

**PRACTICAL MANUAL**

# **Fundamental of Food Technology**

Course No. HPH 216; Credits: 2(1+1)

For B. Sc. (Hons.) Horticulture 6<sup>th</sup> Semester Students

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**2018**

**College of Horticulture & Forestry**  
**Rani Lakshmi Bai Central Agricultural University**  
**Jhansi, Uttar Pradesh**

**Syllabus:**

Methods of measuring food ingredients, effect of cooking on volume and weight, determination of percentage of edible portion. Browning reactions of fruits and vegetables. Microscopic examination of starches, estimation of energy, value proteins and fats of foods. Planning diet for various age groups.

**Name of Student** .....

**Roll No.** .....

**Batch** .....

**Session** .....

**Semester** .....

**Course Name :** .....

**Course No. :** .....

**Credit** .....

**Published: 2018**

**No. of copies: .....**

**Price: Rs.**

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**CERTIFICATE**

This is to certify that Shri./Km. ....ID No.....  
has completed the practical of course.....course  
No. .... as per the syllabus of B.Sc. (Hons.) Agriculture/ Horticulture/ Forestry ..... semester  
in the year.....in the respective lab/field of College.

Date:

Course Teacher

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7	Browning reaction of fruits			
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**Food Additive:** .....

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**Food Safety:** .....

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**Hazard:** .....

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**Ingredient:** .....

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**Sample:**.....

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**Unsafe food:** .....

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Exercise: 3

Objective: Methods of measuring food ingredients.

Food Ingredients: .....

Materials

Required:

Procedure for measuring food ingredients: .....

Results & Discussion

S.No.	Ingredients	Heaping	Leveling	Tapping
1	Green Gram			
2	Rice			
3	Wheat flour			





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**Exercise: 5**

**Objective: To determine the percentage of edible portion of foodstuffs.**

**Materials Required:**.....

**Procedure:**.....

$$\text{Edible portion (\%)} = \frac{\text{Edible portion (g)}}{\text{Actual portion (g)}} \times 100$$

**Observation:**.....

S. No.	Food Stuffs	Weight (g)	
		Actual portion	Edible portion
1	Mango (Raw)		
2	Mango (Ripe)		
3	Lady's finger		
4	Tomato		
5	Drumstick		
6	Carrot		
7	Beans		
8	Snake Gourd		











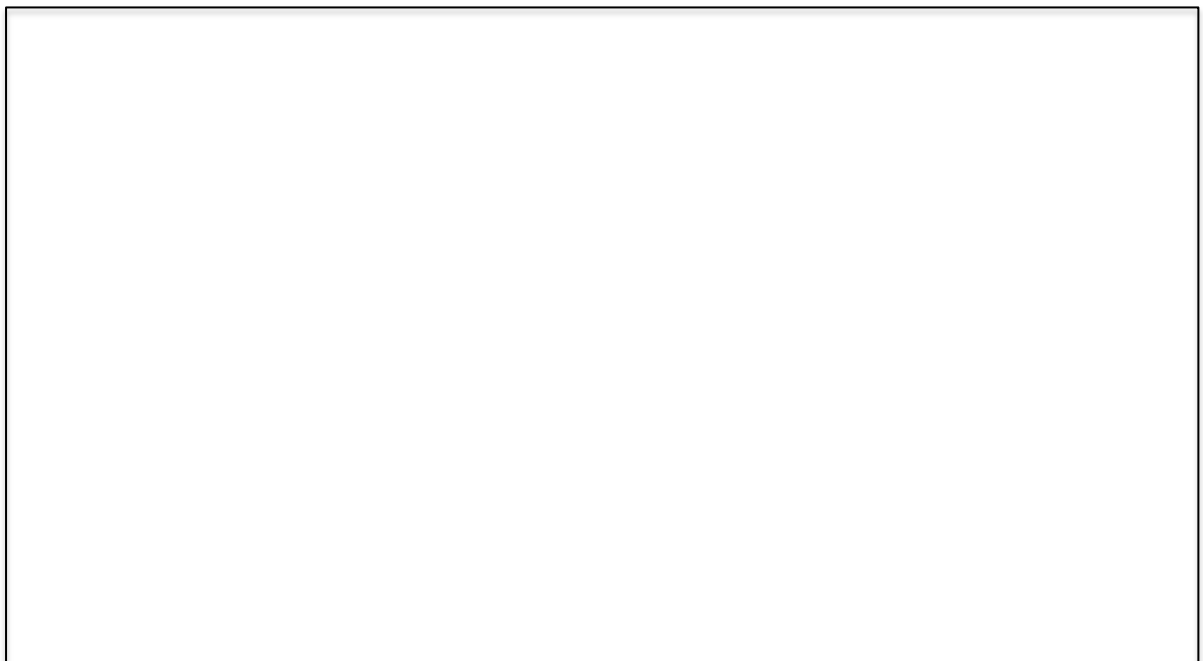
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**Exercise: 8**

**Objective:** To study the microscopic structure of different starches before and after cooking.

**Introduction:**.....  
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**Procedure:**.....  
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**Observation:**.....  
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**Exercise: 9**

**Objective: To find the calorific value of the given food substances.**

**Introduction:**.....

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**Apparatus Required:**.....

