

## *Don't Waste Your . . .* **DRY MILK**

### FACTS & TYPES AVAILABLE . . .

**Milk Facts** – Besides being a delicious beverage, milk is important for a healthy diet. It is one of the richest sources of absorbable calcium. It's also high in protein, potassium, riboflavin, and vitamins A, D and B<sub>12</sub>; which are all essential to optimal health. Research has found a diet rich in milk (low-fat) helps reduce high blood pressure and prevent osteoporosis. It may also help prevent colon cancer and suppress the development of malignant tumors.

**Nonfat Dry Milk** – *Regular* and *instant* nonfat dry milk are made from skim milk that has been dried by spraying into hot air. The *instant* milk has been further processed causing it to clump together. This results in a product that is easier to reconstitute with water than is *regular* nonfat dry milk. They both have the same nutrient composition. *Regular* nonfat dry milk is more compact therefore will require less storage space, however, it is harder to reconstitute. The most common type of dried milk to be found in grocery stores is *instant* nonfat dry milk.

**Dried Whole Milk** will not store as well as nonfat dry milk because of the fat content.

**Dried Buttermilk** can be substituted for buttermilk in recipes. It will not keep quite as long as nonfat dried milk since it has a slightly higher fat level.

### USING DRY MILK IN RECIPES

**Baked Goods** - simply add the required dry milk and water using the *Reconstituting Chart* on this page.

**Meat Dishes** - use 1/4 - 1/2 cup dry milk per pound of meat in meatloaf, hamburgers, etc.

**Mashed Potatoes** - mash cooked potatoes, then add 1/4 cup dry milk for each cup of potatoes. Use either the water the potatoes were cooked in or fresh milk to give the right consistency.

**Cooked Cereals** -add 1/4 - 1/2 cup dry milk to each cup of cereal before cooking.

### DRY MILK RECONSTITUTION CHART

| Amount Needed               | Instant Dry Milk   | Regular Dry Milk   | Water                 |
|-----------------------------|--------------------|--------------------|-----------------------|
| 1 quart                     | 1 ⅓ cups           | ¾ cup              | 3 ¾ cups              |
| 1 pint                      | ⅔ cup              | ⅓ cup<br>– 1 Tbsp. | 1 ¾ cups<br>+ 2 Tbsp. |
| 1 cup                       | ⅓ cup              | 4 Tbsp.            | 1 cup                 |
| ½ cup                       | 3 Tbsp.            | 1 ½ Tbsp.          | ½ cup                 |
| ¼ cup                       | 1 ½ Tbsp.          | 3 tsp.             | ¼ cup                 |
| 1 cup<br>Evaporated<br>Milk | ⅔ cup<br>+ 1 Tbsp. | ½ cup<br>+ 2 Tbsp. | 1 cup                 |

### PURCHASING CONSIDERATIONS

~ Buy milk fortified with Vitamins A and D. Packaging should be water and air proof.

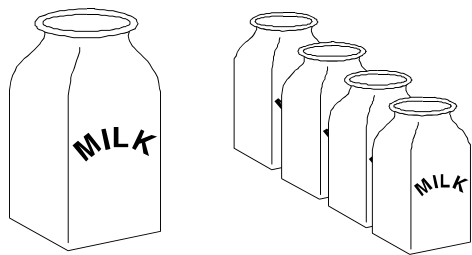
~ A claim of “No Preservatives” may be on the label to reassure customers, however, added preservatives are not legal therefore no dried milk processed in the United States will contain preservatives.



~ The label may say “Grade A” to indicate the quality of the milk used in the drying process. Essentially all dried milk processing plants use Grade A milk today.

~ “Extra Grade” on the label indicates that the processing plant has met certain criteria and the milk is slightly lower in butterfat and moisture content, more soluble, contains fewer bacteria, and contains fewer scorched particles.

~ The size of the container holding the dried milk should fit storage space considerations and family need. Once a container is opened, the milk will not keep as long, therefore, a very large container is not desirable for a household that consumes a small amount of milk per week.



**1 GALLON = 4 QUARTS**

## STORAGE CONDITIONS

**Temperature** – The storage temperature is the most important factor in determining the length of time that dried milk can be stored. It should be as cool as possible.

