Method And Device For Alcoholic Beverage Treatment

FIELD OF INVENTION

The present invention relates broadly to a method and a device for alcoholic beverage treatment.

BACKGROUND

Different technologies have applied magnetic fields for the treatment of beverages, including devices using the magnetic field of permanent magnets used to produce ageing effects not only on wine and whisky, but also pickles, soy sauce and miso, etc. Examples of these are magnetic clips for the wine bottles. Also, unidirectional polarized magnetic fields have been produced from an alternating current (A.C.) supply. Existing magnetic field technologies operate by either allowing the flow of wine through a pipe-like structure or by means of allowing greater convenience by way of treatment when the wine is still contained in its bottle. Typically, the time taken for treatment by these technologies is at least a day to achieve the desired effects. Also, many of the existing treatments are recommended for treatment immediately prior to consumption, due to a limited "lifetime" of the treatment effects.

Alcoholic beverages such as wine are of great significance in the food and beverage industry and are commonly drunk by people across all strata of society. Closely associated with wine consumption is wine appreciation. A wine that can be termed as classic or premium excels in all aspects of appearance, smell, taste and “mouth-feel”. Usually, a wine develops these desirable characteristics after it has been preserved for some time. This leads to the concept of wine ageing. Wine ageing results in desirable changes like improvement in the wine flavour, the “mouth-feel” and the development of bottle-bouquet, which result in increases to the market value of the wine.

Conventional wine ageing involves great effort and patience. A lot of time is spent in ensuring appropriate conditions and waiting for the results, up to a few decades in some cases. In addition, a large space needs to be apportioned for the storage of

the wine. If the wine is over aged, or if flaws develop, the time and effort spent become futile.

Other reported effects of liquid treatment include the increased ability of liquids to dissolve substances and especially to allow hardness components to remain in the water, and the ability to increase the pH value of water through single frequency UV or microwave treatments. Thus, some devices used to preserve and age alcoholic beverages make use of UV treatments or Microwave treatments. By way of affecting e.g. the wine biochemistry, the devices may decrease the hydrogen ions present, reducing the acid to fruit ratio. However, methods using these principles tend to cause unbalance to the acid amounts, resulting in an increased tendency for colour destabilization and for microbial spoilage.

SUMMARY

In accordance with a first aspect of the present invention there is provided a device for electromagnetic wave treatment of alcoholic beverages, the device comprising a receptacle for receiving one or more beverage containers; an inductor coil coupled to the receptacle for inducing an electromagnetic field in the receptacle; a generator for generating a driving signal for the inductor coil such that the driving signal has a selected waveform of varying frequency for generating a varying electromagnetic field in said inductor coil.

The driving signal may comprise a radio wave frequency signal.

The radio wave frequency signal may have a frequency range of about 1kHz to about 10kHz.

The radio wave frequency signal may have a voltage amplitude range of above 0 to about 10V.

The radio wave frequency signal may have a current amplitude range above 0 to about 1A.

The generator may generate the driving signal such that a polarisation of the electromagnetic field is varied.

The waveform may be selected such that accelerated ageing of the beverage is within a duration of about 30 minutes or less.

The generator may comprise a power supply/adapter, for supplying current to the device; and a stabilizer circuit for removing irregular voltage variations in an input voltage to an integrated circuit of the generator for stability.

The power supply/adapter may have an input terminal connected directly to a mains power source.

The generator may comprise a bridge-type circuit for generating the driving signal.

The generator may comprise two half-bridge driver chips for driving the bridge-type circuit.

The integrated ciruit may comprise a programmable chip for controlling the half-bridge driver chips for generating the selected waveform.

The inductor coil may comprise conductive wires wound around a non-magnetic hollow receptacle.

In accordance with a second aspect of the present invention there is provided a method of treatment of alcoholic beverages, the method comprising generating a driving signal for an inductor coil for inducing an electromagnetic field; subjecting a beverage container to the electromagnetic field; and controlling generation of the driving signal such that the driving signal has a selected waveform of varying frequency for generating a varying electromagnetic field.

