The invention relates to a method intended to rapidly age green whiskey such, for example, as bourbon or rye.

An object of the invention is to age and improve the quality and taste of whiskey in a short time by heating the green whiskey in the presence of predetermined quantities of charcoal and roasted white oak wood chips containing predetermined restricted proportions of wood tar oils, hereinafter referred to as alcohol solubles.

A further object of the invention resides in the distillation of the whiskey in the presence of charcoal-roasted wood chips with a constant reflux condensation of the evolved vapor and a return of the condensate to the body undergoing distillation in the heating zone.

In lieu of the charcoal-roasted wood chips, a suitable charcoal capable of removing fusel oils and the "slop odor" from the liquor containing a suitable quantity of alcohol solubles obtained from white oak wood or other like materials may be used in our process.

Other and numerous objects of the invention will be apparent to those skilled in the art from the specification and appended claims.

In practicing the invention, we preferably prepare the charcoal-roasted chips by the heat treatment of white oak. Approximately two to three pounds of white oak sawdust may be placed in the standard white oak barrel and ignited in any suitable way. The combustion of the sawdust serves to char the interior of the barrel to the extent necessary to produce the charcoal-roasted chips removed from the heated surface of the barrel. This is the well known or conventional method for charring a white oak barrel.

The charcoal with a relatively small amount of the roasted wood is removed from the treated barrel. Wood tar is absorbed in both the charcoal and the wood chips. The roasted wood should not exceed 10% of the charcoal-roasted wood mixture.

In accordance with our invention, therefore, we add to the vessel containing the green whiskey a charge comprising sub-divided residual products of wood distillation including, as one component, a relatively large amount of active and absorptive charcoal in an amount sufficient to remove the foul odors from the green whiskey during the heating process to cause the necessary reactions between the higher alcohols and acids, which component is relatively devoid of alcohol solubles, and a second and minor component of the sub-divided products of wood distillation which is relatively less active than the first component and is not substantially absorptive but which contains a substantially greater amount of the alcohol solubles in a quantity sufficient to improve the color, taste and quality of the whiskey with great rapidity, but of such a character and quantity as to not transfer a bitter or undesirable taste to the whiskey during the heating operation.

Because of the heat treatment described, the finely divided products of wood distillation contain no components which release undesirable quantities of alcohol solubles or other constituents of the wood which, when present in excessive amounts, deleteriously affect the whiskey.

In the modification herein described, where an extract or distillate derived from the heat treatment of the wood is employed in lieu of the finely divided roasted wood, the amount of such alcohol solubles provided by the distillate or extract should preferably be substantially the same in amount as would be produced by the finely divided roasted wood structure were the same employed; or, in other words, the quantity of alcohol solubles must be substantially less than the quantity thereof which would be produced from destructive distillation of the same quantity of wood from which the charcoal content or component employed was obtained. The quantity of charcoal which is relatively active and relatively poor in alcohol soluble content, must exceed greatly the quantity of the component bearing the alcohol solubles.

The chips prepared as aforesaid are then placed in a heating vessel of any desired kind containing the green whiskey to be aged. Although the proportions of the charcoal-roasted wood chips to the whiskey may vary, we have found that most beneficial results may be attained by adding approximately 60 grams of the black, loosely adhering char prepared as aforesaid to one thousand (1000) c. c. (1 liter) of green whiskey. The vessel containing the mixture is then heated to raise its temperature slightly above the boiling point of the whiskey at atmospheric pressure.

The treating vessel is equipped with a suitable reflux condenser to which the evolved vapors are admitted. The vapor substantially in its entirety is condensed in the reflux condenser and returned to the heating zone so that there is a constant evaporation, condensation, and rebuilding of the liquor. Little or no vapor escapes the condensing action of the reflux condenser. This operation is carried on until the fusel oils and "slop odor" have been removed from the whiskey.
and the taste and quality of the whiskey materially improved and equal to whiskey prepared by the conventional methods and aged for a period of years. The operation may be conducted in the presence of air or an inert gas such as nitrogen and CO₂.

Due to the finely divided character of the wood tar saturated charcoal-roasted wood chips, large surface contact with the whiskey is obtained and because of the prior roasting of the wood to char the same, the application of heat to the treating vessel does not release undesirable quantities of tannic acid or other constituents of wood that when present in excessive amounts cause the whiskey to have a bitter and undesirable taste.

The distillation and constant reflux condensation of the evolved whiskey vapor in the presence of the charcoal-roasted wood chips produce, as aforesaid, rapidly removed impurities from the liquor and imparts to it a full flavor and mellow quality, palatable in all respects and other characteristics and qualities comparable to a whiskey made by known processes aged for many years.

Furthermore, the esters, acids and solids present in the whiskey resulting from this treatment are at least 300 to 400% greater than found in green whiskey and are comparable in odor and taste to whiskey aged upwards of ten (10) years.

As a modification of the process, charcoal may be used impregnated with a wood tar distillate of the type found in the charcoal wood tar chips produced in the charring of white oak, as herein specified. Thus, the charred chips may be eliminated providing a wood tar distillate derived from the charring of the wood is included in the liquor undergoing treatment, preferably when absorbed in the charcoal used in the process. In this modification, a suitable amount of charcoal must be used to absorb the fuel oils and remove the slop odor from the whiskey. Likewise, a suitable amount of wood tar distillate must be present to give the whiskey its full flavor and color and to make it mellow and palatable.

In this modified operation, it is also essential that the whiskey in the presence of the afore-said ingredients be distilled and constantly refluxed in the manner stated above.

As stated, the constant evaporation, condensation, and rebolting of the liquor is an essential feature of the process, tending to rapidly remove all impurities and to give the whiskey its desired quality.

Of course, if desired, the green whiskey can first be heated in the presence of the charcoal, the charcoal filtered off and then, as a separate step, the wood tar distilled, or roasted wood containing the wood tar distillate can be added and heated, or the reverse of these steps can be practiced. The invention, therefore, is not limited to the simultaneous treatment of the whiskey with the charcoal wood tar chips.

While refluxing, as herein described, is permissible, it will be understood to those skilled in the art that the green whiskey may be heated short of its boiling point in the presence of the mixture of char having the differential quantities of alcohol solubles, as herein described.

Having thus described our invention, what we claim is:

In the art of aging green whiskey, the steps which comprise adding to the vessel containing the green whiskey, finely divided heat treated products of wood distillation comprising a first component of active charcoal having substantial absorptive characteristics and being free from substantial quantities of extractable alcohol solubles and a second roasted wood component of less active and absorptive character, but containing a relatively greater amount of alcohol solubles, said first component being present in an amount of at least 80% relative to the second component whereby the relative proportions are maintained so that the first component absorbs the odoriferous substances from the green whiskey while the alcohol soluble content of the minor second component rapidly imparts the necessary taste, body and odor to the whiskey, and heating the whiskey in the presence of said components.

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