 wherein the pyridine compound is 2,5-dimethylpyridine.
- 7. A product in accordance with claim 1 wherein the pyridine compound is 2,6-dimethylpyridine.
- 8. A product in accordance with claim 1 wherein the pyridine compound is 2-ethylpyridine.

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- 9. A product in accordance with claim 1 wherein the pyridine compound is 4-methylpyridine.
- 10. A product in accordance with claim 1 wherein the pyridine compound is 3-ethylpyridine.
- 11. A product in accordance with claim 1 wherein the pyridine compound is 4-ethylpyridine.
- 12. A product in accordance with claim 1 wherein the pyridine compound is 4-ethyl-2-methylpyridine.
- 13. A product in accordance with claim 1 wherein the pyridine compound is 3-ethyl-4-methylpyridine.
- 14. A product in accordance with claim 1 wherein the pyridine compound is 2,4,6-trimethylpyridine.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,625,224 Dated December 7, 1971

Inventor(s) John Charles Leffingwell

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 1, after "With" insert -- this in mind,
characterization of the effect
of representative --

line 51, after "origin" insert -- and --

Signed and sealed this 13th day of June 1972.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents