

Examination

Food Technology

Section	Part	Question Number
3	2/10c)	28

Date

10/11/2011

Number of booklets
used for this question

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Instructions

- Write your Centre Number and Student Number at the top of this page.
- In the boxes provided write the name and date of this examination, and the number(s) of the question(s) attempted in this booklet.
- If you have not attempted the question, you must still hand in the Writing Booklet, with the words 'NOT ATTEMPTED' written clearly on the front cover.
- Write using black or blue pen. (Black pen is recommended.)
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- **You may NOT take any Writing Booklets, used or unused, from the examination room.**



Start here.

a) The possible causes of deterioration and spoilage of fruit includes enzyme activity which causes fruit to continue ripening after picked leading to deterioration and spoilage. The environment ~~causes~~ high levels of oxygen and a warmer environment causes ~~fruits~~^{fruit} to deteriorate and spoil faster than a cooler environment. Infestation of insects and other animals can cause deterioration and spoilage of ~~fruits~~ fruit if they feed on fruit, such as citrus bugs feeding on oranges and causing them to dry out and produce black spots. The transportation of fruit can lead to bruises and damage of fruit if not packaged properly therefore causing fruit to be damaged and promote spoilage.

b) FSANZ (Food Standards Australia and New Zealand) sets the labelling ~~legislation~~ requirements. The labelling requirements of a preserved ~~fruit~~ fruit product would include a barcode, a packaged on, used by or best before date, a ~~country~~ of the country where the product was produced in must be stated, the ingredients in decreasing ~~weight~~ weight must be listed including water and preservatives. ~~From~~^{postal} address of the producer is needed, The nutritional content/value must be stated in regards to the amount of energy (kJ), carbohydrates, protein, salt ~~and~~ sugar and fat present

in the preserved fruit product. If the product states that it is a certain preserved fruit product e.g. canned peaches it must state how much peaches the product ~~must~~ actually contains and this amount must be over ~~at least~~ twenty percent. No false health claims or misleading information is able to be provided on the label of the preserved fruit product.

c). Bottling is a preservation process which could be used to extend the shelf life of the companies over supplied fruit. This would be achieved by the selection of fruit that meets a certain criteria, which is then ~~spread~~ ^{spread} ~~chance~~ ^{chance} under high pressure to remove some microbes, the fruit would then be processed (chopped, peeled) and placed in a heat treated aseptic bottle to prevent growth of microbes, this bottle would then be filled ^{up to 1cm of the head space,} with either water or juice which may alter the pH of the environment making it unfavorable to some micro-organisms. This also incorporates the exclusion of air making the environment unfavorable to aerobic micro-organisms. The contents would then be heated above 100°C ~~to kill them~~ and quickly chilled to kill most remaining micro-organisms and bacteria. The contents are then sealed and placed in a ~~jar~~ ^{whetart} which is then heated ~~and~~ and rapidly ~~cooled~~ ^{cooled} which would ~~not~~ ^{not} ~~be~~ ^{be} ~~used~~ ^{used}

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a hermetic air tight seal ensuring no air remains in the
the fruit preserved fruit product therefore, no
microbes or bacteria could survive. Examples
would be ~~fruit~~ fruit jams ~~and bottled~~
~~fruit juice~~, and fruit puree.

Canning such as canned sliced pineapple preserves the
fruit as it creates an unfavourable environment for
microbes. Canning involves the selection of fruit based on
specific criteria and the washing of fruit under high
pressure to remove microbes the fruit is then prepared
(sliced, peeled) and placed into aluminium or tin cans,
the cans are then ~~can surface treated above 100°C to~~
~~ensure the removal of head space is then filled with~~
juice or water ~~to~~ up to 1cm of top to ensure removal
of air and ~~maintain pH~~ to alter pH levels to
create unfavourable environments for microbes. The
cans are then heated above 100°C to ensure
the death of all microbes and most bacteria, however
spores may remain. The cans are then press sealed ~~and~~
may have a ribbed pulled lid. The cans are then heated to
above 100°C and then placed in chilled water to
create a vacuum ensuring that all ~~the~~ air has been
removed as the contents shrink. Creating unfavourable
environments for aerobic microbes.

Therefore canning and bottling would preserve fruit product
and extend the shelf life as they create unfavourable

conditions for micro-organisms and protect the fruit from external damage