**Oxygen** – Exclude oxygen as much as possible to decrease the speed of undesirable chemical changes. Dried milk canned with nitrogen or carbon dioxide to replace air (which contains oxygen) will keep longer than dried milk that is exposed to air. Vacuum canning also decreases the available oxygen.

**Packaging** – The packaging for milk which will be held for extended periods of time should not permit air nor water vapor into the package. Cardboard and polyfilm packages do not provide as good of a barrier to air as do metal cans.

**Moisture** – Moisture will cause caking and accelerate undesirable changes in flavor, therefore, if the milk is not packaged in cans, store it in a dry location.

**Light** – Exclude as much light as possible. Most types of packaging will take care of this problem. Light will accelerate the undesirable chemical changes in flavor and odor.

**Shelf life** – The storage times and temperatures below based on nonfat dry milk (instant or regular) stored at different temperatures and in packages with either nitrogen or carbon dioxide to replace the air in the package. Shelf life will be shorter for products stored in paper or cardboard packages.

**40 E F – 48 months**  
**70 E F – 24 months**  
**90 E F – 3 months**

| <b>YEARLY MILK CONSUMPTION (approx)</b> |                          |                            |                           |                        |
|-----------------------------------------|--------------------------|----------------------------|---------------------------|------------------------|
|                                         | <b>Adults</b><br>(20-50) | <b>Adults</b><br>(over 50) | <b>Youth</b><br>(under 8) | <b>Youth</b><br>(9-19) |
| <b>Dry Milk</b>                         | 3 glasses<br>a day       | 4 glasses<br>a day         | 3 glasses<br>a day        | 4 glasses<br>a day     |
| <b>Fresh</b>                            | 68 gal.                  | 91 gal.                    | 68 gal.                   | 91 gal.                |
| <b>Dry</b>                              | 54 lbs.                  | 73 lbs.                    | 54 lbs.                   | 73 lbs.                |

## RECIPES USING DRY MILK

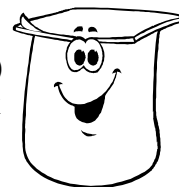
### SWEETENED CONDENSED MILK

2 tablespoons butter  
 ½ cup boiling water  
 ¾ cup sugar  
 1 ⅓ cups *instant* dry milk OR ¾ cup *regular*

Melt butter in boiling water; stir in sugar. Place in blender; while blender is going add dry milk. Blend until smooth. Makes 14 ounces.

### YOGURT

2 cups warm water (100 degrees)  
 1 cup non-instant powdered milk  
 2 tablespoons plain yogurt



Pour warm water in blender. Add milk and blend well. Add yogurt and blend. Pour into jars or glasses. Place jars, neck deep in warm water. Cover with a lid. Maintain temperature 100-120 degrees for 3-4 hours. Mixture should clabber or set up. Chill immediately. Sweeten to taste; use in dips, dressings, in place of sour cream. May also be used in desserts.

### PEANUT BUTTER CHEWS

½ cup peanut butter    ⅔ cup powdered sugar  
 ½ cup corn syrup      1 cup dry milk (or more)

Mix peanut butter and corn syrup; gradually add powdered sugar. Stir until smooth. Then add dry milk a little at a time and mix well until mixture is stiff enough to handle. Roll into your choice of shapes.

### MAGIC MIX\*

4 cups instant, *or* 1 cup flour, *or*  
2 ⅓ cups regular dry milk ½ cup cornstarch  
1 cup margarine

Combine all ingredients. Combine mixture until it resembles cornmeal. Store in an air tight container in refrigerator 6-8 months. Makes 5 cups.

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### CREAMY BROCCOLI SOUP

10 oz. pkg frozen broccoli 2 cups Magic Mix\*  
1 chicken bouillon cube 4 oz. sharp Cheddar  
2 Tbsp. dried onion flakes cheese, grated  
4 C water

Combine broccoli, bouillon cube, onion, and water; cook until broccoli is almost tender. Combine Magic Mix with 1 cup of the broccoli cooking liquid; stir until smooth. Add mixture to cooked broccoli; bring to boil. Add cheese; reduce heat and stir until cheese is melted. Serves 6.

