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Title: Apparatus for inspecting case of e.g. packages having e.g. substance subject to spoilage, and determining whether substance is contaminated with e.g. Bacillus subtilis, has processor determining whether package contains spoiled substance
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Abstract: NOVELTY - The apparatus has an inspection system comprising an electromagnetic source for generating an electromagnetic signal, and a set of electromagnetic scan systems arranged corresponding to respective packages of a case. Each scan system receives the electromagnetic signal, directs the received signal at the corresponding package, and receives an attenuated electromagnetic signal from the corresponding package. A processor e.g. personal computer, determines whether each package contains spoiled substance as a function of peaks (102-108) of the attenuated signal received from the package.
USE - Apparatus for inspecting a case of packages having a substance subject to spoilage, and determining whether the substance is contaminated with undesirable bacteria e.g. Bacillus subtilis, Staphylococcus epidermidis, Lactobacillus casei, Enterobacter cloacae, Saccharomyces Cerevisiae, or Clostridium sporogenes (all claimed). Uses include but are not limited to glass or plastic bottles, plastic containers, bags, pouches, cardboard boxes and plastic wraps, containing liquid products such as infant, toddler and adult nutritional formulas, fortifiers and dietary supplements, flowable non-solid product i.e. aqueous solution, solid product i.e. bar, and particulate product i.e. powder.
ADVANTAGE - The apparatus enables non-destructive inspection of packages for contaminants by analyzing electromagnetic signals from the packages, thus ensuring complete testing of a lot and reducing product waste and testing time of the packages, and hence increasing flexibility in responding to changes in product demand.
DETAILED DESCRIPTION - The electromagnetic signal is in the range of about 0.02 terahertz to about 3.5 terahertz. An INDEPENDENT CLAIM is also included for a method for inspecting a case having a set of packages and determining whether a substance in each package is spoiled.
DESCRIPTION OF DRAWING(S) - The drawing shows a graphical illustration of a plot of magnitude versus time for an attenuated electromagnetic signal received from a package containing a substance subjected to spoilage.
Peaks of electromagnetic signal (102-108)
Derwent Class Code(s): A89 (Photographic, laboratory equipment, optical); D16 (Fermentation industry); B04 (Natural products and polymers, testing, compounds of unknown structure); D13 (Other foodstuffs and treatment); S03 (Scientific Instrumentation, photometry, calorimetry); T01 (Digital Computers)
Derwent Manual Code(s): A12-E13; D05-H09; B11-C08B; B11-C08K; B11-C11; B12-K04; S03-E04A5; S03-E04F1; S03-E04F2; T01-J08F; T01-J13
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