The driving signal may comprise a radio wave frequency signal.

The radio wave frequency signal may have a frequency range of about 1kHz to about 10kHz.

The radio wave frequency signal may have a voltage amplitude range of above 0 to about 10V.

The radio wave frequency signal may have a current amplitude range above 0 to about 1A.

The driving signal may be generated such that a polarisation of the electromagnetic field is varied.

The waveform may be selected such that accelerated ageing of the beverage is within a duration of about 30 minutes or less.

The treatment may be for the purpose of one or more of a group consisting of:

producing an alcoholic beverage smoother to the palate,

producing an alcoholic beverage less abrasive to the throat,

producing an alcoholic beverage decreased in sensory perception of tannins,

producing an alcoholic beverage that tastes less prickling,

producing an alcoholic beverage that is sweeter, and

producing an alcoholic beverage that has an alcohol fragrance of less piercing nature than the untreated alcoholic beverage.

The treatment may be for the purpose of one or more of a group consisting of:

producing an alcoholic beverage unchanged in alcohol content,

producing an alcoholic beverage with substantially no loss of colour intensity,

producing an alcoholic beverage that develops a lower degree of hue and a lower amount of browning,

producing an alcoholic beverage with little variations in dry extract levels,

producing an alcoholic beverage with unchanged degree of clarity as observed compared with the untreated alcoholic beverage, and

producing an alcoholic beverage having minor variations in acidity levels and acidity levels within existing ranges of respective beverage types.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention will be better understood and readily apparent to one of ordinary skill in the art from the following written description, by way of example only and in conjunction with the drawings, in which:

Figure 1 is a front view of a device according to an example embodiment of the present invention.

Figure 2 is a perspective view of a component of the device of Figure 1.

Figure 3 is a schematic diagram showing a cross-sectional view of the component of Figure 2 illustrating an electromagnetic field generated, according to an example embodiment.

Figure 4 is a cross-sectional front view of the device of Figure 1, with a power supply unit connected, according to an example embodiment.

Figure 5 is a schematic circuit diagram of the electrical implementation of the device according to an example embodiment of the present invention.

Figure 6 is a circuit diagram of a details of the electrical implementation of the device according to an example embodiment of the present invention.

Figure 7 is a circuit diagram of a details of the electrical implementation of the device according to an example embodiment of the present invention.

Figure 8 shows a flow chart illustrating a method of treatment of alcoholic beverages according to an example embodiment.

DETAILED DESCRIPTION

An example embodiment of the present invention provides a device and method for enhancement of alcoholic beverages, such as wines. In the example embodiment, a low frequency electromagnetic wave is used for the treatment of the wine in a container. The treatment brings about enhancements to effects relating to alterations in taste and organoleptic properties of the wine, without deteriorating the quality of the wine. The performance of the treatment is not limited by the alcoholic content of the wine or the raw materials used as bases for the wine.

In the example embodiment, an electrical device is used to generate a low frequency electromagnetic wave for the treatment. The electrical device supplies an A.C. current to an adaptable electromagnetic wave generator to produce square waves, which induce an electromagnetic field to be generated by a inductor coil. The electrical device is time adjustable and the extent of the treatment effects varies according to the span of treatment time. By placing wine within the influence of the field, the wine is treated from the moment the current flows though the inductor coil. When the pre-set time span of treatment is reached, the current is cut off and the treatment of the wine is completed.

Alcoholic beverages comprise significant amount of alcohol and sugar, by-products of fermentation, acids and extracts of fruits such as tannins and pigments from grapes for wines all dissolved or miscible within a large proportion of water. For example, wine comprises organics such as alcohol, tannins and lipids. Complex carbon bonding forms exist within these compounds, especially in heavy-weight organic molecules. An electromagnetic field with field lines generated within the wine is believed to bring about changes to the properties of these components and thus influence the quality of the wine.

