SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution

Coimbatore – 35

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DEPARTMENT OF FOOD TECHNOLOGY

19FTE402 & MEAT, FISH AND POULTRY PROCESS TECHNOLOGY

UNIT III – POULTRY PROCESSING
TOPIC- PRE-SLAUGHTER
FACTORS AFFECTING POULTRY MEAT QUALITY

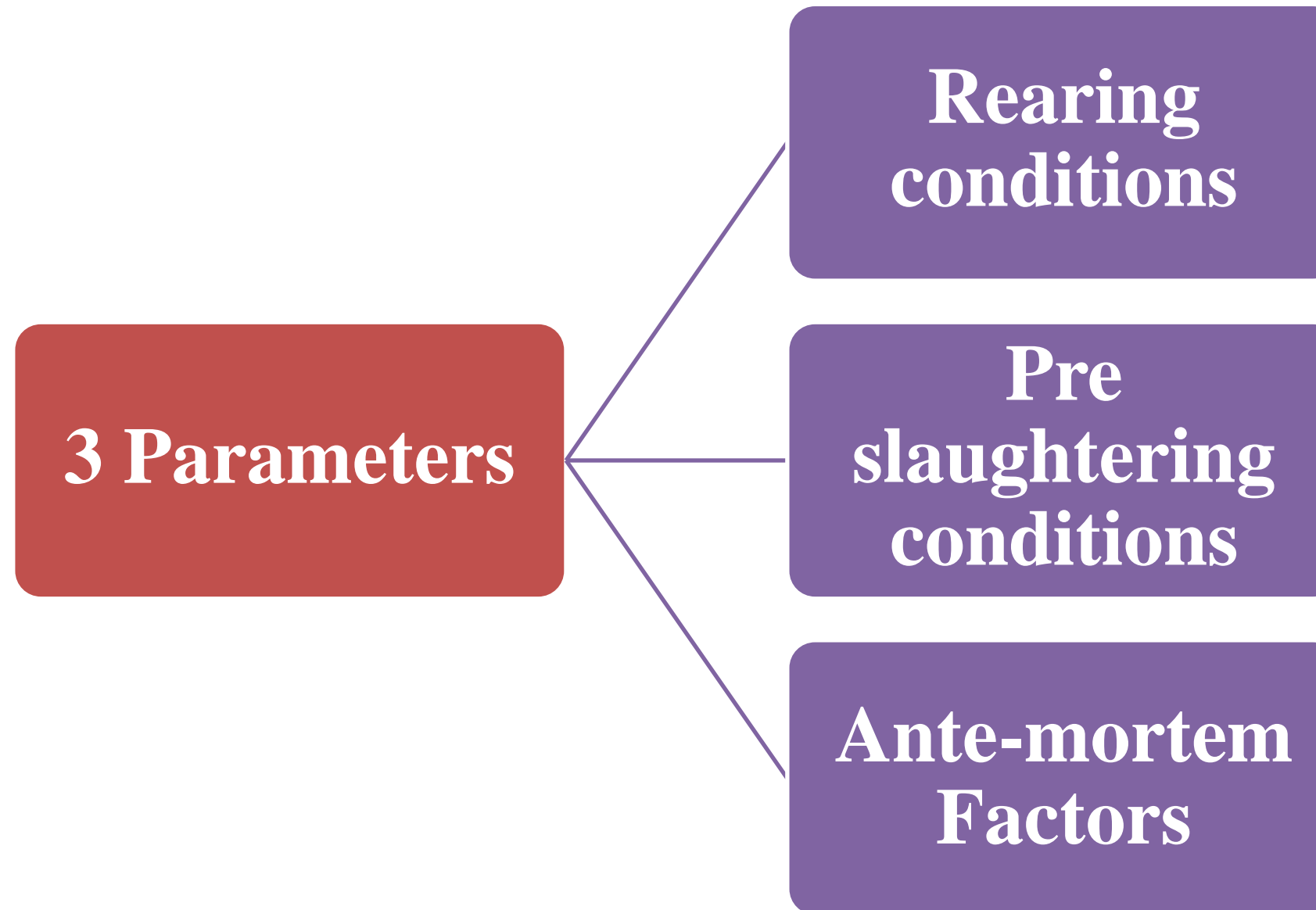Ms.Mohana Priya R AP/FT/SNSCT

Introduction

- Fish is a source of valuable animal protein and is now considered as a health food. This has resulted in increased consumer demand. Indian fisheries and aquaculture provides nutritional security to the human food and contributes to the agricultural exports and engages very large number of people in different activities.

- India is the 3rd largest fish producing nations (after Chine and Indonesia) in the world with the production of 7.3 million MT (FAO 2007). Presently, fisheries and aquaculture contribute 1.10 % to the national GDP, and 5.30 % to agriculture and allied activities, while the average annual value of output during the Tenth Five Year Plan (2002-2007) was Rs31, 682.50 crores.

