Uva Wellassa University

Faculty of Animal Science & Export Agriculture

B.Sc in Export Agriculture

End Semester Examination – August/ 2011

Year III Semester II

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

Instructions

Answer Five (05) questions only.

No. of questions : Six (06)
No. of pages : Three (03)
Time : 02 hours
Total marks allocated : 100%

Index No :.....

Essay

Question 01

Post harvest technology is an integral part of cereal science and technology. Therefore, quality parameters associated with the post harvest technology are playing vital role in manufacturing of high quality cereal food products for better customer perception.

Hence, explain how these quality parameters are important in order to produce high quality rice for the dynamic market.

(20 Marks)

Question 02

A sensory profile implies degree of satisfaction towards different sensory stimuli associated with a food product by the respondents.

Explain how can make use these profiles to make a competitive cereal food product for the dynamic market.

(20 Marks)

Question 03

I. Most of food products are hygroscopic in nature, are usually being equilibrium with the vapor pressure of the surrounding environment.

Explain impact of this property for the cereals when they have been stored under low and high vapor pressure conditions.

II. A store keeper who purchased well dried paddy at 12% moisture content and stored in a ware house for 3 months. Average ambient temperature and relative humidity of the surrounding environment were around 30^0C and 80% respectively.

Find out possible equilibrium moisture content of the paddy and explain the consequences can be happened during the period of storage.

(20 Marks)

Question 04

I. Sensible heating at constant humidity ratio is a popular drying method; widely being used in drying of agricultural commodities.

Explain how this method facilitates to enhance water holding capacity of the drying air when air is being blown through the heat exchanger.

II. A cereal food product processer uses his dryer, fabricated with a heat exchanger to dry wet sorghum for safe storage. Properties of the air before blowing through the heat exchanger were, dry bulb temperature 18^0C and relative humidity 70%.

Explain water vapor holding capacity of hot air being blown through the wet product in terms of relative humidity when dry bulb temperature reaches to 30^0C.

(20 Marks)

Question 05

A small scale millet (Kurakkan) flour manufacturer approached to you and asks to lend a helping hand to overcome a major problem encountered by him when his product is kept on sale. The problem was that his product being converted into lumpy form, getting hardened and packet gradually turning into a shrunken form during the period of shelf life. Aftermath of this consequence was returning of substantial amount of Millet powder packets from the market. Random samples were drawn from the return stuff and analyzed in the lab found, off color and bad odor flour. The relevant statistics pertaining to his product were also examined and found followings.

Moisture content of ground product, just before packing was 15.5%.

Type of packing material used to packet millet powder was LDPE, Gauge 200.

Average RH and ambient air temperature in the market were 76-80% and 24^0C-26^0C respectively.

Explain the way that you are going to help him in order to get rid of these problems.

(20 Marks)

Question 06

Assumed that you have been employed as an advisor and trouble shooter to an exporter, who export milled white raw rice to a foreign country. The frequent customer complaint that he received was, white color of raw milled rice is declining gradually and beyond the export quality, particularly when milled raw rice obtained from the last portion of paddy. The exporter usually purchased paddy and stored them in his ware house for milling purpose. The documentary evidence reveled that average moisture content and level of impurities at the point of purchasing were 16.5% and 3.5% respectively. The ware house used to store paddy was kept close most of the time, unless there was unloading activities.

Explain the adverse consequence happening in the storage over discoloration and remedial measures will have to be taken to get rid of this problem occurring in the future.

(20 Marks)