**Development of poultry processing and poultry technology**

1. Poultry production was initiated in INDIA at which five year plan
2. First five year plan
3. Second five year plan
4. **Third five year plan**
5. Fourth five year plan
6. What does the term "poultry" refer to in the context of animal husbandry?

(a) Only chicken

**(b) Various avian species domesticated for economic purposes**

(c) Wild birds kept as pets

(d) Exotic birds raised for ornamental purposes

1. Which country is mentioned as the largest second economy among developing nations in the context of the poultry industry, contributing 2.3 million tonnes of meat annually?

a) China

**b) India**

c) Brazil

d) Nigeria

1. What is the expected growth rate in broiler production, according to the provided content?

a) 5 per cent

b) 10 per cent

**c) 15 per cent**

d) 20 per cent

1. In what year did broiler production reach more than 1500 million, according to the information provided?

a) 1971

b) 2007

**c) 2010**

d) 1996

1. What was the per capita availability per year of poultry meat in 1996?

a) 500 grams

**b) 917 grams**

c) 1.5 kg

d) 2.0 kg

1. Which region in India dominates in broiler production, accounting for nearly 60-70 per cent of the total output?

a) Northern states

b) Western states

c) Eastern states

**d) Southern states**

1. Which states are mentioned as contributing nearly 70 per cent of the country's egg production?

a) Uttar Pradesh and Rajasthan

b) Karnataka and Kerala

**c) Andhra Pradesh, Tamil Nadu, and Maharashtra**

d) Gujarat and Madhya Pradesh

1. What are the different forms in which poultry is marketed, as mentioned in the content?

a) Only live form

b) Only frozen form

**c) Live, freshly dressed, and further processed products**

d) Chilled and cut-up parts

1. What percentage of poultry meat is mentioned to be sold as further processed poultry products?

a) 2%

**b) 5%**

c) 10%

d) 15%

1. What is the impact of holding live birds for 24 hours on shrinkage in live weight, as mentioned in the content?

a) 1.0%

b) 2.5%

**c) 4.4%**

d) 6.0%

1. How is the mode of dressing and packing in automatic poultry processing plants different from small poultry retailers?

a) It is the same

b) Small retailers use advanced technology

**c) Small retailers dress birds before customer selection**

d) There is no significant difference

1. Why is hygiene difficult to follow with retail processors, as mentioned in the content?

a) Lack of awareness

b) Consumer preference for unprocessed birds

**c) Bargain deals and customer selection**

d) Inefficient transportation

1. How does the price of poultry vary with seasons, according to the information provided?

a) Summer higher, winter lower

b) Summer and winter same

c) Summer and winter both higher

**d) Summer lower, winter higher**

1. Who are the various entities involved in poultry retailing, as mentioned in the content?

a) Only independent retailers

b) Only chain stores

**c) Independent retailers, chain stores, road side stands, itinerant peddlers, and cooperative agencies**

d) Only cooperative agencies

1. What is the usual price differential between the producer and the retail rate of poultry?

a) Rs. 2-4 per kg

b) Rs. 4-6 per kg

**c) Rs. 6-10 per kg**

d) Rs. 10-15 per kg

1. How are producer prices decided, as mentioned in the content?

a) Based on government regulations

**b) Market forces without regard to cost of production**

c) Cost of production only

d) Negotiation with retailers

1. What strategy is being considered for domestic market and exports in the poultry industry?

a) Increased reliance on independent retailers

b) Chain retail stores expansion

**c) Integrated broiler production**

d) Roadside stands promotion

1. about 90 per cent of India's total poultry exports, according to the information provided?

a) Broiler meat

b) Live poultry

**c) Shell eggs and other egg-based products**

d) Genetic stock and feed

1. What was the export earnings through table eggs in the year 2005-06, as mentioned in the content?

a) Rs 196 million

b) Rs 351 million

**c) Rs 408 million**

d) Rs 1126 million

1. What led to a downturn in exports of egg powder between 1997-98 and 2001-02?

a) Increased demand in the EU

**b) Ban imposed by the EU on egg powder imports from India**

c) Certification issues in India

d) Decline in domestic production

1. Which countries are mentioned as the main export markets for India's egg products?

a) USA, Canada, and Mexico

**b) Kuwait, Oman, Saudi Arabia, the UAE, and Yemen**

c) Germany, Austria, Japan, the Netherlands, and the Republic of Korea

d) China, Brazil, and Russia

1. Which region receives India's live poultry exports?

a) Europe

b) South America

**c) SAARC countries**

d) Southeast Asia

1. Why is rye considered a poor choice for poultry feed?

**a) Birds do not like the taste**

b) It contains a poisonous principle

c) It causes crop impaction in chicks

d) It reduces the density of high-energy feed

1. Why should the white variety of sorghums be preferred over the dark variety for poultry feed?

a) White sorghums have a higher fiber content

b) Dark sorghums contain a poisonous principle called ricin

**c) White sorghums have lesser tannin than dark sorghums**

d) Dark sorghums have a bitter taste

1. What is the poisonous principle in castor seed cake, and how can it be destroyed?

**a) Ricin, destroyed by heat**

b) Gossypol, destroyed by boiling

c) Aflatoxin, destroyed by roasting

d) Prussic acid, destroyed by boiling

1. Why is groundnut cake considered potentially harmful, especially to ducks, turkeys, and chickens?

a) It contains high levels of tannin

b) It causes bitter taste in eggs

**c) It is prone to Aspergillus infection, producing aflatoxin**

d) It leads to poor growth in chicks

1. What is the toxic factor found in linseed meal, and how can it be detoxified?

a) Ricin, destroyed by heat

b) Aflatoxin, destroyed by roasting

c) Prussic acid, destroyed by boiling

**d) Cyanogenic glucoside, destroyed by boiling**

1. Which breed is noted for superior meat yields among pure breeds in broiler production, according to the information provided?

