AGE ALLOTMENT METHOD

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ABSTRACT

A method of stock control for food retailing, in which a first batch of product produced between a pair of dates is marked with a colour associated with that period and a second later batch is associated with a different colour.

A series of 4-6 colours denote a 4-9 week cycle if the colour changes weekly. The retail staff remember the sequence and recalls and stock rotation is simplified.

Packages are described in which the colour is on a label, wrapper or tag.
AGE ALLOTMENT METHOD

FIELD OF THE INVENTION

This invention concerns age identification of products which deteriorate as they pass through a distribution chain.

BACKGROUND OF THE INVENTION

The invention will be described with reference to packed foods such as dairy items, but those skilled in the art will appreciate its application to other fields, such as blood banks, storage of chemical compounds, photographic film and the like. It is common to identify packed food with bar codes which can be read by a bar code reader. Usually in addition the pack carries a USE BY date printed in the last stage of production. The wholesaler ships carton loads of product. The shop staff open cartons and display the individual packs on open shelves. In busy, high turnover stores, aging of stock is not an issue, but in others an appreciation of shelf life is vital to profits and customer satisfaction. Every one in the chain must be aware of diminishing time in which the product they are handling remains saleable. Reliance on the USE BY date is unwise as these are frequently overprinted and difficult to read or the print may be pale. When the stock is recalled for some reason, it may be laborious and inconclusive to check each pack by reference to the USE BY date. Consequently shop staff tend to return all stock regardless of age.

Chinese Patent Application 1282062 A describes a method of indicating the age of milk by adoption of seven colours to represent Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday. Thus the packaging indicates visually the freshness of the milk by colour instead of a printed code which may be subject to error or unintentional absence.

US 2002/0056751 A shows how to attach bar codes to circulating plates in a sushi bar to indicate a time frame in which the plate was added to the plate conveyor, e.g. 2.00 pm or 3.00 pm. This system is intended to avoid selling food which has been on sale for 4 hours at 41-140°F.

U.S. Pat. No. 4,993,050 describes a pen as a combination marker and counter. The felt tip pen is capable of changing the colour of marks made on goods being counted. This enables the user to allot a specific colour for different calendar quarters of the year.

SUMMARY OF THE INVENTION

The method aspect of this invention provides a method of indicating the age of product which deteriorates with age, comprising marking a first batch of product produced between a pair of dates with a colour associated with that period, and marking the second batch of product produced between a subsequent pair of dates with a different colour.

The period between the first pair of dates and the period between the second pair of dates are preferably consecutive.

Ongoing production may be divided into periods of convenient lengths where food production is under consideration, especially food with a limited shelf life, a period of a few weeks is desirable. This would normally be the period between production and the USE BY date. When food is dried or preserved the period may be months rather than weeks.

The number of periods and therefore the number of colours in a cycle may be selected to suit the product. The cycle may be repeated so that in any one year a cycle which may take from 20 to 40 weeks may recur. A few colours, preferably 2, 3, 4, 5, 6 or 7, suffice to produce a sufficient differentiation for retail purposes. The number of periods and corresponding colours may be selected to facilitate tracing when a batch is listed as defective and must be recalled from sale. If there are only two colours the periods must be long otherwise a recall would return wholesome saleable products along with reject products.

I have found that a sequence of 4, 5 or 6 colours each with a period of 4, 5, 6, 7, 8 or 9 weeks suits many retail foods.

Some foods by their packaging permit colour identification better than others. Dairy foods sold in packs are easier to mark in this way than small goods, e.g. salami, but the principle is applicable to tagged or wrapped products. When the product is in a pack then preferably the colour is made visible through the pack and therefore the colour which may be transparent or translucent and the colour applied to a packaging layer, e.g. a decal which lies under the surface of the pack. In this way the pack may be of uniform colour, only the colour of the decal changes. Alternatively, the pack itself may have an area of colour. If the machinery providing the colour to the pack fails, the colour may be applied by adhesive label.

