

# Meat curing

From this historical perspective, meat curing may be defined as the addition of salt to meats for the purpose of preservation.

Modern definition of meat curing is addition of salt and nitrate/nitrite to meat that produces the color and flavor associate with cured meat.

## Meat Curing Ingredients

### Salt

- Salt is primary ingredient used in meat curing.
- Originally it served as a preservative by dehydration and osmotic pressure which inhibits bacterial growth.
- Main function of salt in cured meat is to add flavor.
- Salt levels are dependent on consumer's taste, but about 2-3% in the product is about right.

### Sugar

- It adds flavor.
- It counteracts the harshness of salt.
- The amount of sugar used is self-limiting due to its sweetening power.

### Ascorbates

- Ascorbates (sodium ascorbate or sodium erythorbate) are used to speed the curing reaction by faster color development through more rapid reduction of nitrates and nitrite to nitric oxide.
- The nitric oxide combines with meat pigment, myoglobin, to form nitrosomyoglobin, dark red color.
- When product is heated to 130-140°F the nitrosomyoglobin is converted to a stable pigment, nitrosohemochrome light pink in color.

### Nitrate and nitrite

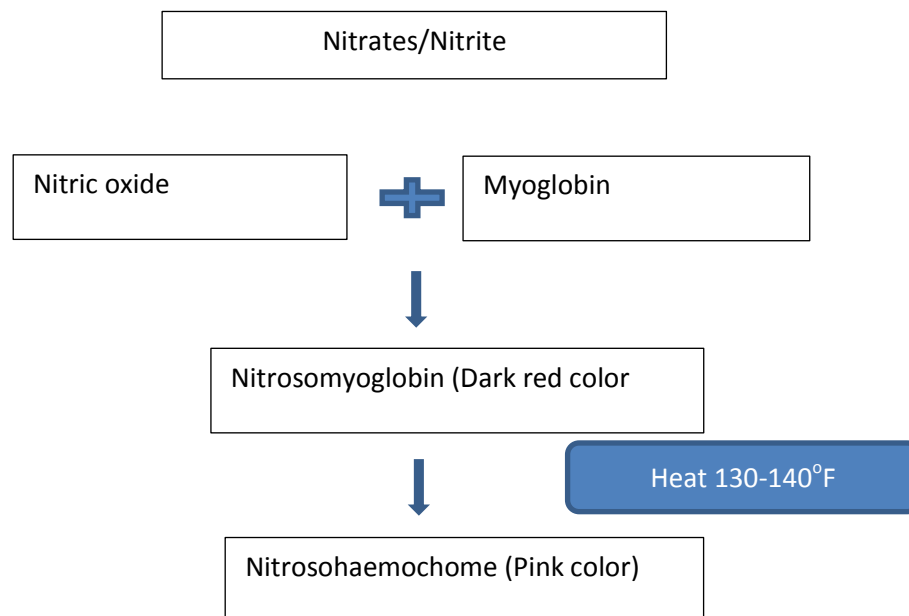
- Nitrates and nitrite either potassium or a sodium salt, are used to develop cured meat color.
- They impart bright reddish, pink color, which is desirable in cured product.
- In addition to color, nitrates and nitrites have a pronounced effect on flavor.
- They further affect flavor by acting as powerful antioxidants.

- Sodium nitrites also prevent the growth of a food poisoning micro-organisms, especially *Clostridium botulinum*.
- They are toxic when used in large amounts.
- Used levels are 3.5 oz per 100 pounds for dry meat or 7 pounds per 100 gallon pickle.

### Phosphates

- Phosphates are used for pickles.
- Used for color retention.

### Curing process



### Methods of curing

1. Dry salt curing
2. Brine soaking
3. Curing pickle injection

**Dry curing:** In this method, all the ingredients are applied on the surface of meat and stored at 36-38°F.

**Brine soaking:** In this method, brine is prepared and meat is soaked to that brine solution. Brine penetrates to the meat. It is a slow process and sometimes spoilage of meat occurred before completion of curing process.

**Curing pickle injection:** In this method curing pickle (brine solution) is injected in meat. There are three methods of injection as following:

- Artery pumping: Curing pickle is injected in artery, especially in femoral artery.
- Stitch pumping: In this method, single needle with multiple openings is used to inject curing solution.
- Multiple needle injection: In this method, different needles are injected into the different parts of the carcass.