a) Rock

b) New Hampshire

**c) Cornish**

d) Cross-breeds

1. What is the general relationship between body weight and meat yield in poultry?

a) Inverse correlation

b) No correlation

**c) Positive correlation**

d) Negative correlation

1. Which breed is mentioned for its breast width and yield of breast meat?

a) Rock

b) New Hampshire

**c) Cornish**

d) Cross-breeds

1. How does the use of feed grade fat in diets typically affect meat yields?

a) Increases meat yields

**b) No effect on meat yields**

c) Reduces meat yields

d) Depends on the breed

1. What is the effect of using hormones or hormone-like substances on poultry meat yields?

a) Decreases eviscerated yields

b) No effect on yields

**c) Increases eviscerated yields**

d) Reduces growth but increases meat yields

1. Which poultry species are mentioned as of economical importance?

**a) Chicken, duck, turkey**

b) Quail, guinea fowl, goose

c) Pigeon, quail, goose

d) Duck, guinea fowl, pigeon

1. What is the primary determinant of species-specific taste and flavor in poultry meat?

a) Age

b) Sex

**c) Lipid content**

d) Organic constituents

1. What is the primary criterion for classifying chickens as broilers or fryers?

**a) Age and sex**

b) Weight and color

c) Leg length

d) Wing size

1. What is the distinguishing factor between broiler and roaster chickens?

**a) Age**

b) Breast width

c) Leg length

d) Wing size

1. What is the primary difference between duckling classes, such as broiler ducklings and roaster ducklings?

a) Feather color

b) Beak size

**c) Age**

d) Wing span

1. What class of turkey is known for its tender meat and pliable breast bone cartilage?

**a) Fryer-roaster turkey**

b) Young tom

c) Young hen

d) Mature turkey

1. What distinguishes a mature goose from a young goose?

a) Feather color

b) Beak size

**c) Breast bone cartilage**

d) Leg length

1. At what age are mature guinea fowls typically slaughtered?

a) 5-7 weeks

b) 16-20 weeks

**c) Over 15 months**

d) Before sexual maturity

1. What is the primary cooking method recommended for Broiler (Fryer) chicken?

a) Stew

b) Broil

**c) Barbecue**

d) Roast (Bake)

1. At what age is a Roaster usually slaughtered?

a) Less than 5 months

**b) Over 10 weeks**

c) Less than 10 months

d) Usually under 8 weeks

1. What is the distinguishing feature of a Capon?

**a) Castrated male**

b) Less than 5 months old

c) Female

d) Tender meat

1. For what purpose is a Stag usually used in poultry processing?

a) Barbecue

b) Roast (Bake)

**c) Stewing or MDPM(Mechanically Deboned Poultry Meat)**

d) Fry or broiler barbecue

1. What characterizes a Hen, Fowl, Stewing Chicken, or Spent Layer in terms of meat tenderness?

a) Tender meat

b) Tough, darkened meat

**c) Less tender meat than a roaster**

d) Soft pliable meat

1. What is the recommended cooking method for a Broiler Mother?

a) Broil

b) Roast (Bake)

c) Stew

**d) Bake**

1. At what age is a Cock or Rooster usually slaughtered?

a) Less than 5 months

**b) months Over 10**

c) Less than 10 months

d) Over 14 months

1. Which area of a poultry processing plant involves operations such as killing, bleeding, scalding, picking, pinning, and washing?

a) Packaging area

b) Refrigerated rooms

**c) Dressing area**

d) Eviscerating room

1. What is the primary purpose of the eviscerating room in a poultry processing plant?

a) Killing and bleeding

**b) Separating edible and inedible viscera**

c) Scalding and picking

d) Packaging

1. Which room is responsible for chilling, freezing, and storing poultry until ready for delivery in a poultry processing plant?

a) Packaging area

b) Dressing area

**c) Refrigerated rooms**

d) Auxiliary rooms

1. What is the recommended material for constructing floors in processing areas of a poultry processing plant?

a) Wood

b) Tile

**c) Reinforced concrete**

d) Carpet

1. Why is an abrasive substance incorporated into the wearing surface of floors in wet work areas?

a) To increase slipperiness

b) To reduce water runoff

**c) To prevent water collection in puddles**

d) To encourage accidental falls

1. What is the primary purpose of using smooth and moisture-resistant materials for walls, posts, and doors in a poultry processing plant?

a) To increase slipperiness

**b) To facilitate easy cleaning**

c) To encourage water collection

d) To reduce ventilation

1. What is the recommended lighting system in a poultry processing plant, and why is it preferred?

a) Incandescent lights; for high heat output

**b) Fluorescent lights; for energy efficiency and minimal heat emission**

c) LED lights; for color accuracy

d) Candle lights; for traditional ambiance

1. What should equipment design prioritize in a poultry processing plant?

a) Complicated adjustments

b) Difficult cleaning procedures

**c) Easy adjustments, cleaning, and maintenance**

d) Unsafe operation

1. What is the primary concern in water supply for a poultry processing plant?

a) Color

b) Taste

**c) Potability**

d) Odor

1. Why is water hardness an important factor in poultry processing?

a) It enhances the wetting action of water in scalding

**b) It reduces foaming and cleansing action of soaps**

c) It has no effect on the processing

d) It prevents the formation of precipitates or curds

1. What is the recommended maximum number of coliform organisms per 100 ml of water for water used in direct contact with food stuffs and human consumption?

a) 10

b) 100

**c) 1**

d) 1000

1. How does the pH of water influence the processing in a poultry plant?

a) It has no effect

**b) It encourages corrosion of pipes and equipment**

c) It enhances the cleansing action of detergents

d) It prevents contamination through cross connections

1. What is the primary concern with poultry plant sewage, and why are processing plants not always welcome in municipalities?