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3 Parameters

- Rearing conditions
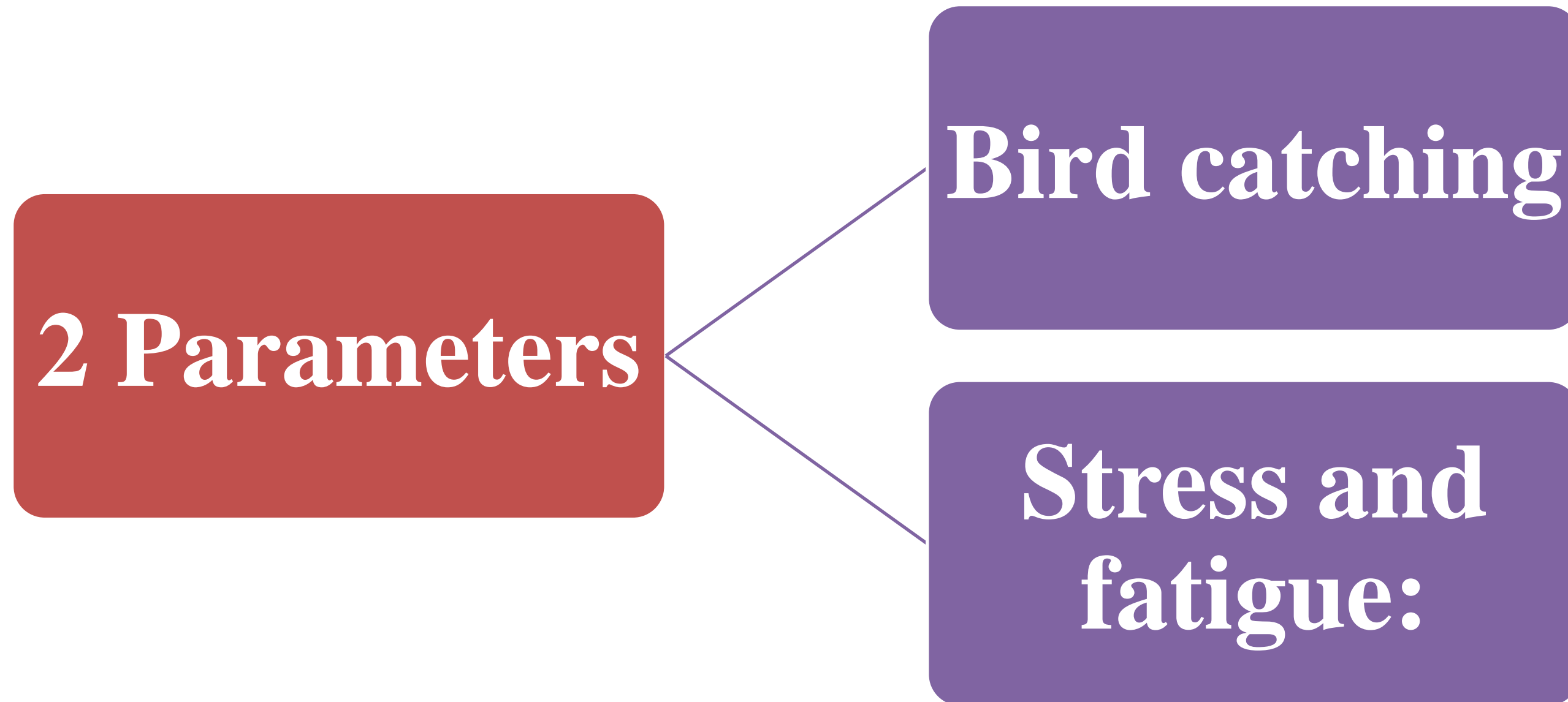- Pre slaughtering conditions
- Ante-mortem Factors

- Rearing effects quality of meat.

- Unfavourable rearing conditions decrease productivity.

- Temperature, airflow greatly effects bird conditions.

- Temperature, ventilation rate have significant effects on quality as well as biological efficiency.

2 Parameters

Bird catching

Stress and fatigue:

- Pre-slaughter management affects meat quality.

- Catching may result in injury.

- Maximum bruises result due to transportation and unloading at processing plant.

- Damage prone areas include mainly carcass : breast (11%),thighs(33%) and wings (38%).

- The way producer cage the birds is an important factor that determine meat quality

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- Stress and fatigue lower the quality of meat when exposed to adverse conditions before slaughter.

- Dark cutting meat or dark, firm and dry (DFD) meat may be produced due to low acid.