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**Procedure:**.....

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Initial temperature of water =.	Final temperature of water =
Heat gained by water and calorimeter =	Water equivalent of the calorimeter =
Wt. of water in the outside vessel =	Rise in temperature =
1 g sample produces =                      kcal	2 g sample produces =                      kcal

\*Wt. of sample - 2 g









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**Exercise 13**

**Objective: Planning a diet for pre-school children.**

**Introduction:**.....  
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**Food Requirement:**.....

**MEAN DAILY FOOD INTAKE**

S. No	Food Intake (g)	RDA		Intake
		1-3 year	4-6 year	
1.	Cereals and its products	175	270	
2.	Pulses and legumes	35	35	
3.	Green leafy vegetables	40	50	
4.	Roots and Tubers	10	20	
5.	Other vegetables	20	30	
6.	Fruits	100	100	
7.	Milk and Milk products	300	250	
8.	Fleshy foods	40	50	
9.	Fats and oils	15	25	
10.	Sugars	30	40	

**MEAN DAILY NUTRIENT INTAKE**

S. No	Nutrients	RDA		Intake
		1-3 year	4-6 year	
1.	Energy (kcal)	1060	1350	
2.	Protein (g)	16.7	20.1	
3.	Fat (g)	27	25	
4.	Iron (mg)	09	13	
5.	Carotene (µg)	3200	3200	
6.	Vitamin C (mg)	40	40	

**Procedure:**.....









**Exercise: 15**

**Objective: Planning a diet for an adolescent boys and girls.**

**Introduction:**.....  
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**Food Requirement:**.....

**MEAN DAILY FOOD INTAKE**

S. No	Food Intake (g)	RDA		Intake
		13-15 year	16-18 year	
1.	Cereals and its products	430	450	
2.	Pulses and legumes	70	70	
3.	Green leafy vegetables	100	100	
4.	Roots and Tubers	75	85	
5.	Other vegetables	75	85	
6.	Fruits	30	30	
7.	Milk and Milk products	250	250	
8.	Fleshy foods	30	45	
9.	Fats and oils	35	30	
10.	Sugars	30	40	

**MEAN DAILY NUTRIENTS INTAKE**

S. No	Nutrients	RDA				Intake			
		13-15 year		16-18 year		13-15 year		16-18 year	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1.	Energy (kcal)	2750	2330	3020	2440				
2.	Protein (g)	54.3	51.9	61.50	55.5				
3.	Fat (g)	45	40	50	45				
4.	Iron (mg)	32	27	28	26				
5.	Carotene (µg)	4800	4800	4800	4800				
6.	Vitamin C (mg)	40	40	40	40				



Exercise: 16

Objective: Planning a diet for adults.

Introduction:.....

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Food Requirement:.....

MEAN DAILY FOOD INTAKE

S. No	Food Intake (g)	RDA		Intake	
		Man	Woman	Man	Woman
1.	Cereals and its products	350	260		
2.	Pulses and legumes	70	60		
3.	Green leafy vegetables	100	100		
4.	Roots and Tubers	75	75		
5.	Other vegetables	75	50		
6.	Fruits	60	60		
7.	Milk and Milk products	600	400		
8.	Fleshy foods	60	60		
9.	Fats and oils	35	30		
10.	Sugars	30	30		