a) Odor

b) Blood content

**c) Manure and blood content**

d) Suspended solids

1. Which two common measures are used to assess the concentration of sewage in a poultry processing plant?

a) Water hardness and pH

**b) Biological oxygen demand (BOD) and solids content**

c) Alkalinity and turbidity

d) Total nitrogen and COD

1. What is the recommended method for poultry processing plants to discharge wastes?

a) Direct disposal into water bodies

b) Incineration on-site

**c) Municipal treatment facilities**

d) Composting on-site

1. Why is the poultry industry considered to have one of the highest accident rates among food processing industries?

a) Lack of safety regulations

**b) High-speed machinery**

c) Carelessness of workers

d) Inherent safety risks in processing

1. What is a key safety consideration in designing a poultry processing plant according to the provided information?

a) Proximity to a grocery store

**b) Availability of a nearby fire department and water supply**

c) Remote location for auxiliary buildings

d) Use of non-fire-resistant materials in construction

1. Why is standby power recommended for refrigeration systems in a poultry processing plant?

a) To reduce energy consumption

b) To minimize noise pollution

**c) To prevent spoilage of products during power outages**

d) To enhance worker safety

1. Why are broilers usually caught at night for loading?

a) They are more active at night

b) It is more convenient for workers

**c) They struggle less and settle down faster at night**

d) They are easier to catch during the day

1. What is the primary goal in arranging loading schedules for broilers?

a) Maximizing worker convenience

**b) Reducing bird stress and damage during transportation**

c) Minimizing the time between catching and unloading

d) Maximizing financial losses to the poultry industry

1. How are broilers typically caught before loading onto trucks?

a) By wings

b) By beaks

**c) By shanks**

d) By necks:

1. Which poultry harvesting procedure involves using a low-profile forklift truck to carry an empty module into the house?

a) Loose crate system

b) Fixed crates system

**c) Modules system**

d) Novel mechanical methods

1. What is the main advantage of the vacuum system in harvesting broilers?

**a) It requires fewer workers**

b) It is the fastest method

c) It is the most cost-effective

d) It minimizes stress on the birds

1. Why is it recommended to reduce the number of birds placed in each crate or module in warm weather during transportation?

