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PROCESS FOR BLEACHING TOBACCO

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1 Claim. (Cl. 131—6)

This invention relates to the bleaching of tobacco such as cut tobacco, tobacco leaves for cigars, or similar forms of tobacco, with hydrogen peroxide.

At present, tobacco has been bleached by immersing the cut tobacco or tobacco leaves in baths comprising a solution of hydrogen peroxide. This procedure, however, possesses the disadvantage of resulting in a substantial loss in the weight of the tobacco and frequently a loss of the valuable constituents thereof. This results in a substantial impairment of the quality of the tobacco.

As an example of the disadvantageous effects occurring from the immersion of cut tobacco in dilute hydrogen peroxide solutions, it may be stated that experiments have shown that a weight loss of 35–40% normally occurs when cut tobacco is treated for half an hour at about 30° C. in a weakly alkaline hydrogen peroxide bath of a concentration 0.5–1%. Tobacco leaves similarly treated, employing a 1–2% hydrogen peroxide solution show a loss in weight of 15–25%.

According to the present process excellent bleaching effects are obtained without loss in weight by moistening the tobacco with hydrogen peroxide solution. The solution may be sprayed on or applied by sprinkling or any similar method. It is then dried and the bleaching result is as satisfactory as those obtained by immersion of the tobacco in a bath.

If desired, small quantities of alkali such as, for example, an alkali metal pyrophosphate, an alkali metal triphosphate, or some other suitable salt may be added to the solution of hydrogen peroxide. The function of such alkaline materials is the acceleration of decomposition of the hydrogen peroxide solution, thus effecting more rapid and complete bleaching of the tobacco. Not only is the bleaching accelerated by the use of alkaline materials, but the addition of alkaline agents also prevents undecomposed hydrogen peroxide from remaining on the tobacco. The presence of undecomposed hydrogen peroxide affects unfavorably the aroma and taste of such tobacco since it results in oxidation which injures the quality of the tobacco. Similarly ammonia, NH_3, may also be added, if desired along with the alkali substances, and it has been found especially advantageous since it volatilizes and does not remain permanently on the tobacco. The function of the ammonia is catalytically to accelerate the bleaching action of the hydrogen peroxide solution and thus completely destroy residual undecomposed hydrogen peroxide which may be present on the tobacco. Residual peroxide if permitted to remain on the tobacco adversely affects the aroma and taste of the resulting product. Hydrogen peroxide solutions of varying concentrations may be used for bleaching. Thus, for example, solutions of 3% and lower have been employed and solutions of concentration up to 30% or even higher have also given very satisfactory results.

The concentration which is best suited for bleaching the tobacco of which it is desired to lighten the color can be easily determined by preliminary tests. The solution of hydrogen peroxide is most advantageously added while in the finely divided state, as, for example, by spraying or squirting through nozzles, by causing it to trickle on the tobacco, or by some similar method.

When ammonia is used it may be added to the hydrogen peroxide solution. Since the addition of ammonia may affect unfavorably the stability of the solution of hydrogen peroxide, it is desirable to make such addition immediately or shortly before application of the solution to the tobacco. It is somewhat more preferable to employ the ammonia separately, as, for example, by introducing it into the treating vessel through special nozzles. For example, the solution of hydrogen peroxide may be sprayed on the tobacco, which tobacco is surrounded by an atmosphere of ammonia. Or alternately, the tobacco may be subjected to treatment with ammonia, and then exposed to the action of the solution of hydrogen peroxide.

The results obtained are especially favorable if the tobacco is first treated with hydrogen peroxide solution and this step then followed by activation with ammonia. For example, the tobacco may be first sprayed with dilute hydrogen peroxide solution and then brought into a container filled with gaseous ammonia. By this procedure the bleaching action takes place first in the atmosphere of ammonia so that by regulating the amount of ammonia in this atmosphere the speed and degree of bleaching may be regulated. Another advantage of this method is that by subsequent treatment of the tobacco with ammonia the dilute hydrogen peroxide solution remaining on the tobacco is completely decomposed so that after the resulting bleaching process there is no peroxide left on the tobacco. Moreover this process permits the application of hydrogen peroxide solution in uniform amounts without any loss of the same before the bleaching reaction occurs. By this procedure economy in the use of the hy-

drogen peroxide solution is attained and a very uniform bleach results.

According to the invention the bleaching process may be carried out in drums, rotating tubes, on moving belts, or in any other similar piece of apparatus, with the use of suitable spraying or squirting apparatus such as nozzles, arrangements for trickling, etc. When gaseous ammonia is used, it may be applied by spraying on through fine nozzles, by vaporizing solutions of ammonia, or by leading into the vessel, ammonia in gaseous form. In utilizing the bleaching process other materials may be introduced which are customary in tobacco treatment processes for the attainment of a pleasing aroma. For example, arrack, or any other valuable material may be added, for example, arrack, sugar solutions, etc. These may be sprayed on the tobacco with the hydrogen peroxide solution.

Example 1

1 kilogram of cut tobacco was sprayed with 1.5 litres of 3% hydrogen peroxide solution containing 5 cc. of ammonia per litre. The solution was sprayed through a nozzle. The tobacco was then slowly dried. The product was of satisfactory lightness in color and suffered no substantial loss in weight.

Example 2

1 kilogram of tobacco was moistened with 1 litre of 3% hydrogen peroxide solution. The solution was sprayed on through a nozzle. The tobacco was then brought into an atmosphere containing ammonia. The tobacco was bleached to a very desirable color.

Example 3

1 kilogram of tobacco was treated with 100 cc. of 10–30% hydrogen peroxide solution which was sprayed on through fine nozzles. The tobacco was then brought into an atmosphere containing ammonia. The product was of satisfactory lightness of color and weight.

Example 4

1 kilogram of tobacco was first treated with ammonia in gaseous form and then sprayed with 1 litre of 5% hydrogen peroxide solution. The bleaching results obtained were very satisfactory.

I claim:

A process of bleaching tobacco which comprises spraying the tobacco with a solution of hydrogen peroxide sufficient in amount to bleach said tobacco but insufficient in amount to cause said tobacco to undergo a substantial loss in weight.

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