MEAN DAILY NUTRIENTS INTAKE

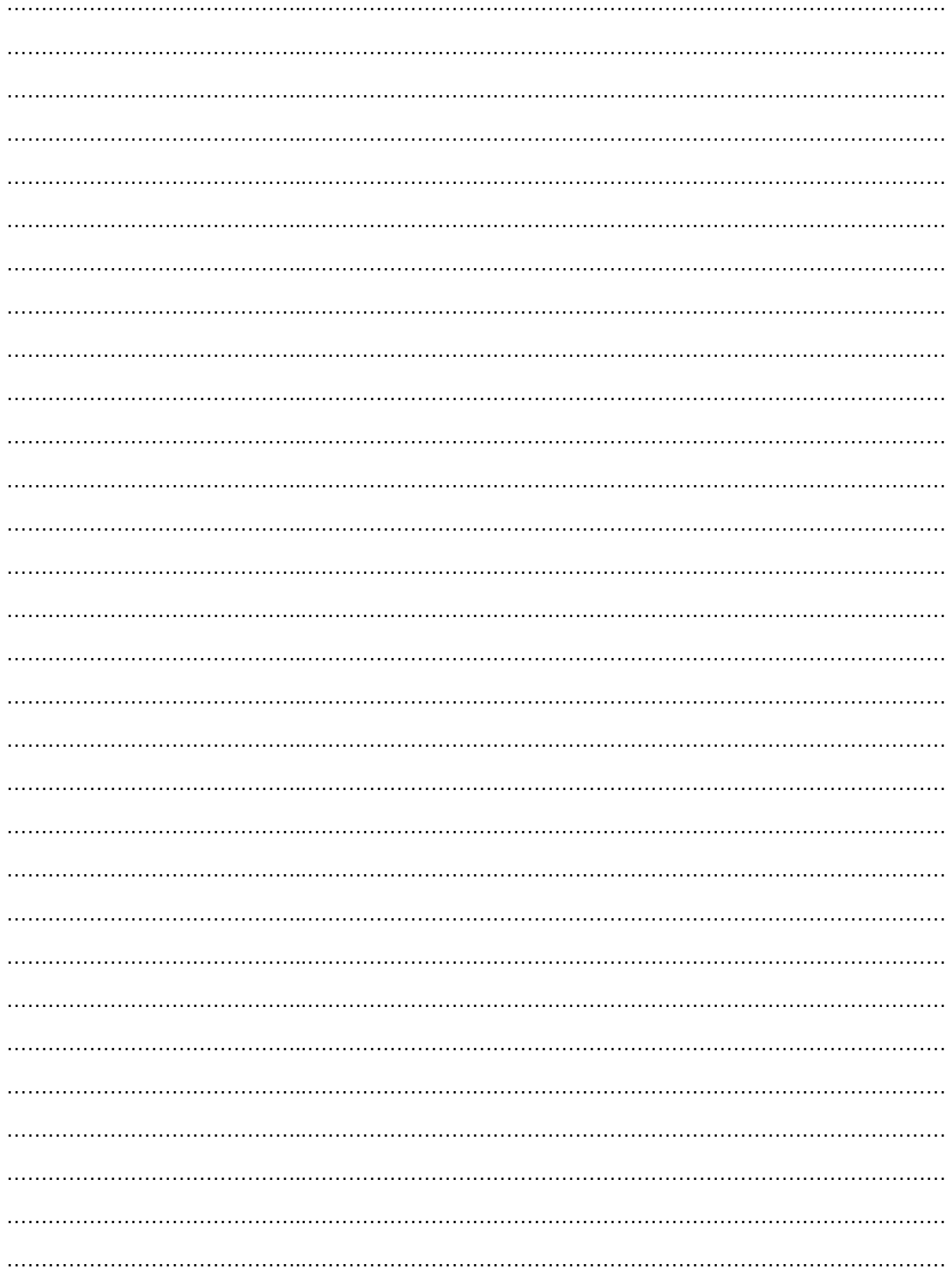
S. No	Nutrients	RDA		Intake	
		Man	Woman	Man	Woman
1.	Energy (kcal)	2320	1900		
2.	Protein (g)	60	55		
3.	Fat (g)	25	20		
4.	Iron (mg)	17	21		
5.	Carotene (µg)	4800	4800		
6.	Vitamin C (mg)	40	40		

Procedure:.....

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Results and Discussion:.....

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**Exercise: 17**

**Objective: Planning a diet for pregnant women and lactating mother.**

**Introduction:**.....

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**Food Requirement:**.....

**MEAN DAILY FOOD INTAKE**

S. No	Food Intake (g)	RDA	Intake
1.	Cereals and its products	260	
2.	Pulses and legumes	80	
3.	Green leafy vegetables	100	
4.	Roots and Tubers	50	
5.	Other vegetables	75	
6.	Fruits	110	
7.	Milk and Milk products	800	
8.	Fleshy foods	85	
9.	Fats and oils	30	
10.	Sugars	30	

**MEAN DAILY NUTRIENTS INTAKE**

S. No	Nutrients	RDA	Intake
1.	Energy (kcal)	2250	
2.	Protein (g)	82.20	
3.	Fat (g)	30	
4.	Iron (mg)	38	
5.	Carotene (µg)	6400	
6.	Vitamin C (mg)	60	

**Procedure:**.....

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**Results and Discussion:**.....

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**Objective: Planning a diet for geriatric people.**

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**MEAN DAILY FOOD INTAKE**

S. No	Food Intake (g)	RDA		Intake	
		Male	Female	Male	Female
1.	Cereals and its products	320	220		
2.	Pulses and legumes	70	55		
3.	Green leafy vegetables	100	125		
4.	Roots and Tubers	75	50		
5.	Other vegetables	75	75		
6.	Fruits	75	50		
7.	Milk and Milk products (ml)	600	600		
8.	Fats and oils	30	30		
9.	Sugars	30	30		

Procedure:.....  
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Results and Discussion:.....  
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