a) To increase worker efficiency

b) To minimize vehicle weight

**c) To reduce stress on the birds**

d) To maximize cooling effects

1. What is the purpose of the arrival area (reception area) in a poultry slaughterhouse?

a) It is where the birds are weighed

b) It is where ante-mortem inspection takes place

**c) It is where the birds are unloaded from transport vehicles**

d) It is where the birds are eviscerated

1. What is the purpose of ante-mortem inspection in poultry processing?

a) To assess the taste of the meat

b) To determine the age of the birds

**c) To identify potential diseases or conditions that may render the meat unwholesome**

d) To enhance the visual appeal of the poultry products

1. Why is AM (ante-mortem) inspection considered essential?

a) It is a legal requirement

**b) It represents at least 50% of meat inspection**

c) It is only relevant for emergency slaughter stock

d) It mainly focuses on post-mortem examination

1. What is the primary purpose of the arrival area in a poultry slaughterhouse?

a) To provide shelter for workers

b) To conduct post-mortem inspections

**c) To unload birds from transport vehicles**

d) To serve as a waiting area for workers

1. Why are broilers caught at night for loading?

a) They are more active at night

b) It is more convenient for workers

**c) They struggle less and settle down faster at night**

d) They are easier to catch during the day

1. What is the primary goal in arranging loading schedules for broilers?

a) Maximizing worker convenience

**b) Reducing bird stress and damage during transportation**

c) Minimizing the time between catching and unloading

d) Maximizing financial losses to the poultry industry

1. What is the primary purpose of stunning birds before slaughter?

a) To enhance the visual appeal of the poultry products

**b) To minimize distress during bleeding out**

c) To prevent convulsions during bleeding out

d) To make the feathers easier to remove

1. Why is the water bath stunner preferred in most poultry plants?

**a) It accommodates all sizes of birds effectively**

b) It is the most cost-effective method

c) It ensures deep immersion of large birds

d) It allows for manual stunning with ease

1. Which stunning method is considered the most widely used in modern processing operations?

a) Electrical stunning

b) Carbon dioxide immobilization

c) Piercing the cerebellum

**d) Modified Kosher slaughter**

1. What is the primary advantage of soft scalding in poultry processing?

a) Easy removal of feathers

**b) Retention of the cuticle**

c) Uniform skin color

d) Puffy appearance of the carcass

1. What is the recommended time between neck cutting and scalding for chickens?

**a) Not less than 90 seconds**

b) Not less than 2 minutes

c) 10-15 seconds

d) 3 minutes

1. What are some conditions that may lead to the condemnation of live birds during ante-mortem inspection?

a) Lack of feather cleanliness

b) Slight respiratory distress

**c) Lack of flesh and thrift**

d) Enlarged bones

1. In poultry processing, what does the term "slack scalding" refer to?

a) Immersion in hot water at 56-60 °C for 30-75 seconds

**b) Immersion in hot water at 50-51.5 °C for 2.5 minutes**

c) Immersion in hot water at 71-82 °C for 30-60 seconds

d) Immersion in hot water at 53-55 °C for 1-2 minutes

1. What is the primary purpose of scalding in the poultry processing sequence?

**a) To remove feathers easily**

b) To enhance the visual appeal of the carcass

c) To minimize distress during bleeding out

d) To improve the tenderness of the meat

1. Why is the soft scalding method required for fresh, chill market poultry products?

a) It enhances the visual appeal of the carcass

b) It allows for easy removal of feathers

**c) It prevents severe discoloration and drying of the skin**

d) It improves the tenderness of the meat

1. What is the purpose of the V-shaped stunner in poultry processing?

**a) To apply an electrical current to the birds**

b) To pierce the cerebellum of the brain

c) To facilitate easy removal of feathers

d) To ensure proper bleeding during slaughter

1. What is the purpose of scalding in poultry processing?

**a) To remove feathers**

b) To cool the carcass

c) To singe fine hairs

d) To wash the carcass

1. What is the temperature range for the first scalding in poultry processing?

a) 50-55 °C

**b) 60-65 °C**

c) 70-75 °C

d) 80-85 °C

1. How are feathers removed in the defeathering process?

a) Hand-plucking

b) Mechanical plucking machines

c) Wax dipping

**d) Both a and b**

1. What is the purpose of an arc flame in poultry processing?

a) To cook the meat

**b) To singe remaining fine hairs**

c) To remove internal organs

d) To cool the carcass

1. What method is used by duck processors for feather removal?

a) Mechanical plucking

b) Hand-plucking

**c) Wax stripping**

d) Arc flame treatment

1. What is the main purpose of post-mortem inspection in poultry processing?

a) To cook the meat

**b) To detect and eliminate abnormalities**

c) To remove feathers

d) To wash the carcass

1. What are giblets in poultry processing?

a) Mechanical plucking devices

**b) Internal organs like liver, gizzard, and heart**

c) Wax stripping equipment

d) Post-mortem inspection tools

1. What is the primary purpose of washing in poultry processing?

a) To remove feathers

b) To cool the carcass

**c) To loosen and remove soiled areas**

d) To singe remaining fine hairs

1. How is evisceration typically carried out in poultry processing?

a) Mechanical vent cutter

b) Hand-picking

c) Wax dipping

**d) Both a and b**

1. What is the purpose of the "New York dressed" method in poultry processing?

**a) To sell poultry with guts in**

b) To remove feathers

c) To singe remaining fine hairs

d) To cool the carcass

1. When is washing most commonly done in the poultry processing sequence?

a) After chilling

**b) Before chilling**

c) After scalding

d) After evisceration

1. What is the purpose of chilling in poultry processing?

a) To remove feathers

**b) To cool the carcass**

c) To singe remaining fine hairs

d) To wash the carcass

1. How is packaging done in poultry processing for individual carcasses?

**a) Shrink film packaging**

b) Vacuum packaging

c) Bulk ice packing

d) Both a and b

1. What is the recommended maximum storage time for poultry carcasses at 4 °C?

a) 14 days

b) 21 days

**c) 5 days**

d) 7 days

1. In duck processing, what temperature is used for the second scalding?

a) 60 °C

**b) 71 °C**

c) 90 °C

d) 10-12 °C

1. What is the average protein content in cooked poultry meat?

a) 10-15%

**b) 25-35%**

c) 40-50%

d) 5-10%

1. Which type of fatty acids are more prevalent in poultry meats compared to red meats?

a) Saturated fatty acids

b) Monounsaturated fatty acids

**c) Polyunsaturated fatty acids**

d) Trans fatty acids

1. What is the primary factor influencing the tenderness of poultry meat?

a) Exercise before slaughter

b) Scalding temperature

c) Type of feed

**d) Age of birds**

1. Why is poultry meat considered suitable for weight control diets?

a) High caloric content

b) Low protein content

**c) Low fat content**

d) High moisture content

1. What vitamin is found in moderate quantities in poultry meat?

a) Vitamin A

b) Vitamin C

**c) Niacin**

d) Riboflavin

1. What is the primary role of iodine in determining the quality of fats in poultry meat?

a) Increases cholesterol content

b) Induces flavor

**c) Indicates degree of saturation or unsaturation**

d) Enhances tenderness

1. How does the flavor of poultry meat change when immersed in cold water for prolonged periods?

a) Becomes more intense

b) No change in flavor

**c) Loses flavor**

d) Develops a buttery aroma

1. What mineral is NOT mentioned as present in poultry meat?

a) Sodium

b) Potassium

c) Calciu

**d) Chlorine**

1. Which poultry part is mentioned to contain the highest fat content?

a) Breast meat

b) Thigh meat

c) Wings

**d) Skin**

1. What is the significance of glycogen concentration in relation to tenderness in poultry meat?

a) High glycogen leads to toughness

**b) Low glycogen leads to tenderness**

c) No correlation with tenderness

d) Glycogen has no impact

1. What is the calorie content per 100g of medium fat turkeys

a) 138 calories

b) 200 calories

**c) 268 calories**

d) 302 calories

1. Why is poultry meat considered suitable for weight control diets?

a) High fat content

b) Low protein content

**c) Low calorie content**

d) High cholesterol content

1. What is the primary factor influencing tenderness in poultry meat?

**a) Age**

b) Fat content

c) Cooking temperature

d) Freezing duration

1. Which vitamin is found in significant amounts in uncooked chicken livers?

**a) Vitamin A**

b) Vitamin C

c) Vitamin D

d) Vitamin K

1. In which part of poultry is most fat found in comparison to red meats?

a) Muscles

**b) Skin**

c) Viscera

d) Bones

1. What is a primary source of microbial contaminants in poultry meat?

A) Air

B) Water

**C) Intestinal tracts of animals**

D) Skin of live birds

1. What can serve as an intermediate source of contamination during the handling of meat in a processing plant?

A) Knives

B) Cloths

C) Air

**D) All of the above**

1. Which bacterial type is commonly found on the skin of poultry?

A) E. coli

B) Salmonella

**C) Staphylococci**

D) Listeria

1. What is a common spoilage organism found on poultry skin, feet, and feathers?

**A) Pseudomonas**

B) Candida

C) Salmonella

D) Lactobacillus

1. What is the primary cause of spoilage in poultry meat during low-temperature storage?

A) Yeasts

**B) Pseudomonas**

C) Acinetobacter

D) Flavobacterium

1. What does the term "visceral taint" refer to in poultry spoilage?

A) Sliminess

B) Off-odors

C) Sharpness

**D) Odor from the visceral cavity**

1. Which method is effective in delaying the spoilage of poultry during storage?

**A) Vacuum packaging**

B) High humidity storage

C) Steam scalding

D) Dry plucking

1. What is the basic purpose of chilling in poultry meat preservation?

**A) Eliminate body heat**

B) Increase microbial growth

C) Enhance flavor

D) Accelerate spoilage

1. Which coolant is most commonly used in commercial poultry chilling practice?

A) Liquid nitrogen

B) Solid carbon dioxide

**C) Water and ice mixture**

D) Air

1. What is the maximum time allowed by USDA regulations for reaching the internal temperature of a poultry carcass to at least 40 °F?