It then becomes possible for the production process to produce batches which are uniformly marked. This separation is continued through the retail chain. Shop staff are able to read the age of the product by knowing the time sequence of the colours, green follows red, red follows blue, and so on. The decal may be a foil seal which is visible at the rim of the pack so that it is readily visible to both the shop staff and customer.

For colour blind customers and staff, a plastic tag may be inserted under the lid of the pack bearing the BEST BEFORE or USE BY date, plus the name of the colour all in alphanumeric symbols. In this way the staff need not remember the offending dates and look for tags bearing the colour word, e.g. GReEN. Some foods, such as bakery, become unsaleable in a day or two and the method is not intended for highly perishable foods with such a short life.

One product aspect of the invention provides a food product pack for performing the method described above, comprising a moulded container with a transparent lid and a label underlying the lid with an annulus of a particular colour which is visible when the goods are stacked, which colour functions as a date code indicating the product’s age which lies between a pair of dates in order to distinguish it from product of an age which lies outside these dates, and which colour is a member of a colour sequence known to the handler of the pack.
Certain embodiments of the invention are now described by way of example with reference to the accompanying drawings in which:

FIG. 1 is a section through a pack.
FIG. 2 is a plan of the pack lid shown in FIG. 1.
FIG. 3 is a side view of the pack showing how the coloured part of the label protrudes.
FIG. 4 is a colour and period sequence shown as a cycle.
FIG. 5 is a tag for juice cartons having a horizontal upstanding flange.
FIG. 6 is a USE BY label showing an area of colour.
FIG. 7 is a perspective view of a carton showing bar code information and a USE BY label.

The dairy factory manufactures flavoured dips from soft cheese. Referring now to the drawings, a controlled weight of 200 g of product is dispensed into shallow plastic packs 2, and waxed paper seal 4 is placed on top of the pack before the snap fit lid 6 closes the pack. The seal is circular and overlies the raised rim 8. The lid carries a circular label bearing the manufacturers trade mark, weight, USE BY date and customary information. The annulus 10 and the rim present ring A which is transparent and corresponds to a ring of identifying colour B, 12 mm wide around the perimeter of the seal. The packs receive the same seal for days 1-6 and they are packed in cartons bearing a seal of the same colour. The shop staff open the cartons and stock the store shelves with the packs, mixing them with packs showing the colour of the previous cycle. This permits efficient stock rotation. The staff use a mnemonic to remember the sequence shown in FIG. 3.

At 55 days the colour cycle repeats and follows through from production to customer. USE BY dates are printed on the lid label but they are a secondary check for the customer at the point of purchase. If a recall occurs, the recall instruction only need to specify the colour to show staff which packs to extract from the stock and then the manufacturer is able to specify the USE BY date to reduce the quantity of returns.

Waxed cardboard cartons for juice, custard and the like have a plastic tag 12 bearing the USE BY date and an area of colour 14 spanning the fold. The tag is crimped to the upstanding flange of the pack dig production.

Distribution Phase

The distribution chain also benefits from age allotment by colour. The production department of the manufacturing plant fills the containers with perishable food such as tomato paste. The cans travel to the warehouse in a carton.

Printed Cartons

If the manufacturer is using preprinted cartons, the cartons are printed with HEINZ® tomato paste 3x2 kg and a bar code containing trade unit numbers. The production department add a USE BY label 16 (FIG. 6) using an applicator gun. The 12x18 mm label is detached from a coiled ribbon 18 beating the words USE BY flanked by an area of colour 20 (red) and the printed date 3 Nov. 2004 22 which the operative dials up daily. The cartons leave on pallets for the warehouse.

Blank Cartons

If the manufacturer is using blank cartons, the cartons 24 (FIG. 7) carry no information about the contents and the production department applies to the carton a large label 26 which is the same as or similar to the can label showing HEINZ® tomato paste 2 kg. In addition, a 300x50 label 28 is dispensed from a manual applicator gun or a robotic applicator. The label has a continuous border 30 of grey colour along both edges and the same bar code as described above between the coloured border. The code is repeated along the ribbon and the application detaches a strip about 300 mm long containing pair of codes in series and applies one code to one face of the carton and the same code to the adjacent face so that in the warehouse one face is always visible. The production department also affixes the USE BY label 16 with the date and colour as described in the example above. The carton leaves on a pallet for the warehouse.