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### CREAM OF POTATO SOUP

2 ½ cups potatoes, cubed  
1 tablespoon onion, chopped  
1 ½ teaspoons salt  
1 cup dry milk  
1 tablespoon flour  
2 tablespoons butter or margarine  
4 cups potato water (may add water or fluid milk)

Combine potatoes, onions and salt in large pot; add water and boil until tender. Drain the liquid; reserve. Add dry milk, flour and butter to the reserved liquid; beat until smooth. Cook over low heat until slightly thickened. Mash the potatoes; add to thick mixture and reheat. Serves 6.

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### FUDGESICLES

½ cup sugar  
2 cups Magic Mix\*  
3 tablespoons cocoa  
2 cups water  
1 teaspoon vanilla  
½ cup evaporated milk (*Reconstitution Chart*)

Combine sugar, Magic Mix, and cocoa in a saucepan; mix well. Stir in water. Stir over medium heat until pudding bubbles. Add vanilla and beat. Stir in evaporated milk, and cool. Stir again then pour into ice cube trays, or small paper cups. Insert a plastic spoon in each and freeze. Makes 10.

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### HOMEMADE "CREAM" SOUP MIX

2 cups powdered nonfat milk  
¾ cup cornstarch  
¼ cup instant chicken bouillon  
2 tablespoons dried onion flakes  
1 teaspoon basil leaves  
1 teaspoon thyme leaves  
½ teaspoon pepper

Combine all ingredients, mixing well. Store in air-tight container until ready to use. Yield: 9 cans

**\*CREAM OF CHICKEN SOUP:** Combine 1/3 cup of dry mix with 1 1/4 cups of cold water in saucepan. Cook and stir until thickened. Add to casserole as you would the canned product. Substitute for 1 can.

**\*CREAM OF MUSHROOM SOUP:** Add a 4 oz. can of mushrooms, undrained, as part of liquid in *Cream of Chicken Soup* above for cream of mushroom (10% fat)

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## WHITE SAUCE MIX

2 cups instant nonfat dry milk OR  
1 ½ cups regular nonfat dry milk  
1 cup all-purpose flour  
2 teaspoons salt  
1 cup butter or margarine

In a large bowl, combine dry milk, flour and salt; mix well. Cut in butter until mixture resembles fine crumbs. Store in airtight container in refrigerator. Use within 2 months. Makes 1 quart.

**\*WHITE SAUCE:** Combine 1/2 cup *white sauce mix* and 1 cup water in saucepan. Cook over medium heat, stirring constantly, until sauce is thickened and simmering. Makes 1 cup. (For richer sauce may substitute milk for water)

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## CREPES

3 eggs, beaten                      2/3 cup flour      1 cup milk

Place eggs in small bowl; mix in flour until smooth. Gradually blend in 1 cup liquid milk. Pour 2-3 tablespoons batter into non-stick fry pan, tilting to cover bottom. Cook until surface is dry and bottom is lightly browned. Slip crepe out of pan onto waxed paper. Makes 12.

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## MEATLESS CANNELLONI

1 cup cottage cheese  
1 ¾ cups spinach, cooked, drained, chopped  
½ cup mozzarella cheese, shredded  
1 cup instant dry milk  
1 teaspoon basil, dried, crushed  
6 tablespoons Parmesan cheese  
¼ teaspoon pepper  
3 cups meatless spaghetti sauce  
12 crepes (recipe above)

Combine cottage cheese, spinach, mozzarella cheese, dry milk, 4 tablespoons Parmesan cheese, basil and pepper. Spread 1 ½ cups spaghetti sauce in bottom of 9x13" baking dish. Place about ¼ cup cheese mixture on unbrowned side of each crepe; roll. Layer crepes on sauce; pour remaining sauce over top. Cover and bake at 400 degrees for 20 minutes. Sprinkle with remaining Parmesan cheese and bake 5 minutes longer.