A) 2 hours

B) 4 hours

**C) 6 hours**

D) 8 hours

1. What is the purpose of air blowing over carcasses in the air chilling process?

A) Dehydration

B) Enhance microbial growth

C) Increase weight loss

**D) Reduce surface moisture**

1. What does evapourative chilling involve?

A) Immersion in cold water

B) Exposure to air at 0 °C

**C) Spray chilling**

D) Vacuum cooling

1. What is the specialized use of liquefied gases such as nitrogen and solid carbon dioxide in poultry chilling called?

A) Immersion chilling

B) Evapourative chilling

**C) Cryogenic chilling**

D) Air chilling

1. How does freezing affect the shelf life of poultry meat?

A) Decreases shelf life

B) Has no effect

**C) Increases shelf life**

D) Causes rancidity

1. What is the ideal temperature for freezing poultry meat?

A) -5 °C

B) -10 °C

**C) -18 °C**

D) 0 °C

1. What is the shelf life of fresh poultry at 5 °C?

A) Up to 3 days

**B) Up to 7 days**

C) Up to 14 days

D) Up to 30 days

1. How does air chilling differ from immersion chilling?

A) Uses water as a coolant

B) Requires scalding at higher temperatures

**C) Involves exposure to cold air**

D) Causes weight gain due to water uptake

1. What bacterial type is commonly found on broiler carcasses during air chilling?

A) E. coli

B) Listeria

**C) Pseudomonas**

D) Salmonella

1. How does spray chilling differ from immersion chilling in terms of water consumption?

A) Higher water consumption

**B) Lower water consumption**

C) Equal water consumption

D) No water consumption

1. What is the main disadvantage of air chilling in terms of frozen poultry?

**A) Dehydration**

B) Discoloration

C) Weight loss

D) Increased microbial growth

1. What temperature range is considered for still air freezing in most commercial practices?

a. -2.5 to -6 °C

**b. -10 to -30 °C**

c. -30 to -60 °C

d. -60 to -80 °C

1. Which method of freezing uses condensed gases such as liquid nitrogen, dry ice, or liquid nitric oxide?

a. Still air freezing

b. Plate freezing

**c. Cryogenic freezing**

d. Air blast freezing

1. What is the main characteristic of bone darkening in frozen poultry?

a. Affects flavor and texture

**b. Causes a bloody appearance**

c. Results from slow freezing

d. Influenced by eutectic formation

1. Freezer burn is mainly associated with which type of freezing?

a. Quick freezing

**b. Slow freezing**

c. Cryogenic freezing

d. Still air freezing

1. What is the purpose of smoking in meat preservation?

a. Accelerates freezing

**b. Adds flavor and color**

c. Reduces eutectic formation

d. Increases thermal conductivity

1. Which compound is responsible for the pink color in smoked meat products?

a. Nitrogen

b. Carbon dioxide

**c. Nitrites**

d. Phenols

1. What is the minimum machine vacuum required during mechanical vacuum closure in canning?

a. 5 inches

b. 10 inches

**c. 12 inches**

d. 15 inches

1. What is the maximum storage life of smoked meat products at -18°C?

a. 1-2 weeks

**b. 2-4 months**

c. 6-8 months

d. 1 year

1. Which method is most popular for value addition of poultry in tropical countries like India?

**a. Canning**

b. Smoking

c. Freezing

d. Cryogenic freezing

1. What is the recommended irradiation dose level approved as safe for human in poultry preservation?

a. 2.5 kGy

b. 5 kGy

**c. 10 kGy**

d. 15 kGy

1. What is the proximate end of the oviduct where the matured ovum is engulfed after ovulation?

A) Magnum

**B) Infundibulum**

C) Isthmus

D) Uterus

1. What is the longest segment of the oviduct where albumen is deposited around the yolk?

**A) Magnum**

B) Infundibulum

C) Isthmus

D) Uterus

1. What process is responsible for the stretching of the shell membrane and acts as a stimulus for rapid shell calcification?

**A) Plumping**

B) Ovulation

C) Rotation

D) Distension

1. What is the primary pigment responsible for the golden yellow to orange color of egg yolk?

A) Capsanthin

**B) Zeaxanthin**

C) Canthaxanthin

D) Lutein

1. What is the main reason for the production of excessive hydrogen ions during shell calcification?

A) Uptake of water

B) Plumping process

C) Transport of calcium ions

**D) Acidosis**

1. In which part of the reproductive system is the chalaziferous layer of albumen added around the yolk?

A) Magnum

**B) Infundibulum**

C) Isthmus

D) Uterus

1. What initiates the shell calcification in the uterus or shell gland?

A) Albumen secretion

**B) Mammary cores secretion**

C) Plumping process

D) Uptake of water

1. What is the significance of the chalazae in the egg?

A) They contribute to yolk pigmentation

B) They are involved in the formation of the shell

**C) They prevent the yolk from rotating**

D) They facilitate the movement of the egg in the oviduct

1. Which hormone is responsible for ovulation in hens?

A) Estrogen

B) Progesterone

**C) Luteinizing hormone (LH)**

D) Follicle-stimulating hormone (FSH)

1. What is the role of the isthmus in egg formation?

A) Deposition of albumen

**B) Secretion of shell membranes**

C) Initiation of shell calcification

D) Uptake of water during plumping

1. What is the primary function of the chalaziferous layer of albumen?

A) Yolk pigmentation

B) Shell calcification

**C) Preventing yolk rotation**

D) Facilitating egg movement in the ovid

1. What is the primary factor influencing the efficiency of synthetic oxycarotenoids in yolk pigmentation?

A) Feed moisture

**B) Dietary intake**

C) Antibiotics

D) Housing systems

1. How does the deposition of canthaxanthin (CHX) compare to citranaxanthin (CTX) in egg yolk?

 A) CTX is 3 to 5 times more efficient

 B) CTX is equally efficient

 **C) CHX is 3 to 5 times more efficient**

 D) CHX and CTX have the same efficiency

1. What is the primary pigment responsible for a golden orange yolk?

**A) Canthaxanthin (CHX)**

B) Citranaxanthin (CTX)

