



Uva Wellassa University
Faculty of Animal Science and Export Agriculture
B.Sc. in Tea Technology and Value Addition



End Semester Examination February/March 2011
Year III Semester I

Tea Processing Technology II TEA 321-2

Instructions

Answer only one (01) question.

No. of questions : Two (02)

No. of pages : Three (03)

Total marks allocated : 40%

Time : One (1) hour

Index No:

Part III – Essay

Question 1

Read the details given below and answer the questions.

Factory A has the following machinery.

ECP Drier 6' 2 stage drier with an output of 250 kg dried teas/hr.

47" size Orthodox Rollers - 02

45" size Orthodox Rollers - 03

44" size Orthodox Rollers - 01

3.5" size roll breakers – 03 (capacity – 18 kg/ minute)

Degree of wither maintained at this factory is 42%MT/WL.

Maximum quantity of withered leaf and rolled leaf that could be charged into the available rollers is given below.

Jacket Diameter	Withered Leaf (kg)	Rolled leaf (kg)	
		Early rolling	Later rolling
47" (02 No.)	250 – 275	300	350
45" (03 No.)	200	225	275
44" (01 Nos.)	150	160	200

This Factory would like to follow a 4-roll programme.

Dhool percentages could be,

Dhool	Percentage
1 st	14
2 nd	18
3 rd	23
4 th	12

- Determine the Quantity of Dhool required to be produced per hour considering the drier capacity.
- Find a suitable batch size and charging interval considering the availability of machinery.
- Select suitable size orthodox rollers for initial rolling
- Determine weight of 1st, 2nd, 3rd and 4th dhool
- Select orthodox rollers for 2nd, 3rd and 4th rolling
- Determine time for 1st, 2nd, 3rd and 4th roll breaking
- Draw a rolling programme for the factory
- What is the minimum number of roll breakers needed according to the rolling programme drawn by you?

Question 2

Read the details given below and answer the questions.

Factory B has the following machinery.

FBD 4 with an output of 290 kg dried teas/hr.

47" size Orthodox Roller - 01

45" size Orthodox Roller - 01

8" size rotorvanes - 07

4.5" size roll breakers - 03 (capacity - 25 kg/ minute)

Degree of wither maintained at this factory is 43.5%MT/WL.

Maximum quantity of withered leaf that could be charged into the available rollers is given below.

Jacket Diameter	Withered Leaf (kg)
47"	275 - 290
45"	225

Dhool percentages could be,

Dhool	Percentage
1 st	25
2 nd	30
3 rd	25
4 th	14

- a) Determine the Quantity of Dhool required to be produced per hour considering the drier capacity.
- b) Determine the quantity of withered leaf required to be charged into the rollers every hour.
- c) Find a suitable batch size and charging interval considering the availability of machinery.
- d) Determine weight of 1st, 2nd, 3rd and 4th dhool
- e) Determine time for 1st, 2nd, 3rd and 4th rotorvane rolling
- f) Determine time for 1st, 2nd, 3rd and 4th roll breaking
- g) Draw a rolling programme for the factory
- h) What is the minimum number of rotorvanes and roll breakers needed according to the rolling programme drawn by you?

