

LABORATORY NO. 11.

11.1. MEAT AND MEAT PRODUCTS

11.1.1.ORGANOLEPTIC STANDARDS

11.1.1.1.FRESH MEAT AND REFRIGERATED MEAT

On the surface the meat has a dry crust.

On section: has a bright, compact and moist aspect; the liquid that is squeezed difficulty through finger pressing; pink-red colour; elastic with firm consistence with a rapid disappearance of the finger impressions; has its own smell specific to the breed; cattle meat with a white-yellowish colour and firm consistence; pork with soft, elastic and with a pink-pale colour; mutton with white and compact aspect; the shiny, elastic bone marrow which fills completely the bone channel; shiny nacreous, elastic tendons; smooth shiny joints, with clearly synovial liquid; flavoured souce produced after boiling and clear sedimentation, that has on its surface bubbles or a compact layer of fat.

The following kinds of meat are unfit for human consumption:

- sticky surface crust with mold spots;
- reduced firmness (persistent finger impressions), dirty synovial liquid, fat with matt aspect, rancid, rotten bad smell with dirty-grey marrow;
- souce produced after boiling and conglomerates sedimentation with rancid or fetid smell;
- frozen meat which has the surface darker than fresh firm meat which has white nacreous tendons and specific fat aspect, and the bone temperature of maximum -10°C . This kind of meat will have properties similar to dry or refrigerated meat. It is forbidden to froze again, the meat that has been previously frozen.

11.1.1.2. MEAT PRODUCTS

They have clean and dry surface, compact, adhesive to the content membrane; when sectioned has compact aspect, with granules, firm composition, white lard; pink colour, with specific taste and smell.

The products unfit for consumption are:

- with sticky surface, with molds;
- nonadhesive and broken membrane;
- content that has holes;
- adulterated taste and smell, fermented, rancid or any other strange taste and smell;
- addition of other meat products, canned or half-prepared meat.

11.1.2. CHEMICAL PROPERTIES

Chemical examination of the meat and meat products can be done through fragments or meat extract.

We get meat extract in the following way: we take a 10 grams sample of meat, minced in very small pieces and mixed with 100 ml water. We keep the mixture at the temperature of the room for 10 or 15 minutes. Meanwhile the solution is homogenised with a glass wand. The clear liquid of the surface is the meat extract.

11.1.2.1. ESTIMATION OF THE MEAT FRESHNESS

We estimate the meat freshness through the following methods: establishing the pH; NH_3 and H_2S establishing, these two substances result from proteins decomposition.

• pH ESTIMATION

The principle consists of estimating hydrogen ions concentration with pH indicator paper through colorimetric method.

We moisten the pH indicator paper in meat extract or we cover the meat surface. We compare the obtained colour with the colour of pH-meter scale colour.

NORMAL VALUES

- For beef fresh meat - 5.5 - 5.8 pH units;
- For pork fresh meat - 5.8 - 6.2 pH units;
- For mutton fresh meat - 6.1 - 6.2 pH units;

• NH_3 ESTIMATION

➤ WITH NESSLER REACTIV

The principle consists of a yellow-orange precipitation after reaction between NH_3 and Nessler reactiv.

Method: In a test tube we pour 10 ml meat extract and add 1-10 drops Nessler reactiv, we homogenise the liquid and watch the colour and the precipitation.

INTERPRETATION:

- negative reaction (fresh meat): after 10 drops of reactiv, the meat extract remains transparent and maintain its colour;
- relatively positive reaction (relative fresh meat): after adding at least 6 drops of reactiv, a yellow colour and precipitation appears.
- positive reaction (adulterated meat): after the first drops the yellow colour and precipitation appears.

➤ WITH EBER REACTIVE

The principle consists of a white cloud represented by NH_4Cl formed after reaction between NH_3 , that exist in meat extract, and HCl (from Eber reactiv).

Method: We pour in a test tube 2-3 ml of Eber reactiv, put on a cork, and after this we fix a piece of meat in a hook, introduce it in the test tube, without any contact with the walls or liquid.

INTERPRETATION

- negative reaction (fresh meat): the white cloud doesn't appear;
- relatively positive reaction (relative fresh meat): appears a discrete white cloud;
- positive reaction (tainted meat): white cloud around the piece of meat, that tends to extend in the whole test tube.

• H_2S DETERMINATION

The principle consists of formation of a black coloured compound (PbS_2) after reaction between lead acetate and H_2S from tainted meat.

Method: We prepare a paper impregnated with 10% lead acetate solution.

We put a sample of meat in a glass vessel (around 50 grams). With the cork we fix the prepared paper, on meat sample at 0.1-1 cm distance. This paper was previously moist in distilled water. Afterwards we let the vessel at the room temperature.

INTERPRETATION

- negative reaction (fresh meat): the paper doesn't colour itself after 15 minutes of exposure;

- relatively positive reaction (relative fresh meat): a brown colour of the paper, more intense on the edge;
 - positive reaction (tainted meat): the paper will be coloured brown in the first 2-3 minutes, and will become black after 15 minutes of exposure;
- The meat products prepared with garlic present a false positive reaction.

We have three possibilities to use meat depending on its freshness:

- fresh meat may be used for consumption, may be congealed, and may be transformed in meat products;
- the relatively fresh meat may be used only for consumption;
- the tainted meat will not be used for consumption.

11.2. FRESH FISH

11.2.1. ORGANOLEPTIC PROPERTIES

It has clear and bulging eyes, with transparent cornea; red gills because of the blood; skin of shiny natural colour, shiny and well fixed scales; retracted white anus; well individualised internal organs, without liquid in the main cavity; with specific smell; the flesh well bound to the bone system, firm and elastic, with rapid disappearing of the finger impressions, souce after boiling and depositing lightly opalescent, with pleasant smell and taste.

Fish can be sold only frozen. It is forbidden to recongeal the congealed fish.

Fish that is unfit for consumption has the following characteristics:

- body covered with the bad smelling mucous;
- pale scales which can be taken off easily (except hering and mackerel);
- eyes retracted into the eyesocket and opaque cornea;
- brown colour gills, with abundant mucous, with rotten smell;
- soft or broken abdominal wall, main cavity with sanguinolent liquid, soft organs and bad smell;
- muscular tissue soft and which can be easily taken off the bone;
- souce after boiling and depositing, with reluctant smell.

11.3. CONSUMPTION HEALTHY FOWLS AND FRESH CHICKEN

11.3.1. ORGANOLEPTIC PROPERTIES

They have pink-pale combs and wattles; bulging eyes; shiny beak; clean, intact skin, without plumage remains, and pink-yellow colour; legs with muscular rigidity; with shiny, elastic consistence, with rapid disappearing of the finger impressions; specific smell; souce after boiling and clear depositing, with pleasant taste and smell.

Frozen poultry is sold as such. It is forbidden to recongeal the previously congealed chicken meat.

Chicken meat is not fit for human consumption if they have:

- brown crests and wattles, retracted eyes, shineless beak, and their beak is full of mucous;
- grey-yellowish moist skin, with green spots on it;
- firmless, dark-red or grey meat, with altered to rotten smell;
- rancid smell of the fat;
- souce after boiling and sedimentation, with rancid and rotten smell.