

# CALIFORNIA DRIED PLUM BOARD

## *Technical Bulletin*

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### Dried Plums Naturally Raise The Value Of Underutilized Meats

#### Abstract

##### Cutback Cuisine

In response to increasing food prices consumers and foodservice operators are cutting back on more expensive meal alternatives. U.S. retail food prices rose about 4% in 2007, the highest in 17 years. Overall retail food prices are expected to rise even faster than the general inflation rate at 3.5-4% through 2010, while food away from home prices could rise slightly higher by as much as 4.5% (USDA). These economic conditions create opportunities for consumers and foodservice operators to consider underutilized proteins to control food cost. A recent article in the Wall Street Journal notes “Restaurateurs plain and fancy are counting on dishes with bigger profit margins to stay afloat. Restaurants have long engineered menus to allow the bigger profits from pastas and vegetable side orders to subsidize such loss leaders as rib-eye steaks. But rising prices have prompted a furious new round of behind-the-scenes shuffling. Some chefs are yanking pricey entrees from the menu to promote as daily specials. Another strategy is to offer a less expensive meat cut. Some restaurants are also decreasing portion sizes. Meat scraps that used to get ground into hamburger are now listed as a \$12.95 steak tartare at Murray's steakhouse in Minneapolis.” (WSJ 3/8/08)

##### Upping Meat Value With Dried Plums

Adding value to underutilized proteins is an effective way to improve processor, retailer and foodservice operator profitability. In the past many of these lesser value proteins were sold at low prices or used in low margin applications. For many processors adding value using outdated manufacturing techniques or synthetic ingredients came at the price of consumer acceptability. Lengthy ingredient statements, unknown additives, less than satisfactory sensory improvements and short shelf life often failed to meet objectives.

Dried plums naturally raise the value of underutilized proteins. Texture, flavor and consumer ingredient acceptance results from dried plums' unique composition. Labeled as “natural flavors”, the non-characterizing flavor of dried plums helps to improve the savory taste of proteins while rounding out the flavors of herbs and spices. Important for meat processors is the natural water-binding abilities of dried plum ingredients that when used in a vacuum tumbling process can add 12% or more weight much of which is retained throughout the final cooking process. The ability to control purge is improved. And dried plums' natural antioxidants help to extend shelf life in fresh and frozen meat formats.

#### DRIED PLUMS' NUTRIENT COMPOSITION NATURALLY RAISES UNDERUTILIZED PROTEIN VALUE WHILE CLEANING UP LABELS AND EXTENDING SHELF LIFE

|                     | % Per 100 grams |
|---------------------|-----------------|
| Fiber               | 7.5             |
| Sorbitol            | 15.0*           |
| Malic Acid          | 1.5-2.0         |
| Antioxidants (ORAC) | 6552            |

\*Dried plum powder: 25% sorbitol

The added value contributed by dried plums can be applied in beef, pork, chicken and turkey products. For most meat processing methods there is a dried plum product suited for adding value including paste, bits, diced, purees, juice concentrates and powders.

## Background

### Adding Protein Value

According to the recently published National Meat Case Study 2007 sponsored by Cryovac along with the Beef Checkoff and Pork Checkoff, value-added options grew at supermarkets from 4% of total meat case packages in 2002 to 10% in 2007. Although value-added chicken only accounts for 7% of chicken in the average meat department, many of these new chicken options are appearing in the frozen food aisles as well as in delis. By contrast, value-added pork options have almost doubled their package share in the past three years from 12% of packages in 2004 to 23% in 2007. Turkey saw a notable 5% increase in the category with 19% of packages now including an added flavor or ingredient compared with 14% in 2004.

### Starting With Beef

Beef value-added cuts are a recently developed line of beef cuts taken from the underutilized chuck and round. The line consists of steaks and roasts that help meat processors, retailers, foodservice operators and cattle producers improve overall profitability while supplying more options to their customers. They allow consumers to enjoy more great tasting steaks and roasts that are easy to prepare and often moderately priced.

