

Powdered Milk (shelf life 3-5 years in storage container)

Buy in small containers, they last longer if unopened.

Powdered Eggs & powdered butter – shelf life 3-5 years in storage container.

I understand that the two best ones are Morning Moo and Country Cream. I recently found Country Cream selling for \$68.00 a case from www.grandmascountry.com. It also comes in chocolate. I have had people tell me it is the best you ever tasted.

You can find Morning Moo at the Blue Chip Group - "The Morning Moo's™ ©® is a Low Fat Dry Milk Alternate. It is nutritious, economical, convenient and delicious. Morning Moo's™ ©® comes in three flavors: the Original Milk Flavor, Chocolate and Strawberry Drink Mix. It is a nutritious blend of dairy, and nondairy ingredients formulated to produce a great flavored food beverage that may be used as a Milk Alternate for drinking, or in your favorite recipes, cereal, coffee, or in food storage - any place you currently use regular milk. It is made from Grade A Sweet Dairy Whey and fortified with Vitamins A & D." It is \$63.19 for a 24.25 lb pail. The address is www.bluechipgroup.net.

As for store brand powdered milk I prefer Sanalac. I have not tried it mixed up as milk, but it works good for cooking and mixes.

The following is a handout taken from Melanee Morton's Web page. She is on the PrepJr. E-mail list and has given her permission for the information to be used. She has a lot of other information on her site. The address is: home.attbi.com/~more-than-wheat/

Powdered Milk -- making it work... Well, most of you are thinking "Yuck -- only for baking" -- but, I disagree!

Powdered milk has come a long way in the area of flavor and thus usability. This is a food product that in times of need is greatly searched out and even fought over. Wars and crisis times in the past have shown such. Storage of powdered milk, or a substitute for it, is a very essential part of food preparedness.

The latest research states that we should store about 16 lb. per person -- but increasing the grains per person by 100 lb. to 400 lb. -- will work. (They do recommend storing more milk than this for pregnant or lactating women and others who many have special needs.) Otherwise, the old standard amount of storage for powdered milk was 60 - 75 lb. per person. Why did they research and come up with a lower number? Because of the level of waste and shorter shelf life of this product (compared to other food storage products), as it was not getting rotated or used, just wasted.

I have done a bunch of research to try and come up with a sound handout. What triggered this? Two things

1. people not rotating and commenting about not knowing how :-)
2. by reading materials/recipes that recommend using much more powdered milk than is presently stated by the manufacturers, so they are inaccurate.

There are several varieties of powdered milk (of course, there are flavored ones as well -- like chocolate!). Storage temperature is very critical in the long term keeping of powdered milks. The cooler, the longer it will keep the flavor on the palatable end (of course, using nitrogen pack/oxygen absorbers as well). Using a bucket or very large container for storage does work -- but it must be used more rapidly than that quantity in smaller containers due to exposure to oxygen upon opening. Mylar pouches or cans are ideal for most people. Keep sealed tight once opened -- moisture in the air will cause clumping.

Whey based: Morning Moo is an example of this type of product. They use the sweet dairy whey as the base and then add in vitamins A & D to fortify the product to come up with a "milk alternative" drink. This is dissolved into tepid hot water and then cold water can be added. Shelf life usually runs about 5 + years based on temperature stored. It can be used in recipes that call for fluid milk except puddings, ice cream and yogurt (note: Morning Moos milk contains less fat than whole milk and will not set up in products that need fat as a thickener). Although Morning Moos milk takes hot water to mix the ingredients, a very small amount of hot water is needed, only one cup to dissolve the ingredients for 8 c of milk. During freezing temps and if you don't have ready access to warm water -- you might want to consider a solar cooker set up to warm up your water to dissolve this product.

Regular nonfat: This is the product sold by the Storehouse/Cannery and several other companies. It is a dense dairy dehydrated milk powder that generally takes a bit of good mixing to get it to dissolve back into water without lumps -- using a blender or a whisk. It is milk that is basically spray-dried and put through one pass in the dehydration process. **For the best flavor, shelf life is 3-5 years.** After that, the flavor can start to definitely go down hill, although it is still usable for up to 10+ depending on storage environment. It can be used in all cooking. Do make sure it is well blended into dry ingredients when added in as a powder, or you can get powdered milk lumps. (Yup, that is experience talking!) This can be sold as fortified and not fortified with vitamins A and D. Be sure and get one fortified, as these vitamins help with proper nutrient absorption.

Instant nonfat: There is large crystallized versus small crystallized that is more of a powder in appearance. The product sold by the grocery stores is mostly large crystallized granules (Carnation, Albertson's brand, etc.) and milk purchased this way is the most expensive per pound. In large bulk bags, like Maple Island, Country Cream, Best Pack, and Walton (Humboldt) brands -- these are just dehydrated like the regular, but run through the process a second time in order to make a slightly larger size of the powder than the regular -- so it is lighter and airier and thus dissolves into water more readily than the regular. **For the best flavor, shelf life is 3-5 years,** after that, the flavor does start to change, but just as with the regular, it still can be used for years even if the flavor is off. Can be used in all cooking. Same as with regular nonfat milk, this can be sold as fortified and not fortified with vitamins A and D. Be sure and get one fortified, as these vitamins help with proper nutrient absorption.

