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AROMATIZING FOOD CONCENTRATES

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13 Claims. (Cl. 99—23)

ABSTRACT OF THE DISCLOSURE

Adsorb released volatile aromatics on porous activated charcoal prior to their deterioration in the preparation of concentrates from coffee, tea, or cocoa. The released volatiles are recovered from at least one conventional processing step where volatiles are released. The adsorbed aromatics are extracted from the charcoal by a solvent having a boiling point between 32° F. and 10° F. and returned to the concentrate.

This is a continuation-in-part of application Ser. No. 36,752, filed June 17, 1960, and application Ser. No. 301,639, filed Aug. 12, 1963, both now abandoned

This invention relates to the preparation of beverage food products. More particularly, it relates to processes for producing coffee, cocoa, tea, and like products characterized by an improved aroma and flavor.

The preparation of instant coffee is typical of one aspect of the invention and will be described for purposes of illustration, but it should be understood that this is merely illustrative of a preferred application of the invention and is not to be construed as limitative.

It is common knowledge that the flavor and aroma of coffee brewed from a batch of freshly roasted and ground coffee is superior to the flavor and aroma of coffee brewed from the same batch of coffee after it has been stored for any considerable period after roasting and grinding. This is merely a readily observed manifestation of what is experienced daily by a host of coffee drinkers and merely confirms the known belief that the aromatic or fragrance-imparting constituents of roasted coffee have relatively low boiling points and are highly volatile, that immediately after roasting coffee begins to lose its aroma, that even in so short a period as an hour or two an appreciable loss of aroma is evident, and after the roasted coffee is ground, the aromatic substances begin to undergo undesirable chemical changes to further increase the loss of true coffee aroma.

One object of the present invention is to provide a process for preparing concentrates of food products such as coffee, tea, cocoa, and the like with improved flavor and aroma.

Another object of the invention is to provide a process wherein the volatiles which contribute to flavor and aroma are recovered before deterioration during at least one of the conventional processing steps for such food products, and wherein the volatiles recovered at any one or all stages of the process are entirely or in part returned to the food product or added to another food product, so that products of full natural or controllably altered flavor and aroma may be produced.

A further object of the present invention is the provision of a particular filter for adsorbing the aromas and volatiles that emanate from conventional processing of a beverage food product and of a solvent extraction process which desorbs the filter of the aromas and volatiles with minimum retention within the filter.

Another object of this invention is to provide a process for sorbing volatile-containing aromatics released during conventional processing of a natural fruit or vegetable

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product, such as the production of a concentrate of such fruit or vegetable, and particularly completing such sorption in a medium before substantial deterioration of the aromatics, such as may occur by oxidation, hydrolysis, or other chemical change, and also substantially maintaining the integrity of aromatics after the sorption.

These and other objects and the manner of obtaining the improved products which constitute another aspect of my invention will become better understood from the description which follows:

In the usual processes of manufacture of instant coffees, for instance, the green coffee beans are first roasted to develop color and flavor. Then the roasted beans are ground or cut to the desired mesh or particle size for efficient extracting. Then a water extract is made from the ground beans. The extract may or may not be partly concentrated before drying. Lastly, the extract is dried and the resulting dry material is the instant coffee of commerce. In such a process of manufacture, the volatile-aromatic constituents of the coffee are lost and a beverage prepared from the finished product often has a flat, insipid flavor.

The excessive losses of the volatile aromatics which accompany the usual processes of manufacture of instant coffees have been of serious concern to the instant-coffee industry for many years, and accordingly various procedures have been developed or suggested for trapping the volatile aromatics and for returning them to the finished instant coffee.

For example, with one procedure an inert gas such as nitrogen is passed through the coffee while it is being ground. The gas picks up some of the volatile aromatics. Then the gas is passed through a mass of instant coffee for the purpose of imparting some aroma or bouquet to the instant coffee. At best, only a slight improvement results, for if the inert gas removes aroma from the coffee being ground, it will likewise carry the aroma away from the instant coffee through which it is being passed.

Another procedure is to make the coffee extraction in a closed vessel to prevent the escape of the volatile aromatics. After the extraction is completed, an inert gas such as nitrogen is passed through the extractor. The gas is then passed through a condenser and the moisture in the gas is condensed into a distillate containing the volatile aromatics. The distillate is either added directly to the instant coffee or the volatile aromatics are washed out with ether and the ether extract is added to the instant coffee. Then sufficient heat is applied to the mass to drive off the ether and the volatile aromatics supposedly remain in the instant coffee. Only a limited improvement results in the aroma of the finished product, since a major portion of the volatile aromatics are not recovered in the procedure described, due to losses inherent in each step and also additional appreciable losses may accompany the heating required to remove all traces of ether from the finished instant coffee.

With still another procedure which has been practiced, live steam is passed through the coffee prior to making the extraction and the steam is then condensed. The resulting distillate contains the volatile aromatics. Ether is mixed with the distillate to extract the volatile aromatic from the water in the distillate. Then the ether layer is decanted from the water layer and the ether layer containing the extracted volatiles is added to the instant coffee. Sufficient heat is applied to the mass to drive off all traces of the ether and the volatile aromatics supposedly remain in the instant coffee. Again only a limited improvement results, since a considerable portion of the total of volatile aromatics is not recovered and appreciable losses accompany each step of the process, including the heating required to free the instant coffee from all traces of the ether.