



Faculty of Animal Science & Export Agriculture  
Uva Wellassa University

B.Sc in Export Agriculture

End Semester Examination – June/ July - 2010

Year III Semester II



**Grain Product Technology & Value Addition (EAG 344-2)**

**Instructions**

Answer all questions.

No. of questions : Five (05)  
No. of pages : Three (03)  
Time : 02 hours  
Total marks allocated : 40%

Index No :.....

**Essay**

**Question 01**

A and B are two store keepers in North central province where, temperature fluctuation was more predominant. While daytime was experienced with high temperature the night was relatively cold. The store keeper A has undergone a good training in Paddy post harvest technology the store keeper B did not have it at all, as he was a fresh recruiter. 100 metric ton of paddy has been purchased by each store keeper at 17.0% moisture content and at 3.0% impurities level and stored them there over period of 4 months. The store keeper A has strictly followed post harvest technology and the store keeper B didn't do it at all. Quality of paddy after 4 months of storage period was as follows.

Characteristics	A Store keeper	B Store keeper
i. Percentage of discolored grain	0.1	12.0
ii. Percentage of insect damage	0.1	16.5
iii. percentage of mold damage grain	0.2	18.0
iii. Thousand grain weight of a sample	25g	22.5
iv. Number of insect per 1Kg of paddy	Nil	17
v. Percentage of broken after milling	3.0	66.0

I. Explain why quality of paddy of store keeper A has contrasted to the quality of paddy of store keeper B.

**(50 Marks)**

II. Assumed, that you have been assigned as an adviser, how would you going to advice store keeper B to improve the keeping quality of his paddy.

**(50 Marks)**

### **Question 02**

A farmer has decided to produce parboiled rice for consumer market by adopting traditional way of parboiling, from which paddy was put into a vessel, poured cold water and boiled until split open of the husk of some of paddy grains in the top. Thereafter, parboiled paddy was dried in the sun continuously. De-husking and polishing were done using a steel huller with the view to get high quality rice for the consumer market. However, the farmer was thoroughly disappointed when seeing his product, because color of the finish product was yellowish and appearing of white bellies as well as split opened rice grains, which impart a poor appearance and texture to the finish product. A rice sample from the product was analyzed in a lab and found which was lack in Thiamin, Riboflavin, Niacin & Lysine comparatively premium quality rice in the market.

Advice the farmer how to make good quality parboiled rice by following very important steps involved in paddy parboiling process.

**(100 Marks)**

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### **Question 03**

What are the major quality parameters associate with the paddy post harvest technology and briefly explain importance of each parameter in maintaining quality as well as value addition process.

**(100 Marks)**

#### Question 04

A small scale catering manager has decided to produce bread for his consumers by himself, because he was compelled to acquire bread from different bakeries in the vicinity in order to cope with the demand. However, after making bread by himself from his bakery, he has received series of customer complaints with regards to:

- i. Color - Color of the bread is very poor and not attractive
- ii. Smell - Smell of the crumb is a little offensive
- iii. Shape - A loaf with collapsed appearance
- iv. Bread crumb - Bread crumb with large scale cavities
- v. Taste - Taste is slightly acidic

Therefore, the catering manger has decided to get your assistance to improve his bread with a scientific knowledge.

Explain the way that you are going to assist him in order to overcome these problems.

(100 Marks)

#### Question 05

Write short note for followings

- i. Role of shortening and leavening in bakery industry.
- ii. Wheat flour is the key to leavening process of bread.
- iii. Oven spring is the remarkable thing happening during baking.
- iv. The enzyme "Amylases" are very important for fermentation process of wheat bread.

(25 x 4 = 100 Marks)