These new cuts resulted from new cutting techniques brought to light by the beef industry's Muscle Profiling Study. Several of these cuts have grown in popularity and are now being manufactured throughout the U.S. and sold through retail and foodservice outlets.

The beef industry has added so much value to cuts from the chuck and round—the most sale-weight in a carcass but historically the least valuable—that Cattle-Fax figures it accounts for upwards of half the \$15/cwt. that has been added to the price of fed cattle via growing consumer demand.

“If we figure that increased demand growth has been worth \$15/cwt. on a fed steer, just the increased demand in chuck products accounts for \$6-\$7/cwt. of that increase,” says Mike Miller, Cattle-Fax director of business development. “This effort in changing the value and makeup of the chuck and how we merchandise it has been huge.”

For perspective, according to Miller, between 1988 and 1993, while the value of the loin and rib increased three percent and four percent, respectively, chuck value had declined 24 percent, round value had declined 25 percent and the value of trimmings from these primal cuts had plummeted 28 percent. The wakeup call came with the knowledge that the chuck and the round account for 69 percent of total carcass weight.

The first success of the Beef Value Cuts program was the flatiron steak—a muscle that comes from the chuck shoulder, a sub-primal that traditionally has been either ground up or transformed into blade roasts and steaks, which have never been known for tenderness. Turns out, the whole muscle which is the flatiron is second only to the loin's tenderloin

for tenderness. For perspective, since 1998 when the flatiron steak came to market, the value of the chuck has increased 60 percent and the value of the round has increased 32 percent.

### **Lifting The Value of Lifter Steak**

The top blade steak is a smaller cut from the top blade roast. Other names for the top blade steak include lifter steak. Though a lowly chuck steak, lifter steak is tender enough to grill, broil, or pan-fry, as long as it is marinated first. While eating may require cutting around some gristle (which can be removed in processing), this is an economical and flavorful steak that is also great for making fajitas, London broil or substitute for flank steak or skirt steak.

Marinating is a critical step to tenderizing lifter steaks, particularly if the marinade includes plum juice concentrate and the lifter meat is vacuum tumbled. Plum juice concentrate is a USDA approved natural flavor that when combined with other flavor system ingredients also helps to tenderize as well as bind moisture all the way through cooking. Also important is the ability to shorten and simplify meat labeling with natural ingredients with known consumer identities. When processed using this method, lifter steak matches or exceeds that of flank steak and London broil—tasting is truly believing.

#### **BURGUNDY MARINADE: 10 LB. LIFTER MEAT BATCH**

| <b>Ingredient</b>                 | <b>Amount</b> |
|-----------------------------------|---------------|
| Water                             | 1050 g        |
| <b>Plum Juice Concentrate</b>     | <b>171 g</b>  |
| Burgundy Wine Flavor or Reduced   | 117 g         |
| Salt                              | 4 g           |
| Liquid Au Jus (Minor)             | 10 g          |
| Black Pepper, Coarse Grind        | 1 g           |
| Mushroom Powder (R. L. Schreiber) | 0.5g          |
| Roasted Garlic Flavor (FONA)      | 0.5g          |
| Caramelized Onion Flavor (FONA)   | 0.5g          |

#### **TERIYAKI MARINADE: 10 LB. LIFTER MEAT BATCH**

| <b>Ingredient</b>                 | <b>Amount</b> |
|-----------------------------------|---------------|
| Water                             | 1050g         |
| <b>Plum Juice Concentrate</b>     | <b>171 g</b>  |
| Teriyaki Glaze (Minor)            | 117 g         |
| Salt                              | 4 g           |
| Liquid Au Jus (Minor)             | 10 g          |
| Black Pepper, Coarse Grind        | 1 g           |
| Mushroom Powder (R. L. Schreiber) | 0.5g          |
| Roasted Garlic Flavor (FONA)      | 0.5g          |
| Caramelized Onion Flavor (FONA)   | 0.5g          |

***Marinating Procedure:***

Jaccard Lifter Meat (Needle if available)  
 Add meat and marinade to vacuum tumbler  
 Pull a 20 lb vacuum  
 Tumble for 23 minutes

***Cooking Procedure:***

Cooking instructions as follows: Cook in a low-temperature oven at 145°F until done or a conventional oven at 275°F or until internal temp is met.