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## ZUCCHINI PARMESAN

5 cups zucchini, sliced  
3 tablespoons butter or margarine  
½ cup onion, chopped  
3 tablespoons flour  
¾ teaspoon salt  
⅛ teaspoon pepper  
1 cup milk, (reconstituted)  
¼ cup pimento, drained, chopped  
⅓ cup Parmesan cheese, grated  
½ cup French fried onions



Parboil zucchini in salted water just until tender; drain well. Melt butter in saucepan; add onion and sauté until tender. Stir in flour, salt and pepper; gradually add liquid instant milk. Cook over medium heat until thickened, stirring constantly. Add zucchini, pimento and cheese; spoon into shallow buttered 1-quart casserole dish. Top with onions; bake at 350 E for 15 minutes or until bubbly.

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## GARDEN VEGETABLES

|                                 |                     |
|---------------------------------|---------------------|
| 2 tablespoons butter            | ¾ teaspoon mustard  |
| ¼ cup minced onion              | ½ teaspoon salt     |
| 1 cup mushrooms, sliced         | ⅛ teaspoon pepper   |
| ¼ cup flour                     | 1 qt. Boiling water |
| ½ cup ham, cooked, diced        | 2 cups green beans  |
| 2 C. liquid instant dry milk    | 1 cup cauliflorets  |
| ½ cup carrots, sliced           | ½ cup celery, diced |
| 1 teaspoon Worcestershire sauce |                     |

Melt butter in saucepan; sauté onion and mushrooms until tender. Stir in flour gradually; add ham, milk, sauce, mustard, salt and pepper. Heat until thickened, stirring constantly. Put green beans in boiling water; cook covered for 10 minutes. Add cauliflorets and carrots; cook covered, another 10 minutes. Add celery and cook 3-5 minutes longer until tender; drain. To serve, pour sauce over vegetables.

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## **BANANA MILK**

|                        |                  |
|------------------------|------------------|
| 1 cup water            | ¼ cup dry milk   |
| 2 ripe bananas, mashed | 1 cup fluid milk |

Combine part of water with dry milk to make a smooth paste; blend in rest of water. Add bananas and fluid milk; blend until smooth. Chill and serve.

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## **SPICE MILK**

|                     |                       |
|---------------------|-----------------------|
| 2 cups dry milk     | 1 tablespoon sugar    |
| ½ teaspoon cinnamon | ¼ teaspoon salt       |
| ½ teaspoon nutmeg   | 1 ½ quarts fluid milk |

Combine dry ingredients; add part of fluid milk to make a smooth paste. Add rest of the milk; blend until smooth. Serves 6.

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## **CITRUS CRUSH**

¼ cup lemonade concentrate  
Juice of 1 orange  
¼ cup powdered sugar  
½ cup nonfat dry milk  
1 cup crushed ice



Put all ingredients into blender. Cover; blend 10 seconds. Serves two.

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## **BLENDER BANANA PUDDING**

|                          |                    |
|--------------------------|--------------------|
| 1 envelope plain gelatin | 1 teaspoon vanilla |
| ¾ cup cold water         | 3-5 ice cubes      |
| ½ cup boiling milk       | 2 frozen bananas,  |
| 1 egg                    | Broken into chunks |
| ¼ cup sugar              |                    |

Place gelatin and cold milk in blender; cover and blend for a few seconds. Let stand for 3-4 minutes. Add the boiling milk; blend and let stand 1 minute. Add rest of the ingredients; cover and blend until smooth. Pour into parfait glasses and chill about 1 hour. Serves 4-5.

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## **PUDDING MIX**

|                |                          |
|----------------|--------------------------|
| 1 ½ cups sugar | 2 ½ cups nonfat dry milk |
| 1 tsp. salt    | ¾ cup cornstarch         |

Mix all ingredients together, store in tightly covered container in a cool place.

**\*VANILLA PUDDING:** Combine 1 ¼ cups pudding mix and 2 ½ cups warm water in top of double boiler. Place over boiling water; cook until thickened, stirring constantly. Add 1 tablespoon butter, remove from heat. Beat half the mixture into 1 beaten egg. Blend slowly into remaining hot mixture. Stir in ¾ teaspoon vanilla; chill. Serves 4-6.