During treatment, the example embodiment applies electromagnetic waves with varying frequency ranges within a specified range, as opposed to, for example, relying upon a single frequency and sinusoidal amplitude variation. Varying the frequency ranges can meet the resonant frequencies of different molecules so as to cause sufficient disturbance to the molecules to bring about variations to the intermolecular forces and the bonding or orientation of the molecules. Treatment

time has been found to depend on the influence of the electromagnetic field that is coupled with a chosen combination of input electrical waveform and frequency. The use of both electric and magnetic fields to produce an electromagnetic field in the example embodiment is believed to result in an effect significant enough to cause changes at the molecular levels and not result in reversal of the changes due to natural phenomena such as Brownian motion. The treatment in the example embodiments results in substantial changes and the effect of the changes remains pronounced enough for a duration such as not to render the results momentary.

There appears to be a relation between the strength of the electromagnetic field and the electrical and mechanical parameters of the inductor coil and in turn, the treatment effects. The higher the output current in the inductor coil is, the greater the strength of the electromagnetic field. The resultant strength is also dependent on the number of turns in the inductor coil and the diameter dimensions of the wire and the dimensions of the inductor coil. In the example embodiment, the polarity of the electromagnetic field induced by the inductor coil is also reversed at the varying frequency.

Significant changes in the mouth-feel between the wine treated by the example embodiment and untreated wine have been found. However, the wine subjected to treatment by the example embodiment for suitable time lengths show no quantitative differences in the tannins present were detected. The treated wine was found in general to be more soothing to the throat and to the palate, and generally less astringent.

The changes in the properties of the water as a result of the electromagnetic field influence in the example embodiment do not appear to be a major influence on the other common components contained in the wine, especially free anthocyanins—responsible for colour, various forms of acid, alcohol molecules, and the extracted components into the wine—related mainly to the amount of dry extract.

Treatment by the example embodiment appears to be capable of causing a difference in the release of the aroma of the wine and the overall fragrance itself. This may result by either varying the extent to which molecules responsible for

volatile compounds are released into the air or varying the chemical structure of the volatile compounds themselves.

An example embodiment is described hereinafter in detail. With reference to Figure 1, the example embodiment comprises of a container 100 that is in the shape of a barrel for containing, for example, wine bottles. The barrel shaped container 100 serves as a housing for electrical components of the device in an example embodiment. The barrel shaped container 100 thus functions to prevent exposure of the electrical components on the one hand, and can provide design freedom for e.g. aesthetic or marketing purposes on the other hand. As such, it will be appreciated that the shape and configuration of the container is not limited to the barrel shaped container 100 shown for the example embodiment.

With reference to Figure 2, the container (100 in Figure 1) contains a holder 202, which holds a wine bottle or container 200 containing wine. The holder 202 has an open top 203 to allow placement of the wine bottle 200 into the holder 202 and an enclosed bottom 204 for holding the wine bottle 200 in the holder 202. The holder 202 is of circular shape. However, it will be appreciated that the holder 202 may be of any other suitable shape to accommodate one or more wine bottles or containers such in different embodiments.

The edges of the open top 203 of the holder 202 project horizontally forming a lip 205, which enables the holder 202 to be fitted within the container (100 in Figure 1). As illustrated in Figure 4, the lip 205 engages a flange 511 in the interior of the container 100. The size of the holder 202 may be large enough to hold all standard size wine bottles 200. The shape of the holder 202 may be cylindrical, cubical, spherical or the like instead of hexagonally shaped.

The holder 202 comprises a coil of wire 201 (also known as "inductor coil" or "inductor") that is spaced evenly and wound round its centre portion. This essentially creates an inductor for the generation of electromagnetic field. In the example embodiment, the coil of wire 201 is of a diameter such that the temperature increase resulting from a specified current level does not exceed the tolerance level of the coil of wire 201 and allows prolonged operation of the device, for example, for treatment of a second bottle in turn. The coil of wire 201 may be made of any

conductive metal, including but not limited to copper, nichrome and the like. Also, the coil of wire 201 may be insulated or shielded by a material such as rubber, plastic and the like externally. In the example embodiment, no ferromagnetic material, for example a permanently magnetised iron core, is required for operation with the inductor to achieve the desired inductance.

