Chemistry of Hamburger Grilling

Myoglobin = protein + heme (iron), Myoglobin makes the meat red.

Grilling sizzle is the water molecules burning off.

Myoglobin proteins denature (change shape) during grilling.

Maillard reactions create color and flavor of foods; especially meats. Heating amino acids and carbohydrates (sugars) turns meats a rich brown color and imparts rich flavors.

Browning occurs on grills or pans at about 250 °F.

Temperature for Burgers

- Rare 120 °F to 125 °F
- Medium 130 °F to 150 °F
- Well Done 160 °F or more

Food safety states that bacteria is destroyed at temperatures above 140 °F

Cooking Tips:

- 1. Cooking ground meat releases water. Add ice cold water to burger meat before cooking to keep moist.
- 2. Avoid flipping or pressing meat on the grill after the first 30 to 60 seconds to retain moisture and juicy texture.
- 3. Form burgers with a divot or dimple in the center cooking causes edges to retract and the divot allows for a flat patty.