Poultry Products and Byproducts

Poultry Products- Egg and meat

Poultry byproducts- meat offal, blood, feather, giblet (neck, head, liver and gizzard) etc.

Egg products- pudding, cake, nodules, poach, omelet, egg curry, crumbled etc.

Egg wastage - egg shell and hatchery waste.

Egg

Gross compositional ratio of whole egg	Whole Egg 100		
	Albumen 60%	Yolk 30%	Shell 10%

Chemical composition of 100g edible egg						
	Water %	Protein %	Fat %	Carbohydrate %	Ash %	Energy (Cal)
Chicken	73.7	12.9	11.5	0.9	1.0	163
Duck	70.4	13.3	14.5	0.7	1.1	191

Gross & chemical composition of an egg of 57g.					
	Whole Egg	**Albumen**	**Yolk**	**Shell**	**Energy Cal**
Total	57g	33g	18g	6g	90

A man recommended 3000 calories energy, 70g protein, 50g fat and 570g carbohydrate per day. A man gets 90 calories energy, 6.7g protein and 6.2g fat from an egg.

Comparison of chicken meat with beef

Chemical composition of meat				
Meat	**Water %**	**Protein %**	**Fat %**	**Minerals %)**
Chicken meat	76	19	0.6	0.8
Beef	57	17	1.13	0.8

Grading of egg

1. Summary of U.S. Standards for Quality of Individual Shell Eggs: Considering quality factor- Shell, Air Cell, White and Yolk

Quality Factor	AA Quality	A Quality	B Quality	C Quality

2. Grading of egg on the basis of weight:

Size of weight class	Minimum weight for individual egg (g)
Jumbo	68.5
Extra large	61.4
Large	54.3
Medium	47.2
Small	40.1
Pee Wee	<Small

Preservation of egg

1. Raw egg can be preserved by the following method:

a) Home preservation

i)The water glass method
ii) The lime water method
iii) Oil protected eggs
Iv) Thermostabilization

b) Commercial method of preservation

i) Cold storage
ii) Processed egg
• Frozen eggs- yolk or albumen or yolk & albumen together
• Dried eggs- yolk powder, albumen powder or whole egg powder.

Preservation of Surplus Eggs

There are some methods commonly found among the poultry man for preserving surplus eggs. It is very important to run a profitable poultry business. Some methods are discussed below:

A. Home preservation

1. The water glass method: Duration - nearly 6 months. Clean, sound and unwashed eggs should be selected. Sodium silicate or water- glass forms a viscous solution in water. Eggs are dipped in this solution, a coating of silica is formed over the shells and shell pores are sealed. Dose-commercial water-glass in boiled water @ 1 kg in 10 liters and number of eggs- 15 doz.

2. The lime water method: Duration - nearly 6 months. Dose- 1 kilo unslaked lime in 20 liters of water. The upper solution should be separated in another pail to preserve the eggs and sediment can not be used.

3. Oil protected eggs: Eggs are dipped in colorless oil Oiling should be made as soon as possible after the eggs are laid. Egg pores are sealed by oil and prevents evaporation water and gas, thus maintains good internal quality.

4. Thermostabilisation: This improves keeping quality by heat. Eggs may be thermostabilised by immersing the shell eggs for 15 minutes in water at 54.4^0 C (130^0 F) or at 60^0 C (140^0 F) for 3-5 minutes.

B Commercial method of preservation

1. Cold storage- Duration: 5-8 months. The temperature of egg -storage room should be at $+0.5^0$ C to -0.5^0 C (31^0 F to33^0 F) and RH is 75 to 85 %.

2. Frozen eggs- Duration: 12 months or longer. Preservation of internal contents of eggs as frozen condition. Surplus egg producing countries practice this. The egg yolk and albumen may be frozen separately with addition of 5 % glycerin at a low temperature of 10^0 F to 30^0 F below zero.

3. Dried eggs: Egg drying is now largely practiced in place of freezing. The egg contents are dried at a temperature of 160^0 F and stored below 50^0 F to convert albumen powder, yolk powder or the whole egg powder.