



## White Film on Jerky Products

*Dr. Jimmy T. Keeton*  
*Professor, Meat Processing*

Occasionally, jerky has a white film on its surface that has the appearance of mold. This usually occurs on a portion of the surface, but does not cover the entire surface. Most often, the film appears in vacuum packaged product or one that has been back flushed with nitrogen. This condition may be caused by the following factors:

### Mold

The white film could be mold on the surface if the product is packaged where oxygen can get to the surface (i.e., packaged in a jar, or non-vacuumed bulk packed), not vacuum packaged, nor back-flushed with nitrogen. Mold requires oxygen to grow and will not grow if oxygen is excluded from the product.



### Salts or Sugars

If too much salt or sugar is used in the brine/marinade formula, when the product is dried, these ingredients concentrate and at a critical moisture level, crystallize on the surface of the product. Brine formulations yield about 9 to 20% of the brine ingredients in the product. Those products that have above 10% ingredients tend to have more problems with film formation. Usually, this is caused by the extra sugar that is added, but not always.

### Tyrosine Crystals

Tyrosine, an amino acid, may be the problem. Just as tyrosine crystals form in cheese as it is dried, they can form on the surface of meat as well. Usually this occurs more on the sliced surfaces of country-style hams and a solid white film that looks like slime or mold, but is actually tyrosine or other protein breakdown products. Unfortunately, there are no straightforward solutions to this problem.

### Sodium Nitrite

Some processors have reported that sodium nitrite precipitates on the surface of jerky if "hard" water with excessive amounts of iron is used to formulate brine. This would appear as a white film and would be rare, but possible.

### Jerky Too Dry

If the jerky is dried excessively or too quickly, concentrating the brine ingredients can sometimes cause crystallization of the ingredients and a white film on the surface. Reducing or altering the drying cycle may alleviate this condition.

Although the occurrence of white film on the surface of jerky is not a food safety concern, taking steps to reduce the incidence of this condition, will enhance the appearance of the jerky product and have great consumer appeal.