C) β-Apo-8'-carotenal (BAC)

D) Ethyl β-Apo-8'-carotenoic acid (BACE)

1. Which method involves the visual comparison of yolk color with reference standards like Roche color fan?

A) Reflectance spectroscopy

B) AOAC method

**C) Optical (Subjective)**

D) Chemical

1. What does a Roche yolk color fan measure?

A) Optical density

B) Reflectance spectroscopy

**C) Yolk color on a scale**

D) Chemical composition

1. What is the relationship between the daily intake of natural oxycarotenoids and their deposition in yolk?

A) Linear

B) Inverse

**C) Exponential**

D) Constant

1. Why do caged hens tend to lay eggs with higher yolk color compared to litter-raised hens?

A) Increased exposure to sunlight

B) Higher antioxidant intake

**C) Differences in feed intake**

D) Genetic factors

1. What is the primary reason for the discolouration of yolk, resulting in olive or apricot-colored yolk?

A) Presence of antibiotics

**B) Iron-conalbumen complexes**

C) Continuous use of coccidiostats

D) Excess vitamin A

1. What is the primary function of the chalaziferous layer of albumen?

A) Yolk pigmentation

B) Shell calcification

**C) Preventing yolk rotation**

D) Facilitating egg movement in the oviduct

1. At what daily intake of natural oxycarotenoids per hen does about 40% get deposited in the yolk?

A) 0.1 to 0.3 mg

**B) 0.3 to 1 mg**

C) 1 to 5 mg

D) 5 mg or more

1. Which synthetic oxycarotenoid is 3 to 5 times less efficient than canthaxanthin in yolk deposition?

**A) Citranaxanthin (CTX)**

B) β-Apo-8'-carotenal (BAC)

C) Canthaxanthin (CHX)

D) Ethyl β-Apo-8'-carotenoic acid (BACE)

1. What is the primary method of yolk color measurement using Roche color fan?

**A) Optical (Subjective)**

B) Photoelectric (Colorimetric)

C) Chemical: AOAC method

D) Spectrophotometric

1. What factor has the greatest role in yolk color, according to the provided information?

A) Genetics

B) Housing systems

**C) Feed including lipids and antioxidants**

D) Antibiotics/drugs

1. What is the primary component of the eggshell?

**A) Calcium carbonate**

B) Magnesium carbonate

C) Calcium phosphate

D) Protein

1. What is the approximate composition of eggshell in terms of calcium?

A) 0.02%

B) 0.1%

**C) 1%**

D) 10%

1. Which layer of the egg comprises approximately 60% of the total egg weight?

A) Yolk

B) Inner thin white

**C) Outer thick white**

D) Inner shell membrane

1. What is the primary nutrient provided by eggs during rapid growth, making them an excellent food for young children and teenagers?

A) Carbohydrates

**B) Proteins**

C) Fats

D) Vitamins

1. How does the environmental temperature affect the size of eggs?

A) Increases egg size

B) No effect on egg size

**C) Decreases egg size**

D) Environmental temperature has no impact

1. What fatty acid is increased in egg yolks when hens are fed with corn oil?

A) Oleic acid

B) Stearic acid

**C) Linoleic acid**

D) Palmitic acid

1. What happens to the thiamine content in eggs coated with plastic or light mineral oil during storage?

A) Increases

B) Decreases

**C) Remains the same**

D) Becomes toxic

1. Which cooking method results in about 20% less riboflavin in eggs compared to hard-cooked or raw eggs?

**A) Scrambled**

B) Poached

C) Fried

D) Boiled

1. What misconception is discussed regarding eggshell color and nutritive value?

A) Dark shell eggs are less nutritious

B) White shell eggs are less nutritious

**C) Shell color indicates freshness**

D) Shell color affects yolk color

1. Which statement about fertile eggs is true?

A) Fertile eggs are less nutritious

B) Fertile eggs have more vitamins

C) Fertile eggs have fewer minerals

**D) Fertile eggs are more expensive**

1. What is the primary purpose of adding synthetic vitamins to commercial egg production rations?

A) Enhance yolk pigmentation

B) Improve eggshell strength

C) Increase overall egg size

**D) Boost the nutritional content**

1. Which factor has the least effect on egg size?

A) Age of hens

B) Breed of hens

C) Diet of hens

**D) Environmental temperature**

1. What is the main reason for considering eggs an excellent food source for those recovering from illness?

A) High fat content

B) High water content

**C) High digestibility and nutrient concentration**

D) Low protein content

1. What is the primary source of vitamin D in eggs?

**A) Yolk**

B) Egg white

C) Eggshell

D) Albumen

1. Which statement about the pH of freshly laid egg albumen is correct?

A) pH is acidic (below 7)

B) pH is neutral (around 7)