For Fajita Meat: Cook until Internal temp of 165°F then cut into strips with the grain

For Skirt Steak: Cut against the grain.

For London Broil: Cook to 140°F internal temp (mock flank steak) Slice on a bias into 1/4 inch strips.

**Economic Payoff**

The economic payoff of marinating and vacuum tumbling lifter steaks can be significant. For example, lifter steaks wholesale for about \$2.20/lb. (3/08). Ingredient cost for marinade ingredients including plum juice concentrate is estimated at 21-24¢/lb. for a total ingredient cost of \$2.41-2.44/lb. Flank steak wholesales for about \$4.55-4.81/lb. (3/08). Thus, substituting lifter steak for flank steak significantly improves the profit return for the processor as well as the retailer or foodservice operator with comparable eating quality.

**Giving New Life To Roasting Chickens**

Older heavy hens and large roasting hens weighing 5-7 pounds or more frequently produce large, tough breast meat that is often less desirable than meat obtained from smaller, lighter weight broilers. Because of their tough meat texture these larger birds can offer less value to producers, consumers and foodservice operators.

Using a marinade that includes dried plum powder and vacuum tumbling naturally improves the texture and flavor of larger chicken breasts. More naturally tender with added moisture, this breast meat can substitute for more expensive broiler breast meat at a lower cost. And dried plums' natural antioxidants can suppress the growth of normal bacteria, thus extending fresh chicken shelf life.

**ITALIAN MARINADE:  
 10 LB. CHICKEN BREAST  
 BATCH**

| <b>Ingredient</b>                    | <b>Amount</b> |
|--------------------------------------|---------------|
| Water                                | 291.8 g       |
| <b>Dried Plum Powder</b>             | <b>44.8 g</b> |
| Vinegar                              | 73.0g         |
| Italian Seasoning Blend (Con Yeager) | 73.0g         |

***Marinating Procedure:***

Add meat and marinade to vacuum tumbler  
 Pull a 10 lb vacuum  
 Tumble for 20 minutes

### **Economic Payoff**

Adding dried plums to tumbled, marinated large chicken breasts achieves a more tender and flavorful product with an extended shelf life. A cleaner label improves consumer and foodservice operator perceptions and heightens repeat purchase.

### **Taking Turkey To New Levels**

Mechanically separated turkey breast meat and turkey thigh meat often achieves less value to processors than whole breast meat whether for the consumer or foodservice marketplace. This is particularly true of meat taken from older, larger birds. Turkey processors marketing fresh or frozen sausage and patty products remain interested in the advantage of a natural label claim with few ingredients and an extended shelf life.

Using dried plum powders, juice concentrates, purees, bits and diced fruit can help these manufacturers achieve these goals while returning the higher profit margins that these benefits offer to consumers and foodservice operators.

### **TURKEY BREAKFAST SAUSAGE: 1000 GRAM BATCH**

| <b>Ingredient</b>                 | <b>Amount</b> |
|-----------------------------------|---------------|
| <b>Plum Juice Concentrate</b>     | <b>30 g</b>   |
| Breakfast Sausage Seasoning Blend | 17 g          |

### **Procedure:**

Use a single grind 3/16-inch plate.

Blend all ingredients

Cook at 350°F until internal temperature reaches 185°F

### **Economic Payoff**

Adding dried plums to mechanically separated turkey breast and thigh meat used in breakfast sausage achieves a more tender and flavorful product with an extended shelf life. A cleaner label improves consumer and foodservice operator perceptions and heightens repeat purchase.

