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**University of Salahddin**

**College of agriculture**

**Dep. Food technology**

**Subject : Meat processing problems**

**Time : 1 hr Total M : /100**

**Name :**

**Q1: Define the following terms: (10M)**

**1- Meat Processing:**

**2- Poultry is processing:**

**Q2 : /Fill the following blanks with suitable words or phrase**. **(20 M)**

1-The main enterprises operating in the industry are\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2- Wing Damage Causes by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , andCorrective Actions by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

3**-** Carcass Bruising Causes by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , andCorrective actions by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

4- the main Problems of red meat related to production are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

5- Broilers should arrive at the plant and be scheduled for processing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_hours after their last feeding.

**Q3: Write briefly on the following statements:**

**1-** Enumerate red meat problems related to raw material **(25 M)**

**2-** Write briefly about solving red meat processing problems by controlling of raw materials.**(15 M)**

3- Write briefly about red meat industurial cookery methods.  **(15 M)**

**4** - Write briefly problems and solutions of scalding and defeathering . **(15 M)**

Q1-Answer

**1-Meat processing** : meat processing industry has an important place in the food industry. However, there are significant problems that limit the contribution of the industry to the red meat sector, particularly with regard to the livestock enterprises which are the source of raw materials.

*2-* **Poultry is processing** primarily to convert the birds’ muscles into meat, to remove the unwanted components of the bird (blood, feathers, viscera, feet and head), and to keep microbiological contamination at a minimum*.*

Q2-

1- **(i) slaughterhouses; (ii) meat combines (which both slaughter animals and process meat and meat products); and (iii) meat and meat product processing plants**.

|  |  |  |
| --- | --- | --- |
| **Observations** | **Causes** | **Corrective Action** |
| 2-Wing Damage | 1-Wings caught on coop door. 2-Hangers too rough. 3-Field causes. | 1-Make sure doors on coop at proper angle for dumping. 2-Hangers should not pick up birds by the wings. 3-A check for field bruises/broken bones. |
| 3-Carcass Bruising | 1-Stunning voltage too high. 2-Field causes. | 1-Check voltage. 2-Adjust pickers daily. 3-Check flock placement density in grow. |

4- **Problems related to production**

1. Financing costs are high.
2. Energy costs are high.
3. Lack of qualified staff.
4. There is unregistered production in the sector.
5. Labor costs are high. **or**The capacity utilization incentives related to production.

**Or** The location of the production.

5- 8 to 12 hours

Q3

**1- Problems related to raw material red meat.**

1. Carcass meat prices are unstable Meat price is not determined according to the quality.
2. Technological conditions in the slaughterhouses.
3. Animals to be slaughtered are brought to the slaughterhouses under inappropriate conditions.
4. Cold chain is insufficient in carcass meat production and distribution.
5. The carcass meat yield of animals is low.

**2-Solving red meat processing problems by controlling of raw materials:** The development of new methods of evaluation and more rapid procedures in obtain objective data on raw materials is needed for meat processing operations. rapid methods of analysis for the quality of raw materials such as: For example, we need spices, non fat dry milk, meat, etc ....completed on many raw materials, the data is of limited value. Thus, a by the time analyses can be great deal of subjective evaluation is presently used in ascertaining the quality of raw materials used in meat processing.

3- **industurial cookery methods:** We have a long way to go in the development of better methods of large scale meat cookery and heat processing. Present methods allow too much loss in the transfer of heat energy to products and the variation in internal temperature at the end of the cooking cycle is too great. Naturally, these problems can result in high bacterial numbers, color differences, and poor scheduling of production. All of these difficulties add up to a variation in quality of the find product as well as ineffective supervision in plant processing.

4**-Scalding and Defeathering**

After bleeding, birds are scalded by immersion in a scald tank for 1.5 to 3.5 minutes, depending upon the water temperature. Scalding facilitates feather removal, but only if a uniform temperature is maintained throughout the scalder. When the scald temperature is too high, carcasses become discoloured due to uneven moisture loss. If the bird is alive when it enters the scald tank, the trachea, oesophagus, lungs, crop, gizzard and air sacs may become contaminated with scald water. The resulting carcass will be red in appearance. Moreover, the lungs may collapse and be difficult to remove, or they may drip as the viscera is transported through the plant.

Carcasses leave the scalder and go through a series of pickers designed to remove feathers from the body, wing, hock and neck. Feather removal is most successful when the pickers are placed close to the scalder so that the bird’s body temperature remains high during picking. The pickers can be a major source of carcass bruising, wing breakage and broken hocks, especially if rubber fingers are worn or not positioned correctly.