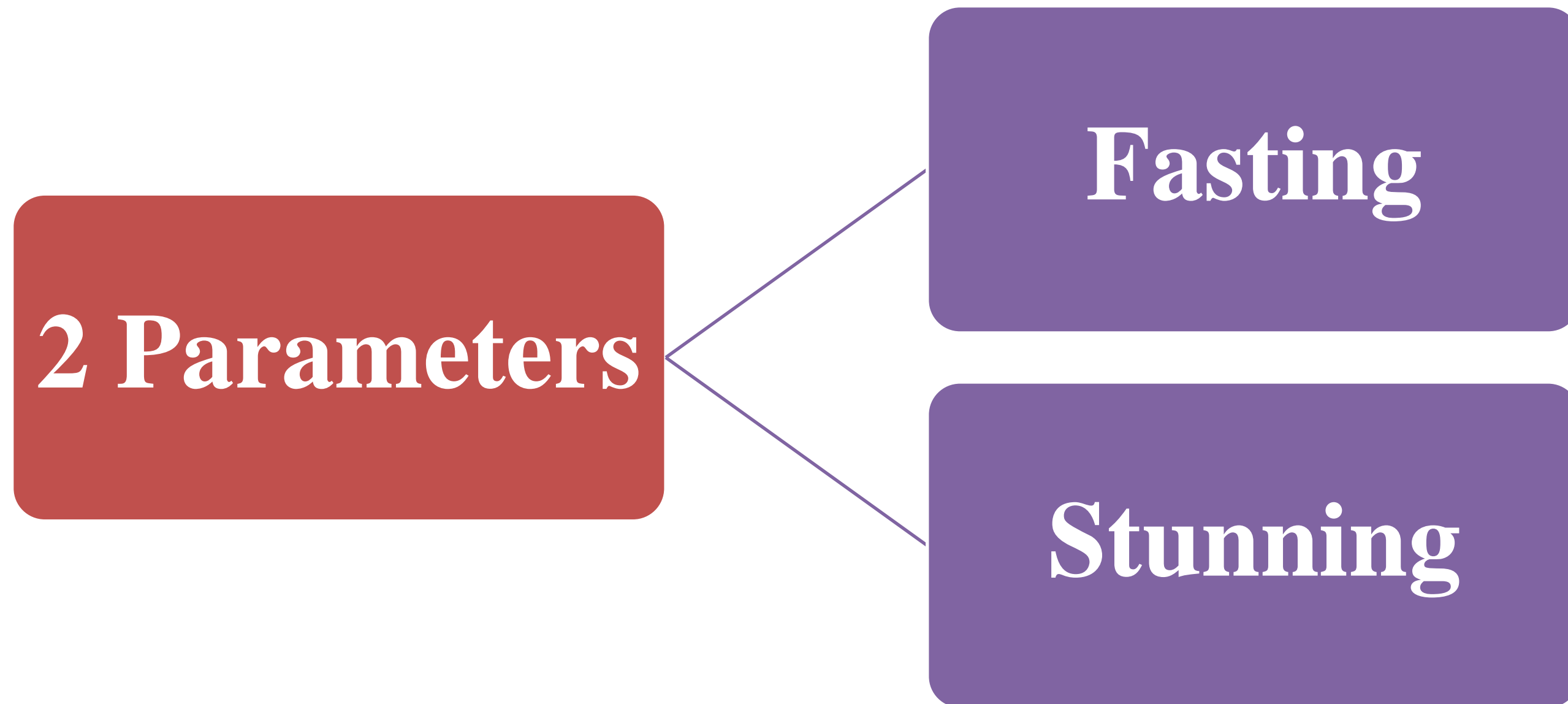- Keeping quality of meat reduced and looks dark.

The response of a laying hen to heat stress

Panting → Respiratory alkalosis → Acid-base imbalance

Decreased activity → Reduced feed intake → Nutrient deficiency

As a result drop in egg producction and increased mortality

2 Parameters

Fasting

Stunning

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- Period of stress and anxiety.

- Most likely takes place at farm and 12h prior to slaughter.

- Birds need proper care during this particular time period.

- Stress may accelerate rigor mortis development, reduce water holding ability, and paleness in meat.

- Transportation stress reduce tenderness and increase lightness.

- Reduce plasma levels of corticosterone.

- Lower incidence of carcass bruising, when birds transported before slaughter.

- Fasting prior to slaughter results in meat with higher pH and dark color.

- Fasting improves quality of meat.

- Accelerate rigor mortis and final product quality.

- Feed withdrawal from broilers reduced muscle energy stores.

- An ante-mortem factor that can have profound effect on meat quality.

- Stunning may immobilize the bird for automatic killing .

- commonly done by passing electric current from saline bath to bird's

- head through its body.

- Marked effect on muscle characteristics that induce hemorrhages and

- broken bones.

- Other factor affecting is stunning duration

- Alternative form of stunning is gas stunning.

- Birds exposed to anesthetic gas carbon dioxide or a mixture of carbon dioxide and argon to deprive the bird of oxygen.

- Influence the development of rigor mortis and the need for aging.

THANK YOU

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