### **BOOSTING THE FLAVOR AND MOISTURE OF PORK**

Research revealed that pork tenderloin is just as lean as the leanest type of chicken - a skinless chicken breast. The USDA analysis found that pork tenderloin contains only 2.98 grams of fat per 3-ounce serving, compared to 3.03 grams of fat in a 3-ounce serving of skinless chicken breast. Pork tenderloin meets government guidelines for "extra lean" status. In fact, on average, six common cuts of pork are 16 percent leaner than 15 years ago, and saturated fat has dropped 27 percent. The new study was a collaborative effort of scientists at the USDA, University of Wisconsin-Madison and University of Maryland, in cooperation with and funded by the National Pork Board.

With the nutritional value of pork having been improved, the sensory value of lean pork can be further enhanced through the addition of dried plums. Vacuum tumbled marinades and rubs containing dried plums not only add flavor but also moisture and

tenderness. Moisture pickup can be as much as 12% or more and much of the moisture is retained after cooking.

### **Economic Payoff**

Adding dried plums to lean pork loins, tenderloins, chops and roasts contributes flavor and moisture as well as weight through moisture pickup. The benefits of less fat and superior flavor and texture ensure satisfied customers. Flavor systems incorporating dried plums can be created in both marinades and rubs that differentiate pork dishes allowing retailers and foodservice operators to create new profit opportunities for a few cents per pound.

### **Asian Plum Marinade For Pork**

**Ingredients:** *Use approximately 1 ounce of marinade per 1 pound of meat.*

|  |           |
|--|-----------|
| KC Masterpiece Honey Teriyaki Marinade | 75%       |
| Water                                  | 21%       |
| <b>Dried Plum Powder</b>               | <b>4%</b> |

#### **Procedure**

1. Place dried plum powder and water in a mixing bowl and whisk well to combine. Let rest for 5 minutes for plum powder to bloom and whisk again.
2. Add marinade to plum mixture and whisk to combine.
3. Place marinate and pork loin in tumbler.
4. Pull a 20-pound vacuum and tumble for 20 minutes.
5. Remove pork loins and marinade from tumbler, vacuum package or reserve for roasting.

#### **Roasting Procedure**

1. Remove excess marinade from pork loin.
2. Rub liberally with Asian Plum Rub.
3. Place pork loin on a rack set above a sheet tray and roast in a preheated 275°F conventional oven until the internal temperature reaches 150°F. Let rest for 15 minutes before serving.

### **Asian Plum Rub**

| <b>Ingredient</b>        | <b>Amount</b> |
|--------------------------|---------------|
| <b>Dried Plum Powder</b> | <b>57 g</b>   |
| Star Anise               | 14 g          |
| Szechwan Peppercorn      | 14 g          |
| Cloves                   | 7 g           |
| Kosher Salt              | 29 g          |
| Orange Zest              | 7 g           |
| Cinnamon                 | 7 g           |
| Fennel Seeds             | 7 g           |

#### **Procedure:**

1. Place spices in a spice grinder or food processor and process until a fine powder is achieved.
2. Coat meat liberally with spice and keep under refrigeration for at least two hours.
3. Cook as desired.

## Conclusion

Consumers, retailers and foodservice operators are demanding fresh, nutritional and natural food ingredients with shorter, cleaner labels. They are also seeking the greater convenience that further processing can achieve. Dried plums have been shown to naturally enhance the value of underutilized proteins through texture and flavor improvements, moisture retention and shelf life. This functionality is derived from dried plums unique composition of fiber, sorbitol, malic acid and antioxidants. Labeled as “natural flavors”, the non-characterizing flavor of dried plums helps to improve the savory taste of proteins while rounding out the flavors of herbs and spices.

With meat processors facing higher feed costs and retailers, consumers and foodservice operators experiencing higher overall food costs, adding value to underutilized protein cuts is a logical and profitable consideration. Dried plums help meat processors satisfy customer demand while improving shelf life and margin returns.

For further information, recipes and formulas contact:

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