In the example embodiment, the container (100 in Figure 1) and holder 202 are made of material resin. Any other material may be used provided the container (100 in Figure 1) and holder 202 do not cause any substantial difference to the electromagnetic field generated or limit the exposure of the beverage to the electromagnetic field to an extent that reduces the effects of the wine ageing treatment. For instance, other materials that may be used include wood, glass, ceramics, plastics such as polypropylene, nylon, and the like.

Returning to Figure 2, in the example embodiment, the wine ageing treatment time span is between 5 minutes to a maximum of 30 minutes per treatment. The material of the wine bottle or container 200 is made of non-magnetic material, for example glass, that does not concentrate the electromagnetic field within the wine bottle 200 itself, but allows the generation of the electromagnetic field in the area of the wine contained in the wine bottle 200. Furthermore, in the example embodiment, the configuration is such that the wine to be treated can receive the full effects of the electromagnetic field as illustrated in Figure 3.

Figure 3 shows the pattern of an electromagnetic field 300 generated by the inductor coils 201 in the example embodiment. The field is concentrated within the holder 202 and spans throughout the entire area of the wine in the wine bottle 200.

With reference to Figure 4, the electrical implementation of the example embodiment consists of a power supply/adaptor unit 500 interconnected to the internal components within the container 100 via a suitable connector 501. Within the container 100, the example embodiment comprises an electromagnetic wave generator 506 coupled to a control unit 504 and a voltage stabiliser unit 502. An output signal from the power amplifier unit 508 is coupled to the inductor coil 201 through wire connections 510, 512.

Figure 5 shows a block diagram of the electrical implementation in the example embodiment. The device comprises of a voltage stabilizing unit 502, a control unit 504, an electromagnetic wave generator 506 and an electromagnetic inductor coil 508. Both the voltage stabilizing unit 502 and the electromagnetic wave generator 506 are connected to a voltage supply of V_{cc}.

The voltage V_{cc} is supplied from the adjustable on/off power supply 500 (Figure 4) which is connected to the main power source. The voltage V_{cc} may be set at a value ranging from above 0 to 10V in the example embodiment. The voltage stabilizing unit 502 converts the voltage V_{cc} to a stable 5V direct voltage in order to provide a stable working power supply to the control unit 504 in the example embodiment.

The control unit 504 is programmable and produces three output signals to the electromagnetic wave generator 506 in the example embodiment. The electromagnetic wave generator 506 is connected to the electromagnetic inductor coil 508 and provides the electromagnetic signal output to the electromagnetic inductor coil 508.

The operation of the device will now be described in more detail with refrence to Figures 6 and 7. Figure 6 shows the circuit diagram of the voltage stabilizing unit 502 and the control unit 504 in the example embodiment. The voltage stablilizing unit 502 comprises a voltage stabilizer Q5, a resistor R14, capacitors C8, C9, C12 and a diode D1.

In the example embodiment, one end of the resistors R14 is connected in line with the supply voltage V_{cc} and is connected to the V_{in} port of the voltage stabilizer Q5. The capacitor C12 is connected between the V_{in} port of the voltage stabilizer Q5 and ground. The capacitors C8 and C9 are connected between the V_{out} port of the voltage stabilizer Q5 and ground. In the example embodiment, capacitors C12 and C8 are capacitors having a defined polarity. The positive and negative poles of the diode D1 are connected to the V_{out} port and the V_{in} port of the voltage stabilizer Q5 respectively.