**C) pH is alkaline (above 7)**

D) pH varies with egg size

1. External Quality: What factors influence the size and weight of an egg?

A) Color and shape

**B) Heredity, age, diet, and season**

C) Albumen quality

D) Yolk consistency

1. Egg Shape: The normal shape of hen's eggs is generally:

A) Circular

**B) Oval or spheroid**

C) Spherical

D) Conical

1. Shell Quality: What is the main concern regarding the quality of eggshell?

A) Yolk color

B) Albumen consistency

**C) Cracks or imperfections**

D) Egg size

1. Air Cell Size: What does the size of the air cell indicate?

A) Yolk freshness

**B) Interior egg quality**

C) Albumen density

D) External egg quality

1. Albumen Quality: What influences the quality of albumen?

A) Shell thickness

**B) Heredity and respiratory diseases**

C) Yolk color

D) Egg shape

1. Yolk Quality: What affects the position and shape of the yolk?

A) Albumen quality

B) Freshness

**C) Vitelline membrane strength**

D) External temperature

1. Nutritional Quality: The fatty acid composition of yolk fat is influenced by:

A) Yolk color

B) Heredity

**C) Diet**

D) Respiratory diseases

1. Sensory Quality: What contributes to an objectionable fishy flavor in eggs?

A) Heredity

**B) Poor diet**

C) Garlic proximity

D) Respiratory diseases

1. Determination Methods: What is the purpose of candling eggs?

A) To determine yolk color

**B) To detect invisible cracks and assess quality**

C) To measure albumen density

D) To identify egg size

1. Shape Index: How is the shape index measured?

**A) Ratio of maximum breadth to length**

B) Ratio of yolk diameter to height

C) Specific gravity measurement

D) Albumen height measurement

1. Shell Quality Measurement: What are the first two widely used tests for measuring shell quality?

A) Shell deformation and breaking strength

**B) Shell thickness and specific gravity**

C) Shell weight and cleanliness

D) Shell texture and color

1. Albumen Quality Measurement: What is the Haugh unit value of fairly good albumen quality?

A) 50 and above

B) 60 and above

**C) 70 and above**

D) 80 and above

1. Yolk Quality Measurement: What is the yolk index ratio?

A) Diameter to height

**B) Height to diameter**

C) Thickness to width

D) Circumference to radius

1. Factors Influencing Quality: What production factor can lead to thin porous and soft-shelled eggs?

A) Genetic factors

B) Age

**C) Feed lacking calcium**

D) Medicament and chemicals

1. Physico-Chemical Deterioration: What causes the cloudy appearance of albumen in a newly laid egg?

A) Evaporation of water

**B) Presence of carbon dioxide**

C) Increase in pH

D) Bacterial action

1. Physico-Chemical Deterioration: What occurs due to the escape of carbon dioxide from the albumen?

**A) Liquefaction of thick albumen**

B) Increase in pH

C) Yolk flattening

D) Shell thinning

1. Physico-Chemical Deterioration: What abnormality can result from the simultaneous ovulation of two ova?

A) Blood spots

**B) Double yolk**

C) Mottled yolk

D) Meat spots

1. Storage Factors: What is the recommended relative humidity range during chilling to avoid desiccation?

A) Below 50%

**B) 60-85%**

C) Above 90%

D) 40-60%

1. Why is frequent marketing essential?

A) To lower egg quality

B) To lengthen time between production and consumption

C) To avoid grading

**D) To shorten time between production and consumption**

1. What starts the deterioration of egg quality during storage?

A) Microbial action

**B) Physico-chemical alterations**

C) Heredity

D) Ovulation

1. Composition Breakdown: What is the average composition of liquid whole egg in terms of white and yolk?

A) 70% white, 30% yolk

**B) 64% white, 36% yolk**

C) 50% white, 50% yolk

D) 80% white, 20% yolk

1. White Solid Matter: What percentage of solid matter does the white part of the egg contain?

A) 15%

B) 8%

**C) 12%**

D) 20%

1. Ovalbumin Characteristics: Ovalbumin is a phospho and glycoprotein. What is its predominant percentage in egg white proteins?

