

# Advantages of Whey Protein in Meats



Whey protein offers benefits that make it an excellent choice in a wide range of meat products.

By increasing cook yield, reducing purge, improving mouthfeel and enhancing slicing yields, whey proteins offer quality improvements and cost efficiencies in regular fat, reduced fat and fat free meats.

## Suitable Types and Applications

Whey protein concentrates (WPC) are popular whey ingredients in meats.

- WPC34 to WPC80 can be used in frankfurters and breakfast sausage.
- WPC80 can be used in whole muscle meat products, such as ham, whole muscle poultry or roast beef.

## Product Benefits

- Increases cook yields
- Reduces purge
- Acts as a fat mimetic
- Enhances product texture, mouthfeel
- Improves slicing characteristics
- Supports consumer-friendly labels

## Functional Benefits of Whey Protein

Function	Specific Impact
<i>Solubility</i>	Smooth texture at most use levels Reduced “gritty,” “powdery” mouthfeel
<i>Water binding</i>	Binds and entraps water Improves cook yield Provides body, texture
<i>Viscosity</i>	Thickening Enhances body, texture
<i>Gelation</i>	Forms gels during heat processing Replaces fat, meat Creates moist mouthfeel
<i>Emulsification</i>	Forms stable, fat/oil emulsions Prevents oiling-off and “fat caps”

## Whey Protein in Meat Applications

Research conducted in 2006 by Dairy Management Inc.™ into eight different meat products showed that whey protein can significantly improve cook yield and reduce purge in processed meats. It also promotes clean slicing.

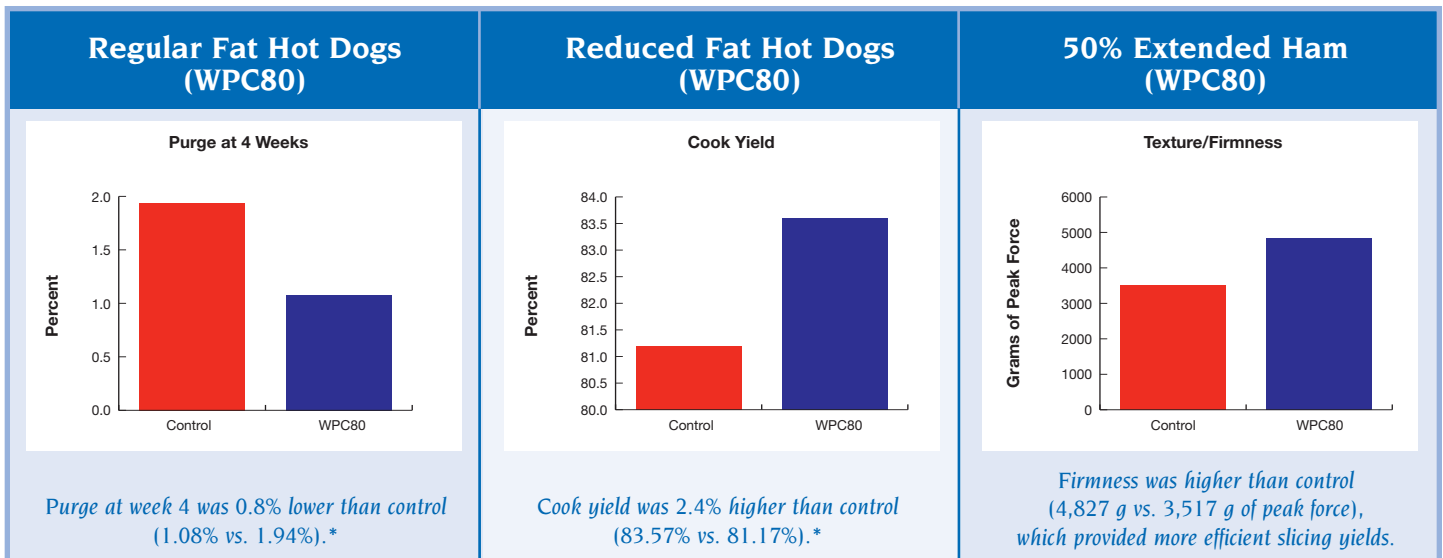
Sensory results demonstrated that processed meats made with WPC80 had very few differences versus a control in regular fat products and some taste advantages in reduced fat varieties. This is consistent with past published research in which reduced fat processed meats made with whey protein tasted as good or better than their regular fat counterparts (Mangino, 2000).

## Hot Dogs with WPC80 (vs. Control)

	Cook Yield	Purge at 4 Weeks	Cured Meat Flavor
Regular Fat	+2.56%*	-0.8%*	Parity
Reduced Fat	+2.4%*	-1.07%*	Significantly Higher

## 50% Extended Ham with WPC80 (vs. Control)

Firmness	Cook Yield	Purge at 4 Weeks	Slicing Yield
Significantly Higher	Parity	-1.93%*	+20%*



\* Statistically significant

## On the Horizon

### Textured Whey Protein as a Meat Extender and Replacer

- Mix of 80% whey protein isolate (WPI) and 20% cornstarch.
- Thermoplastic extrusion creates small meat-like chunks.

### Milk Minerals as Antioxidants

- Equal to or more effective than rosemary extract, butylated hydroxytoluene (BHT), sodium tripolyphosphate and sodium nitrate.
- Bind soluble iron in meat, reducing oxidation and “warmed-over flavor.”

## Find Out More

New whey ingredients are evolving in response to the needs of food processors.

- Different varieties offer different performance in viscosity, gelation and taste.
- Ingredient suppliers can customize or blend whey ingredients to deliver very specific functional properties.

For more information or a list of suppliers, visit [www.innovatewithdairy.com](http://www.innovatewithdairy.com) or call your DMI account manager or the DMI Technical Support Hotline at **1-800-248-8829**.