Whole: This is powdered milk with the milk-fats left in and usually runs around 4% milk fat when reconstituted. Because of this fat, it has a very short shelf life -- closer to 3 years nitrogen packed. Several sources recommend storing this powder refrigerated. Maple Island does make a whole milk powdered product in addition to their nonfat products (www.maple-island.com). This would be an excellent item to have on hand with younger children or children with health concerns requiring higher caloric intake.

Soy and rice based: For those allergic to milk from cows, soy based and rice based products are available. Generally, they are very expensive and hard to come by in the powdered form. It is most often readily available only in the fluid fortified form -- not the powder for making up yourself. However, it is possible to get the powdered product, but it is pricey and hard to come by. You can also just make your own milk from rice or soybeans, but it will not be fortified (directions located in several cookbooks and websites). Alternate sources for calcium intake need to be evaluated. Handling this type of powdered milk will not be discussed in this handout, but here are sources for those with allergies or concerns:

Dixie's Soy Milk : 1-800-233-3668 ext. 300, <http://www.dixiediner.com>

Better Than Milk : Rice or Soy 1-800-227-2320 by Fuller Life Company

Soy Quick by Enter-G 1-800-331-5222

Trophic's Best (Tofu Delight) by the Blue Chip Group 1-801-263-6667.

These can be made yourself, but again, evaluate for calcium levels and supplementation.

Foods made with low fat powdered milk will have fewer calories and less cholesterol than those made from whole milk. Adding additional powdered milk to the recipe will enhance the nutritive value of the recipe without increasing fat content. So, for children struggling to eat enough calories, adding extra powdered milk in with the dry ingredients is definitely a great alternative.

To use powdered milk in any recipe calling for fluid milk, simply add water for the milk called for in the

recipe and put the powder in with the dry ingredients, or stir up and use as fluid milk before doing the recipe.

Recipes call for many types of milk. **Please realize that the powdered milk amount you use varies depending on the brand you purchase. I will give these different kinds a type name for ease in using throughout the handout -- so you can pick one based on what you have for the recipes!!

[type A milk] Country Cream, Maple Island, Best Pack, and Walton's (instant nonfat milk) calls for 1/3 cup of powdered milk to 2 cups water.

[type B milk] Regular nonfat powdered milk uses ¼ cup to 2 cups water.

[type C milk] Grocery store powdered milks (like Carnation, Albertsons -- the larger crystals) use 2/3 cup to two cups of water.

[type D milk] White Morning Moo uses ¼ cup to 2 cups water (dissolve in ½ cup hot water, then add the 1½ of cold).

[type E milk] Chocolate Morning Moo uses ¾ cup to 4 cups (dissolve it in 1 cup very hot water, then add the 3 other cups of cold).

Of course, these aren't "firm" numbers. I have given you the basic levels to use, and from these you get to be flexible and make it as strong or weak depending on what you individually prefer. Only in a few recipes is there a "right or wrong" amount, as too little in some of the cheese or yogurt and such will make a weak, unpalatable product. However, too much powder can also leave a powdery taste and feel.

All the following can be closely approximated from low fat powdered milk -- of course, the approximations will NOT have the fat content:

Whole milk (these numbers are according to my calculations and trials -- adjust however you like for yourself): For White Moo Milk and Regular milk [B,D], increase amount per cup by 1 tbsp. For the instant milks [A] like Country Cream, Maple Island (etc), increase amount per cup by 1½ tbsp per cup. For the large crystal instants [C] like Carnation, increase amount per cup by 2½ tbsp per cup.

Evaporated milk: Double the strength (two times the powder from regular amounts).

Whipped evaporated milk -- like whipped cream -- NOTE -- I am including 2 different ways to make this:

- #1. (Makes 3 cups) take 1 cup evaporated milk based on your type instructions above. Very thoroughly chill evaporated milk and whip until getting stiff --with the bowl inside another larger bowl full of ice water-- and add lemon juice at this point and continue to beat until very stiff. Sweeten and flavor as desired. A little vanilla and powdered sugar helps with the flavor--add when you add the lemon juice.
- #2. Uses A-5 tbsp B-3 tbsp C-½ c D- 3 tbsp powdered milk, 1 c water, 2 tbsp cold water, 1 tsp vanilla, 2 tsp unflavored gelatin, 4 tbsp powdered sugar. Mix powdered milk with water and heat up to scald. Soak the gelatin in the 2 tbsp cold water. Dissolve the gelatin mixture into milk mixture. Chill until it gels/sets up. Beat with a mixer until it gets like whipped cream -- and at this point add in the vanilla and sugar and continue to beat until well mixed in.