**\*CHOCOLATE PUDDING:** Add ¾ cup cocoa and an additional ¼ cup sugar to vanilla pudding recipe.

**\*CARAMEL PUDDING:** Substitute 1 ½ cups packed brown sugar for granulated to vanilla recipe.

**\*FRUITED LEMON PUDDING:** Add ½ cup fruit of choice and miniature marshmallows to vanilla recipe.

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## **YUMMY POPSICLES**

6 oz. Can frozen orange juice  
¾ cup water  
½ cup dry milk  
1 banana, peeled and chunked  
1 apple, cored and chunked

Place all ingredients into blender; blend until smooth. Fill blender with ice; blend until smooth. Pour into popsicle forms and freeze. Serves 8.

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## **HOT CHOCOLATE MIX**

2 cups sugar  
2 ½ cups instant powdered milk  
¾ cup cocoa  
1 ½ cups non-dairy creamer

Mix all ingredients together. Stir 1/3 cup of mix into 1 cup hot water; serve.

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## YOGURT FRUIT SHAKE

1 cup chilled low-fat unflavored yogurt  
1 cup dry milk  
 $\frac{1}{4}$  cup sugar  
16 oz. frozen unsweetened raspberries, strawberries, etc.



Combine yogurt, dry milk and sugar in blender; blend until smooth. Add frozen berries a small amount at a time; blend until smooth. Serve immediately.

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## WHIPPED TOPPING

$\frac{1}{2}$  cup ice cold water                       $\frac{1}{2}$  cup dry milk  
 $\frac{1}{2}$  cup sugar                                      2 T. lemon juice

Put water into an ice cold bowl; add milk. Beat with a cold egg beater until stiff. Add sugar slowly while beating; add lemon juice and mix well.

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## PEACHES AND CREAM JELLO

3 oz package peach jello  
8 oz canned peaches, sliced  
 $\frac{1}{4}$  cup lemon juice  
1  $\frac{1}{3}$  cups skim evaporated milk\*

Place gelatin in small bowl. Drain fruit; reserve syrup (add water to make 1 cup). Heat syrup to boiling; add to gelatin and stir until dissolved. Add lemon juice; stir to cool. Add evaporated milk; stir well. Chill until mixture begins to set; whip until light and dry. Fold in fruit; chill. Serves 8.

*\*Reconstitution Chart on front*

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## EASY RICE PUDDING

$\frac{1}{4}$  teaspoon salt                       $\frac{1}{4}$  cup sugar  
2 cups boiling water              1 cup water  
 $\frac{1}{4}$  cup uncooked rice               $\frac{3}{4}$  teaspoon vanilla  
 $\frac{1}{4}$  cup raisins                      Cinnamon, nutmeg, opt.  
 $\frac{3}{4}$  cup dry milk

Add salt to boiling water; stir in rice. Bring back to boil; lower heat, add raisins, simmer slowly for 20 minutes. Combine dry milk and sugar; stir into remaining water until smooth. Stir into rice; add vanilla and simmer 10 minutes or until flavors are blended. Chill and serve with sprinkle of cinnamon or nutmeg if desired.

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## GRANOLA COOKIES

$\frac{3}{4}$  cup flour                                      1 egg  
 $\frac{3}{4}$  teaspoon baking soda              1 tablespoon water  
 $\frac{1}{4}$  teaspoon salt                              1 teaspoon vanilla  
 $\frac{1}{2}$  cup shortening                               $\frac{1}{2}$  cup raisins  
1 cup brown sugar                               $\frac{1}{2}$  cup shredded coconut  
 $\frac{1}{2}$  cup instant dry milk  
2 cups granola cereal

In large bowl, combine shortening, brown sugar, dry milk, egg, water and vanilla; beat until fluffy. Combine flour, soda and salt; add to egg mixture. Stir in raisins, coconut and cereal. Drop by rounded teaspoonfuls on ungreased cookie sheet; bake at 375 E for 8-10 minutes. Makes 4-5 dozen.

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### **Distributed by:**

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### **Sources:**

Rebecca Low and Deloy Hendricks, Flora Bardwell and Charlotte P. Brennand, Utah State University

*How to Feed Your Family Better For Less,  
Carnation Dry Milk*