The control unit 504 comprises a programmable chip U3, resistors R8, R9, R10 and R11, and capacitors C6 and C7 in the example embodiment. The programmable chip U3 is a Microchip Technology Inc. PIC12F675 chip. The V_{dd} port of programmable chip U3 of the control unit 304 is connected to the V_{out} port of the voltage stabilizing unit 302, for provision of the direct voltage of 5V in the example embodiment. The capacitor C6 is connected between GP5 port of the programmable chip U3 and ground. The capacitor C7 is connected between the GP4 port of the programmable chip U3 and ground. The resistor R11 is connected between the V_{dd} port and the $\overline{MCLR}$ port of the programmable chip U3.

Output signals A, B and C are coupled to the electromagnetic wave generator unit 506 (Figure 5) from the GP0, GP1 and GP2 ports of the programmable chip U3 via in-line resistors R10, R9, and R8 respectively. The programmable chip U3 of the control unit 304 is programmed to control the output signals A, B, and C. The output signals A, B and C are digital signals. The output signals A and B are exactly opposite to each other in the example embodiment. When the output signal A is high, the output signal B will be low and vice versa. The frequency of the output signal changes in signals A and B are controlled by the programmable chip U3. The output signals A and B in turn control the frequency of the signal fed into the electromagnetic inductor coil 508 (Figure 5). The output signal C is kept at high or "1" value during treatment operation of the device, and low or "0" at other times.

Figure 7 shows a circuit diagram of the electromagnetic wave generator 506 in the example embodiment. The three signals A, B and C received at ports A, B, and C respectively are coupled to two programmable chips U1 and U2 of the electromagnetic wave generator 306. The two programmable chips U1 and U2 are International Rectifier half-bridge driver chips IR21094. Port A is coupled to the "in" port of programmable chip U2 and port B is coupled to the "in" port of programmable chip U2 in the example embodiment. Port C is coupled to the $\overline{SD}$ ports of both programmable chips U1 and U2 in the example embodiment.

When the control signal C is at a high or "1" level, programmable chips U1 and U2 are in operation. When the signal C is at a low or "0" level, programmable chips U1 and U2 are not in operation.

The programmable chip U1 is coupled to MOSFETs Q1 and Q2 while the programmable chip U2 is coupled to MOSFETs Q3 and Q4 in the example embodiment. When the control signal A is high, an activation signal is output from the HO port of the programmable chip U2 to activate the MOSFET Q3, while no activation signal is output from the LO port of programmable chip U2 to MOSFET Q4. The control signal B will be low when the control sognal A is high, as described above, and a, activation signal is output from the LO port of the programmable chip U1 to activate the MOSFET Q1, while no activation signal is output from the HO port of programmable chip U1 to MOSFET Q2.

MOSFETs Q1, Q2, Q3 and Q4 are arranged in a bridge type circuit between the V_{cc} line and ground. When the MOSFETs Q1 and Q3 are active, V_{cc} is applied across the electromagnetic inductor coil 508 between e.g. points 700 and 702, with point 702 connected to ground. Similarly, when the MOSFETs Q2 and Q4 are active, V_{cc} is applied across the electromagnetic inductor coil 508 between e.g. points 700 and 702, with point 700 connected to ground. Thus, an electromagnetic field of varying polarity is generated by the inductor coil 508, with a frequency of the electromagnetic field controlled by the activation signals to the MOSFETs Q1 to Q4, based on control signals A and B received from the control unit 504 (Figure 5). A radio wave frequency driving signal in a frequency range of about 1kHz to 10kHz, and with a current amplitude range of above 0 to about 1A was used.

The electromagnetic wave generator 506 further comprises an indicator circuit comprising resistors R15 and R16 and diodes D5 and D6 in the example embodiment. The indicator circuit turns on a light emitting diode LED1 as an indication the the electromagnetic wave generator 506 is operating. A filter circuit comprising capacitors C3, C5, C13, C14 is coupled to the V_{cc} line and shortl circuit protection resistors R12 and R13 are further provided in the example embodiment.

Example embodiments of the present invention may comprise the following features and advantages.