In the warehouse the bar codes is readable by a robotic scanner or an operative using a manual scanner. In both instances the warehouse identifies the carton contents from either the printing on the carton or the label.

The staff however know immediately the place of the carton batch in the warehouse handling sequence. The grey stock fall in age between the older blue stock and the younger brown stock which will arrive the following week. The staff know the sequence and arrange to deliver all the blue stock before they begin on the grey stock. No inspection is necessary to determine USE BY dates. Much time and error is saved in that endless checking is obviated. A variant label reads BEST BEFORE.

Another variant carries a Batch Code which indicates a specific production run and may even specify which shift made the product.

For example, a production department may run a morning, afternoon and night shift but in a working week there may be missed shifts. Even so, each shift is given a number so that 6 indicates Tuesday’s night shift. If production begins in week 17, ie. May, the bar code may read 176. All production for that week has a 17 batch code and carries a colour from the sequence which is appropriate to that week. So even though the code does not indicate a USE BY date, the colour has been selected to indicate a pair of dates, ie. between week 16 and 18.

If the manufacturer does not employ the age allotment by colour method and sends plain cartons with USE BY dates on the cartons, the distributor can introduce the system to incoming goods by application of one label per carton or carton batch such as a pallet load with a label carrying a colour from a sequence of his own devising.

The warehouse staff have label applicators loaded with labels of one colour and use them in weekly rotation. The label may have a central bar code surrounded by a ring of colour or lying between a pair of coloured bands.
It is to be understood that various modifications of and/or additions to the invention can be made without departing from the basic nature of the invention. These modifications and/or additions are therefore considered to fall within the scope of the invention. For custard and yoghurt, a 20 day period is appropriate. For beverages, such as beer, a 25-30 week period would be indicated by the bottle cap colour. Dry goods and long life milk may have periods of 12 months or more indicated on their containers. Although the periods are lengthy, the sequence remains the same and the distributor and retailer know the relative ages of all their stock.

What is claimed is:

1. A method of indicating the age of a product which deteriorates with age, comprising marking a first batch of product produced between a pair of dates with a colour associated with that period and marking the second batch of product between a subsequent pair of dates with a different colour.

2. A method as claimed in claim 1, wherein the pairs of dates are consecutive.

3. A method as claimed in claim 2, wherein there are 4-6 pairs of dates, the period between each pair being indicated by a different colour and the cycle is 4-9 weeks.

4. A method as claimed in claim 2, wherein the cycle is 48-60 days.

5. A food product container for performing the method of claim 1, comprising a moulded container with a transparent lid and a label underlying the lid with an area of a particular colour which is visible when the goods are stacked, which colour functions as a date code indicating the product's age which lies between a pair of dates in order to distinguish it from product of an age which lies outside these dates, and which colour is a member of a colour sequence known to the handler of the pack.

6. A food pack for performing a method of claim 1, wherein the wrapper has a printed area of a specific colour which is visible when the goods sold in the wrapper are displayed, wherein the colour functions as a date code indicating the product's age which lies between a pair of dates in order to distinguish it from like goods of an age which lies outside these dates and which colour is a member of a sequence known to the handler of the wrapped goods.

7. A packaging tag for performing the method of claim 1, wherein the tag has a printed area for specific colour which is visible when the goods bearing the tag are displayed, wherein the colour functions as a date code indicating the product's age which lies between a pair of dates in order to distinguish it from like goods of an age which lies outside these dates and which colour is a member of a sequence known to the handler of the tagged goods.

8. A label ribbon for performing the method as claimed in claim 1, wherein the legend USE BY is central and the colour is located between the print and the edge of the label.

9. A barcode label ribbon for use in an applicator in which the labels are detachable from the ribbon wherein the barcode expresses the Trade Unit Number (TUN) and each repeating barcode has an associated area of colour, wherein the colour functions as a date code indicating the product's age which lies between a pair of dates in order to distinguish it from like goods of an age which lies outside these dates and which colour is a member of a sequence known to the handler of the wrapped goods.

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