

Meat Processing News

Department of Animal Sciences and Industry
Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Spices: A Baker's Dozen for Processed Meats

Part I: Written by Bruce Armstrong, Alferi Laboratories, reprinted with permission

What And How You Taste

The tongue is divided into four general regions of taste:

Sweetness – Tip of the tongue

Saltiness – Front side of tongue

Bitterness – Rear side of tongue

Sour – Across rear of tongue

You will absolutely have these sensations. Spices and other flavors in meat products do require training to recognize these tastes. Some spices taste sweet, some taste bitter, some are pungent (strong, sharp flavor), and some are aromatic (distinctive, savory smell).

Most spices that are sweet are also aromatic, such as cinnamon and coriander. A few are sweet and pungent, such as nutmeg and mace. Many of the herbs are bitter, such as sage.

The baker's dozen of spices for the meat industry are:

1. Mustard – The No. 1 spice used in the meat industry is mustard. It is grown in Montana, North Dakota, and the adjoining Canadian provinces. Mustard has little flavor, but more importantly it contains 29 percent protein. The advantage this offers is the extra amount of water that can be added to meat emulsions. Regular ground mustard has a practical limit of 1.5 percent. To use more mustard requires the use of "de-heated" mustard. The mustard is heated to 150 degrees, which deactivates the active enzyme. This enzyme creates acid, which in higher concentrations will break down the meat emulsion. The reason for using mustard is economics. Each 1 percent usage of mustard offers a 3/4 to 1 cent savings per pound of product.

2. Black Pepper – It is used for its spicy pungent flavor. It is the most important spice because black pepper is used in most sausage products. It is used at levels of 2 to 8 ounces per 100 pounds of meat, with 4 ounces the most common usage.

3. White Pepper – This is the ripe form of black pepper. It is used where the black specks of black pepper are not desired. It does have a mature flavor, which is sometimes described as musty.

4. Red Pepper – Red pepper is used for its throat (heat) sensation. It can be used without the burn associated with its usage. A small amount (1/2 - 3/4 ounce) will make a seasoned product have more flavor sensation. This low level tickles the throat, but doesn't burn it. It is commonly used in crushed form to aid visual appearance.

5. Paprika – Though paprika has a sweet tomato flavor. It is used in the meat industry only for its color.

6. Nutmeg/ Mace – This is the flavor most commonly associated with wieners, bologna and other sausages. Mace and nutmeg come from the same tree. Mace is a lacy, bright aril that surrounds the nutmeg. Mace is used where the dark color of nutmeg is a disadvantage. (*Editors note:* Bruce recommends nutmeg be used at a level of 1/2 to 1 ounce as higher levels impart a bitter flavor).

7. Coriander – Coriander is a sweet, flower-like flavor. It is the flavor of some wiener, bologna and smoked sausages.

8. Garlic – Garlic has a strong and hearty flavor. It is most often used in beef sausages and products eaten cold. It is useful in avoiding the tallow flavor of beef. (*Editors note:* Bruce suggests using 4 ounces per 100 pounds of meat to enhance the flavor of a formulation without imparting a detectable garlic flavor. A maximum of 4 ounces will provide good garlic flavor, but using more than 4 ounces per 100 pounds of meat will not increase garlic perception in the product.)

9. Sage – Sage has a strong, somewhat bitter flavor. It is most often used in pork sausage.

10. Chili – Chili is cooked to darken it and develop the cooked flavor associated with Tex-Mex products, chili powder and curry powder.

11. Ginger – A warm flavor. It is most often used with sage to prevent burping.

Upcoming Events

KMPA Convention
April 6-8, Salina, Kan.
Contact Sande Burris
316-285-6376

HACCP Workshops
March 30- April 1
Columbia, Mo.
May 8-10, Lincoln, Neb.
June 7-9, Manhattan, Kan.
Aug. 15-17, St. Louis, Mo.
Nov. 28-30, Lincoln, Neb.

Recall Workshops
August 2, Lincoln, Neb.
October 12, Omaha, Neb.

Sanitation & GMP
Workshop
October 11, Omaha, Neb.

Details available at:
<http://www.oznet.ksu.edu/haccp/Workshops.htm>

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12. Fennel – Fennel has a licorice-like flavor. This flavor is most commonly found in pepperoni and Italian sausage.

These spices account for most spice flavors in sausage and meat products. Other spices include cardamom, cinnamon, cloves and allspice.

USDA Labeling Web site

The Labeling and Additives Policy Division (LAPD) within the Food Safety and Inspection Service (FSIS) Office of Policy, Program Development, and Evaluation has developed a Web site to provide direction on labeling and product claims, and advice on processing chemicals and packaging. The site can be accessed at <http://www.fsis.usda.gov/oppde/larc/index.htm>. From this site, you can access the Food Standards and Labeling Policy Book, policy memos, generic labeling, animal raising claims, criteria used for evaluation of non-food compounds and proprietary substances, letters to technical center and industry concerning elimination of prior approval for non-food compounds, and other information about labeling. There are also links to other government sites.

K-State Meats Web site

To find meats-related information quickly, access K-State's new meats Web site at <http://www.oznet.ksu.edu//haccp>. The site contains issues of the K-State newsletter, *Meat Processing News*; information for consumers about meat-related topics; K-State

meat related publications; information and links for HACCP resources, meats courses at K-State, workshops and short courses; value-added information and all nutritional labeling; and Internet links to government, trade associations and other meats-related Web sites.

Newsletter Contributors:

Bruce Armstrong, Alferi Laboratories, Inc.
Mark Murphy, Extension Assistant
Liz Boyle, Associate Professor



Meat Processing News

Meat Processing News is published for Kansas meat processors by the Department of Animal Sciences and Industry, Kansas State University Agricultural Experiment Station and Cooperative Extension Service.

For more information or questions, please contact K-State Research and Extension, Animal Sciences and Industry at (785) 532-1247.

A handwritten signature in black ink that reads "Liz Boyle".

Elizabeth Ernst Boyle, Ph.D.
Extension Specialist, Meats
Cooperative Extension Service
Department of Animal Sciences & Industry
251 Weber Hall
Manhattan, Kansas 66506

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U.S. DEPARTMENT OF AGRICULTURE
KANSAS STATE UNIVERSITY
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