Example embodiments may provide accelerated, convenient, and economical mechanisms to improve the quality of alcoholic beverages. This is achieved in the

example embodiments by altering aspects of the alcoholic beverage, such as taste, while not causing any perceivable deterioration or inducing changes that may increase the tendencies for deterioration of quality of the alcoholic beverage.

Example embodiments of the present invention may be utilised to enhance the flavour of alcoholic beverages. Alcoholic beverages include any liquid substance for human consumption that contains alcohol. For example beer, wine, spirits, distilled liquor and the like. In the example embodiment as described above, a focus is on wines. Wine may refer to any grape wines, fruit wines, grain-based wines, sparkling wines and the like.

Example embodiments of the present invention may achieve effects and quality substantially similar to conventional ageing of alcoholic beverages but within a significantly shorter time. In particular, example embodiments of the present invention may allow treatment to be completed within such a short time that the desired changes can be brought about within a matter of minutes. Treatment of such short time span eliminates the need for extra storage space for placement of the wine bottles, which is required in conventional ageing of alcoholic beverages. Furthermore, the treatment allows the alcoholic beverage to develop desirable qualities similar to aged and more costly alcoholic beverages.

Example embodiments of the present invention may increase the ease of the ageing process, as there is no need for prolonged monitoring of conditions, since the process only takes a few minutes. The type of care required is limited to only within the short time span, thereby decreasing the efforts required for ageing significantly.

Furthermore, example embodiments of the present invention may provide economic viability by providing for the ageing of lower quality wines. In the event of over ageing of such wines, losses will not be as great and loss of time would not be large due to the short treatment time in the example embodiments.

Alcoholic beverages that underwent the treatment provided by the example embodiments were perceived to be smoother to the palate and to have a stronger aroma without varying the alcohol content.

Moreover, example embodiments of the present invention may provide means of control for selecting the most suitable treatment so as to prevent a possible form of deterioration of the wine quality. Therefore, alcoholic beverages produced by the example embodiments, for instance, coloured wines, do not have observable loss of colour or shade, which is often a case with conventional ageing. Furthermore, the produced alcoholic beverage, in example embodiments, have no changes or little changes in acidity levels, which are needed for colour stabilization and for prevention of microbial spoilage. Alcoholic beverages produced were found to be not hazy and to have no changes in the dry extract content. As such, the "feel" of the beverage on consumption can be maintained.

Example embodiments of the present invention may also provide greater flexibility to end users by allowing them to determine based on their preference the extent of the treatment of their beverage by varying the treatment time span and the other treatment parameters such as waveform and frequency. The extent of treatment may be judged by the ability of the beverage to be aged and by estimating from typical ageing time spans of different types of beverages.

Example embodiments of the present invention may provide a treatment having a continued effect, judged by qualitative tasting, with the improved taste extending for a prolonged period of time, e.g. up to at least six hours in one example embodiment. This can avoid restrictions associated with existing treatments which require treatment immediately prior to consumption due to a short "lifetime" of the treatment effects. This can improve convenience to the consumer, without compromising the effects.

Figure 8 shows a flow chart 800 illustrating a method of treatment of alcoholic beverages according to an example embodiment. At step 802, a driving signal for an inductor coil for inducing an electromagnetic field is generated. At step 804, a beverage container is subjected to the electromagnetic field. At step 806, generation of the driving signal is controlled such that the driving signal has a selected waveform of varying frequency and amplitude for generating a varying electromagnetic field.

Many modifications and other embodiments can be made to the device and its method by those skilled in the art having the understanding of the above described disclosure together with the drawings. Therefore, it is to be understood that the device and its utility is not to be limited to the above description contained herein only, and that possible modifications are to be included in the claims of the disclosure.

CLAIMS

1. A device for electromagnetic wave treatment of alcoholic beverages, the device comprising:

a receptacle for receiving one or more beverage containers;

an inductor coil coupled to the receptacle for inducing an electromagnetic field in the receptacle;

a generator for generating a driving signal for the inductor coil such that the driving signal has a selected waveform of varying frequency for generating a varying electromagnetic field in said inductor coil.

