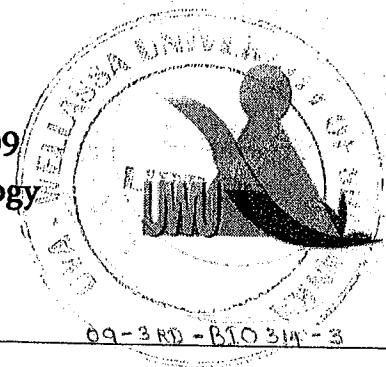


Uva Wellassa University, Sri Lanka
End Semester Examination – June 2009
BIO 314-3 Cereal Science and Technology



Time: Three (03) hours

Total 07 Questions

Answer any five (05) questions

1. A wheat noodles manufacturer purchased two wheat flour consignments from open market and used to manufacture wheat noodles. However, when the deliveries were being used to manufacture noodles, substantial amount of strings were dropped down and as a result of that his material productivity has declined from 92% to 90%.

The laboratory test results revealed that the gluten content of two consignments were 8.0% and 14%.

Explain the reason for occurring of substantial amount of droppings and remedial action to overcome this issue.

(20 marks)

2. Two rice millers purchased paddy from the same area, same season and stored them in their own warehouses situated in the same location for "off season" production. However, one miller made use of post harvest technology in preservation of his paddy by adapting aeration, proper ventilation, pest control practices, maintaining of hygienic practices around his premises etc. The other miller, who stored his paddy haphazardly.

Quality of paddy at the time of purchasing is as follows.

Moisture content 15.5%,

Level of impurities 1.5%,

Percentage of impurities 9.0 and

Varietal admixture 3.2%.

During "off season" the two millers milled their paddy and milled rice was sold in the open market. The miller who adapted post harvest technology fetch a high price than the other miller.

Explain how this value addition came to rice in terms of post harvest technology.

(20 marks)

3 A baker who has conducted a market survey with the view to make a loaf of bread for better consumer perception. The survey revealed that almost all bread in that area were not adequately leaven and volume, texture & bread crumb structure were not in consistence with the high quality bread. Explain how you are going to improve those quality characteristics while paying adequate attention on value addition process.

(20 marks)

4 A major problem encountered by a slice bread manufacturer was staling of his bread and as a result of that he was compelled to replace his product in the market every 3 days. As this staling process of bread was a huge income loss for him, he has decided to get advice from you.

Explain the process of staling and possible remedial measures to delay it.

(20 marks)

5 A super market owner has decided to give better visibility to his bottle of sunflower and coconut oils by placing them in front of glass windows of the shop. Even though, when sunlight falls on the oils, which imparts glittering and shiny appearance to the oils, the acid value of the oils has been exceeded as against the value specified by the regulatory requirements, after 3 weeks.

Explain the supermarket owner what is being happening to the oil along with a meaningful solution to overcome this problem.

(20 marks)

6 Write short notes on followings.

- I. Shortening agents for bakery products
- II. Leavening index of bakery products
- III. Kneading process of bakery products
- IV. Oven spring of bakery products
- V. Bread improvers

(20 marks)

7 A "seeni sambol" producer supplied considerable amount of his products to the sales outlets in the market with a 9 months shelf life. However, after 3 months from selling, the producer has received a considerable amount of customer complaints, stating that his product has completely been rancid and not fit for consumption.

- I. Explain the process happening in the "seeni sambol".
- II. Recommend the remedial measures to overcome it.
- III. Explain the role of antioxidants in controlling of rancidity, if you are going to incorporate them.
- IV. As foreign buyers reluctant to buy products with artificial antioxidants, suggest a method to control rancidity with a natural antioxidant.

(20 marks)

