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TOBACCO

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8 Claims. (Cl. 131—17)

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

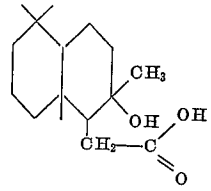
It is well known in the tobacco art that the domestic tobaccos which are exemplified by burley, Maryland, flue-cured, bright leaf or Virginia tobaccos are low in flavor as compared with so-called oriental or aromatic tobaccos which are imported from Turkey, Greece, Bulgaria, Yugoslavia, Rhodesia and 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 a manner as to impart a desired cedarlike odor which is pleasing to the smoker.

A further object of the invention is the provision of a domestic type tobacco having added thereto a chemical compound which imparts a pleasing cedarlike odor to the tobacco which becomes apparent particularly during smoking.

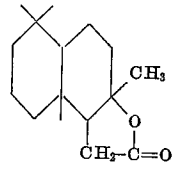
Further and additional objects will appear from the following description and the appended claims.

In accordance with one embodiment of this invention, a domestic tobacco is provided to which has been added a small amount of a compound selected from the group consisting of (I) 2-hydroxy-2,5,5,8a-tetramethyldecahydronaphthaleneacetic acid, (II) the lactone of said acid, and (III) an unsaturated derivative of said lactone as hereinafter defined. The chemical structure of the above referred to acid (I) may be represented by the following formula:



(I)

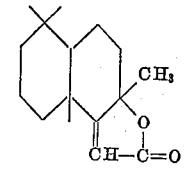
The chemical structure of the lactone (II) may be represented by the following formula:



(II)

The lactone (II) has the following chemical name: decahydro-3a,6,6,9a-tetramethylnaphtho[2,1-b]furan-2(1H)-one.

The unsaturated derivative (II) of the lactone may be represented by the following formula:



(III)

This derivative (III) has the following chemical name: decahydro - 3a,6,6,9a - tetramethylnaphtho[2,1 - b]furan-2-one.

The chemical compounds I and II indicated above are known to the art and are chemically related to sclareol which is a terpene-like compound contained in the leaves of *Salvia sclarea*. Thus Ruzicka et al., Helv. Chim. Acta 25, 621 (1942) have disclosed a procedure for preparing compound I from sclareol. Likewise, Ruzicka et al. in Helv. Chim. Acta, 14, 570 (1931) have disclosed a procedure for preparing compound II which has a melting point of 123–124° C. which involves the treatment of sclareol with chromium trioxide in glacial acetic acid. The methods used by these investigators may be employed for preparing compounds I and II although it will be apparent that other methods may be used for preparing these compounds.

Compound III indicated above is related to sclareol and compounds I and II, as will be apparent from a consideration of the several structural formulae given above. Compound III has been prepared as follows: A solution was prepared containing 5 parts by weight of compound II dissolved in about 30 parts by weight of carbon tetrachloride. An equivalent amount (3.6 parts by weight) of N-bromosuccinimide was added to the solution and the mixture was heated under reflux conditions for about 30 minutes or until the N-bromosuccinimide had disappeared and bromination of compound II was complete. The mixture was filtered to remove the succinimide and the filtrate was evaporated to form a concentrate. The brominated derivative of compound II (melting point 129–131° C.) was recovered from the concentrate by chromatography on silicic acid with elution by 3:1 benzene-petroleum ether. A solution of 5 parts by weight of the brominated derivative of compound II in about 45 parts by weight of 2,4,6-trimethylpyridine was then heated for one hour under reflux conditions, cooled and diluted with ethyl ether. The ethereal solution was then washed with dilute HCl to remove the excess amine and then with water and evaporated. Compound III (melting point 122.5° C.) was recovered from the concentrate by chromatography on silica gel and elution with benzene. It will also be appreciated that compound III may be prepared by other methods for incorporation into tobacco in accordance with one embodiment of this invention.