2. The device as claimed in claim 1, wherein the driving signal comprises a radio wave frequency signal.

3. The device as claimed in claim 2, wherein the radio wave frequency signal has a frequency range of about 1kHz to about 10kHz.

4. The device as claimed in claims 2 or 3, wherein the radio wave frequency signal has a voltage amplitude range of above 0 to about 10V.

5. The device as claimed in any one of claims 2 to 4, wherein the radio wave frequency signal has a current amplitude range above 0 to about 1A.

6. The device as claimed in any one of claims 1 to 5, wherein the generator generates the driving signal such that a polarisation of the electromagnetic field is varied.

7. The device as claimed in any one of claims 1 to 6, wherein the waveform is selected such that accelerated ageing of the beverage is within a duration of about 30 minutes or less.

8. The device as claimed in any one of claims 1 to 7, wherein the generator comprises a power supply/adapter, for supplying current to the device; and a stabilizer circuit for removing irregular voltage variations in an input voltage to an integrated circuit of the generator for stability.

9. The device as claimed in claim 8, wherein the power supply/adapter has an input terminal connected directly to a mains power source.

10. The device as claimed in any one of claims 8 or 9, wherein the generator comprises a bridge-type circuit for generating the driving signal.

11. The device as claimed in clim 10, wherein the generator comprises two half-bridge driver chips for driving the bridge-type circuit.

12. The device as claimed in clim 11, wherein the integrated ciruit comprises a programmable chip for controlling the half-bridge driver chips for generating the selected waveform.

13. The device as claimed in any one of claims 1 to 15, wherein the inductor coil comprises conductive wires wound around a non-magnetic hollow receptacle.

14. A method of treatment of alcoholic beverages, the method comprising:

generating a driving signal for an inductor coil for inducing an electromagnetic field;

subjecting a beverage container to the electromagnetic field; and

controlling generation of the driving signal such that the driving signal has a selected waveform of varying frequency for generating a varying electromagnetic field.

15. The method as claimed in claim 14, wherein the driving signal comprises a radio wave frequency signal.

16. The method as claimed in claim 15, wherein the radio wave frequency signal has a frequency range of about 1kHz to about 10kHz.

17. The method as claimed in claims 15 or 16, wherein the radio wave frequency signal has a voltage amplitude range of above 0 to about 10V.

18. The method as claimed in any one of claims 15 to 17, wherein the radio wave frequency signal has a current amplitude range above 0 to about 1A.

19. The method as claimed in any one of calims 14 to 18, wherein the driving signal is generated such that a polarisation of the electromagnetic field is varied.

20. The method as claimed in any one of claims 14 to 19, wherein the waveform is selected such that accelerated ageing of the beverage is within a duration of about 30 minutes or less.

21. The method as claimed in any one of claims 14 to 20 wherein the treatment is for the purpose of one or more of a group consisting of:

producing an alcoholic beverage smoother to the palate,

producing an alcoholic beverage less abrasive to the throat,

producing an alcoholic beverage decreased in sensory perception of tannins,

producing an alcoholic beverage that tastes less prickling,

producing an alcoholic beverage that is sweeter, and

producing an alcoholic beverage that has an alcohol fragrance of less piercing nature than the untreated alcoholic beverage.

22. The method as claimed in any one of claims 14 to 21 wherein the treatment is for the purpose of one or more of a group consisting of:

producing an alcoholic beverage unchanged in alcohol content,

producing an alcoholic beverage with substantially no loss of colour intensity,

producing an alcoholic beverage that develops a lower degree of hue and a lower amount of browning,

producing an alcoholic beverage with little variations in dry extract levels,

producing an alcoholic beverage with unchanged degree of clarity as observed compared with the untreated alcoholic beverage, and

producing an alcoholic beverage having minor variations in acidity levels and acidity levels within existing ranges of respective beverage types.