Reduced Oxygen Packaging (ROP), is done in many ways. The most common food establishment use of ROP is to mechanically remove air from around food in a plastic bag to create a tight seal, called vacuum packaging. Packaging food in re-sealable zipper storage bags is not considered ROP.

There are many benefits to using ROP, such as reducing freezer burn, portioning product, prolonging shelf life. Unfortunately, by removing the oxygen from around a food, you are also creating an environment favorable to the growth of *Clostridium botulinum*. This can make a safe food into a potentially lethal food after packaging. It is because of this that there are many requirements around ROP.

You can ROP some foods without a variance because they have barriers to the growth of the botulism, but you must write a Hazard Analysis of Critical Control Points (HACCP) plan first and have it approved by the Oregon Department of Agriculture.

Any ROP packaged food done without a variance and HACCP plan must be:

- Held below 41°F and,
- Have a water activity of .91 or less, or
- Have a pH of 4.6 or less, or
- Be a cured meat from a USDA-regulated facility from an intact package, or
- Have a high level of competing organisms, such as raw meat, raw poultry or raw vegetables.

ROP for raw fish is stricter than other raw products because *C. botulinum* is found in all species. Fish is required to be frozen before, during and after being packaged.

ROP also includes the cook/chill and sous vide methods of bagging foods. See Fact Sheet #4 for specific information about cook/chill and sous vide processes.

Vacuum packaging is commonly used to portion raw meats for freezing

The Variance Fact Sheet #3 has information about variances if you want to ROP cooked foods or other products not listed here.

There are also provisions for packaging cheese in the Code as well, see OAR 603-25-0030, Chapter 3-502.12 (E).