In accordance with this invention, the designated acid (I) or its lactone (II) or the unsaturated derivative (III) of the lactone is added to a domestic tobacco in amounts to provide a tobacco in which is dispersed about 0.01 to about 1.0 percent by weight of the additive. Preferably the amount of additive is between about 0.05 and about 0.3 percent by weight in order to form a domestic tobacco having a desired flavor and aroma. The additive may be applied in any suitable manner and preferably in the form of a liquid solution or suspension by spraying, dipping or otherwise. 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 domestic tobacco need be treated and the thus treated tobacco may be blended

with other tobaccos before the cigarettes are formed. In such cases 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 example of this invention, an aged, cured and shredded burley tobacco is sprayed with a one percent ethyl alcohol solution of the above indicated lactone (II) in an amount to provide a tobacco composition containing 0.15 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 treated as indicated has a desired and pleasing cedarlike odor which is detectable to some extent when the cigarette is in its package but which is particularly detectable and pleasing in the main and side smoke streams when the cigarette is smoked. A similar product may be prepared by employing the acid (I) or the unsaturated derivative (III) of the lactone in the manner indicated and a tobacco product having similar desired properties results therefrom.

It will be particularly apparent that the manner in which the additive is applied to the tobacco is not particularly important since, as indicated, it may be done in the form of spraying or dipping, 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 Jones United States Patent No. 2,766,145, may be incorporated into the tobacco with the additives of this invention. In addition it will be apparent that mixtures of any or all of the herein described compounds I, II and III may be used in the tobacco if desired, the total concentration preferably being within the stated range of 0.01 and 1.0 percent (most preferably between 0.05 and 0.3 percent) based on the weight of the tobacco in the product to be smoked.

While this invention is particularly useful in the manufacture of cigarette tobacco, it is also suitable for use in connection wtih the manufacture of pipe tobacco, cigars and other tobacco products.

While a particular embodiment of this invention is 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 domestic tobacco having added thereto a small amount of a compound selected from the group consisting of 2-hydroxy-2,5,5,8a-tetramethyldecahydronaphthaleneacetic acid, the lactone of said acid, and decahydro-3a,6,6,9a-tetramethylnaphtho[2,1-b]furan-2-one.

2. The composition recited in claim 1 wherein the additive comprises 2-hydroxy-2,5,5,8a-tetramethyldecahydronaphthaleneacetic acid.

3. The composition recited in claim 1 wherein the additive comprises the lactone of 2-hydroxy-2,5,5,8a-tetramethyldecahydronaphthaleneacetic acid.

4. The composition recited in claim 1 wherein the additive comprises compound decahydro-3a,6,6,9a-tetramethylnaphtho[2,1-b]furan-2-one.

5. A domestic smoking tobacco having added thereto between about 0.01 and 1.0 percent by weight of at least one substance selected from the group consisting of 2-hydroxy - 2,5,5,8a - tetramethyldecahydronaphthaleneacetic acid, the lactone of said acid, and decahydro-3a,6,6,9a-tetramethylnaphtho[2,1-b]furan-2-one.

6. A process of improving tobacco which comprises adding thereto a small amount of a compound selected from the group consisting of 2-hydroxy-2,5,5,8a-tetramethyldecahydronaphthaleneacetic acid, the lactone of said acid, and decahydro-3a,6,6,9a-tetramethylnaphtho-[2,1-b]furan-2-one.

7. A process of improving tobacco which comprises adding thereto a small amount of a compound selected from the group consisting of 2-hydroxy-2,5,5,8a-tetramethyldecahydronaphthaleneacetic acid, the lactone of said acid, and decahydro-3a,6,6,9a-tetramethylnaphtho-[2,1-b]furan-2-one, said compound being added in the form of a liquid solution.

8. A process of improving tobacco which comprises adding thereto a small amount of a compound selected from the group consisting of 2-hydroxy-2,5,5,8a-tetramethyldecahydronaphthaleneacetic acid, the lactone of said acid, and decahydro-3a,6,6,9a-tetramethylnaphtho-[2,1-b]furan-2-one, said compound being added in the form of a liquid suspension.

No references cited.