A) 40%

**B) 54%**

C) 20%

D) 30%

1. Conalbumin Properties: Conalbumin, also known as transferrin, has an isoelectric pH of approximately:

A) 7.2

B) 5.5

**C) 6.6**

D) 9.0

1. Ovomucoid Function: What is the primary function of ovomucoid in the egg?

A) Iron binding

B) Antibacterial activity

**C) Trypsin inhibition**

D) Enzymatic digestion

1. Lysozyme Action: Lysozyme is known for its action against:

A) Gram-negative bacteria

B) Fungal proteases

**C) Gram-positive bacteria**

D) Viruses

1. Lysozyme Heat Sensitivity: How does heat affect lysozyme activity in egg albumen?

A) Enhances activity

B) No effect

**C) Reduces activity**

D) Activates lysozyme

1. Ovomucin and Thick Albumen: What contributes to the jelly-like structure of thick albumen?

A) Lysozyme

B) Avidin

**C) Ovomucin**

D) Conalbumin

1. Avidin Binding: Avidin binds with which nutrient, making it nutritionally unavailable?

A) Calcium

**B) Biotin**

C) Iron

D) Vitamin C

1. Ovoglobulins: Which fractions of egg white proteins are called ovoglobulins and act as foaming agents?

A) G1 and G2

**B) G2 and G3**

C) G1 and G3

D) G1 and G2

1. Ovoinhibitor Function: What is the primary function of ovoinhibitor in eggs?

A) Antibacterial activity

B) Foaming agent

**C) Enzyme inhibition**

D) Iron binding

1. Flavoprotein Role: How does flavoprotein contribute to the antimicrobial properties of egg albumen?

**A) Binds riboflavin**

B) Acts as a foaming agent

C) Inhibits bacterial proteases

D) Enhances lysozyme activity

1. Yolk Spheres Composition: What is the main component of the yellow yolk spheres?

**A) Lipovitellins**

B) Phosvitin

C) Livetins

D) Low-density lipoprotein

1. Plasma Composition: What is the approximate composition of plasma in egg yolk?

A) 50% lipid, 50% protein

**B) 80% lipid, 20% protein**

C) 60% lipid, 40% protein

D) 70% lipid, 30% protein

1. Egg Yolk Lipids: Which component represents about 37% of the total lipid in egg yolk?

A) Cholesterol

B) Triglycerides

**C) Phospholipids**

D) Carotenoids

1. Ovomacroglobulin: What is the characteristic property of ovomacroglobulin?

A) Antibacterial

B) Heat resistant

C) Enzymatic

**D) Immunogenic**

1. Ovoinhibitors: What does ovoinhibitor inhibit?

A) Antibacterial activity

B) Foaming

**C) Enzyme activity**

D) Iron binding

1. Phospholipids in Egg Yolk: Which phospholipid is the major component in egg yolk?

A) Phosphatidyl ethanolamine

B) Lysolecithin

C) Sphingomylin

**D) Phosphatidyl choline**

1. Yolk Spheres Size: What is the average size range of white yolk spheres?

A) 1-10μ

B) 25-150μ

**C) 0.5μ**

D) 10-25μ

1. Water Insolubility: What makes ovomucin not easily studied by chromatographic/electrophoresis methods?

A) Enzymatic properties

B) Glycoprotein nature

**C) Fibrous structure**

D) Heat resistance

1. What is the average composition of liquid whole egg (white and yolk)?

A) 70% white, 30% yolk

**B) 64% white, 36% yolk (64:36)**

C) 50% white, 50% yolk

D) 80% white, 20% yolk

1. Which protein in egg white is heat resistant and acts as a trypsin inhibitor?

A) Ovalbumin

B) Conalbumin

**C) Ovomucoid**

D) Lysozyme

1. What is the primary function of lysozyme in egg white?

A) Emulsification

B) Coagulation

**C) Antibacterial action**

D) Flavor enhancement

1. Which egg white protein is responsible for the jelly-like structure of thick albumen?

A) Ovalbumin

B) Conalbumin

**C) Ovomucin**

D) Lysozyme

1. What is the isoelectric pH of lysozyme?

A) 4.6

B) 6.6

**C) 10.7**

D) 3.9-4.3

1. In egg yolk, what contributes to the yellow color of many food products?

A) β-carotene

B) Cryptoxanthin

**C) Xanthophylls**

D) Lutein

1. What functional property of egg yolk makes it an excellent emulsifier?

A) Coagulation

B) Foaming

**C) Emulsification**

D) Inhibition of crystal

1. What causes the greenish-black discoloration on the surface of hard-cooked egg yolk?

A) Xanthophylls

**B) Iron-sulfide (FeS)**

C) Conalbumin

D) Lecithin

1. What is the primary factor influencing the stability of egg white foams?

A) Presence of ovomucin

**B) Surface tension**

C) Foaming power

D) Specific gravity

1. Which condition is associated with the phenomenon of syneresis in egg coagulation?

**A) Overcoagulation**

B) Heat denaturation

C) Urea addition

D) Gelation

1. What is the primary role of egg yolk in mayonnaise?

A) Coagulation

B) Foaming

**C) Emulsification**

D) Antibacterial action

1. Which egg white protein is known for its iron-binding properties and acts as an antibacterial factor?

A) Ovalbumin

**B) Conalbumin**

C) Ovomucoid

D) Lysozyme

1. What happens to lysozyme activity in egg white when stored at 2 °C for 45 days?

A) Increases

B) Remains unchanged

**C) Decreases by 20-25%**

D) Completely degrades

1. What is the isoelectric pH of lysozyme, where translucent gel is formed in the albumen?

A) 4.6

B) 6.6

C) 10.7

**D) Above 11.9**

1. What contributes to the stability of thick albumen in eggs?

A) Ovoglobulins

**B) Ovomucin-Lysozyme complex**

C) Ovoinhibitor

D) Flavoproteins

1. How does the addition of urea affect ovalbumin in egg white?

A) Increases solubility

B) Causes coagulation

**C) Induces denaturation**

D) Enhances emulsification

1. What factor influences emulsification properties in egg yolk?

A) Cholesterol content

**B) Lecithin content**

C) Xanthophylls concentration

D) Protein denaturation

1. In which food product is the inhibition of crystal associated with eggs?

A) Custards

B) Meringues

C) Angel cakes

**D) Candy**

1. Which egg component contributes to the aftertaste in sponge cakes made with dark-colored yolks?

A) Xanthophylls

B) Lecithin

**C) Cholesterol**

D) Livetins

1. What is the primary function of egg white in salad dressing?

**A) Foaming**

B) Emulsifying

C) Coagulation

D) Inhibition of crystal

1. What does Quality Control (QC) aim to achieve in relation to customer expectations?

A) Increase production speed

B) Reduce costs

**C) Meet customer expectations consistently**

D) Maximize profits

1. What is the primary purpose of Quality Assurance (QA) in the context of egg production?

A) Reduce labor costs

B) Serve as a marketing tool

C) Win the confidence of managers

**D) Ensure safety and quality through routine checks**

1. What are the main quality attributes of eggs mentioned in the text?

A) Color, taste, and smell

**B) Size, shape, cleanliness, and soundness of shell, freshness, albumen and yolk quality, nutritive values, wholesomeness, and functional properties**

C) Weight, texture, and shelf life

D) Cost, availability, and convenience

1. What does ISO 9000 encompass in the activities of a company?

A) Only food safety

B) Only production efficiency

**C) All activities to ensure quality objectives are met**

D) Only HACCP system

1. What is the primary focus of ISO 22000?

A) Food quality

**B) Food safety**

C) Environmental management

D) Employee training

1. What is the role of Total Quality Management (TQM) in enterprises?

**A) Focus on customer satisfaction**

B) Minimize employee responsibility

C) Maximize production speed

D) Reduce product variety

1. What are the three levels considered for each process and product in implementing HACCP?

A) Raw material, processing, and packaging

**B) Raw product, process, and finished product**

C) Employee training, process monitoring, and product development

D) Quality attributes, system capabilities, and tolerances

1. According to the text, what is the role of the shell in egg contamination?

A) It remains sterile despite external factors

**B) It acquires infection from various surfaces it contacts**

C) It prevents microbial growth

D) It has no impact on egg safety

1. What is the primary concern for egg and egg products producers due to diseases and contamination?

A) Increased production costs

**B) Public interest in food safety**

C) Profit maximization

D) Brand promotion

1. What is the purpose of the ISO 15161 guideline for the food industry?

A) Provide microbiological standards

B) Serve as an ISO 9000 certification document

**C) Support HACCP controls for an effective food safety system**

D) Focus on total quality management

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