**WHAT IS REDUCED OXYGEN PACKAGING (ROP)?**

ROP is a process where oxygen in a package is reduced to a level below that normally found in the surrounding atmosphere.

**Benefits of ROP**

- Prevents the growth of spoilage organisms
- Reduction of fat oxidation and rancidity
- Reduction of preparation and clean-up times

**Types of ROP**

- Vacuum Packaging
- Modified Atmosphere Packaging (MAP)
- Controlled Atmosphere Packaging (CAP)
- Cook Chill
- Sous Vide

**Food Safety Concerns with ROP**

*Clostridium botulinum*: causes botulism, which is a deadly illness
- Those associated with fish may grow at 38°F
- Those associated with red meat, poultry, pork, and vegetables may grow at 50°F
- Does not grow at pH 4.6 or less and Aw<0.94

*Listeria monocytogenes*: causes listeriosis, which has a high mortality rate
- Grow at temperatures as low as 31°F
- Does not grow at pH 4.4 or less and Aw<0.92

**Requirements for ROP**

Any retail food facility using ROP is required to have a HACCP plan!

**Exception:** If the food is labeled with the production time/date, held at 41°F or lower during refrigerated storage, and is removed from its package in the food facility within 48 hours after packaging.

Provided by the Food Processing Center at the University of Nebraska–Lincoln and the Lincoln-Lancaster County Health Department.
The University of Nebraska does not discriminate based upon any protected status. Please see go.unl.edu/nondiscrimination.