

FAT SUBSTITUTION IN HOME BAKING

Rhoda Schantz and Judiann McNulty¹

Health recommendations to reduce fat consumption have sparked consumer interest in reducing fat content in baked products. Besides increasing risk of heart disease and some forms of cancer, fats and oils provide 9 calories per gram and thus contribute a large number of calories to cakes, cookies, or muffins.

Fat (shortening, margarine, butter, lard) or oil in recipes acts as a barrier, making the flour less likely to absorb water. This gives the moist, tender baked product that seems to melt in your mouth. Fat or oil in recipes can be replaced with other food ingredients. Ingredients commonly used to replace fat include fruit or vegetable purees, low-fat cottage cheese, tofu, or non-fat yogurt. These ingredients partially combine with flour. A structure forms, but it is not the same as the fat/oil structure. Therefore, the texture of the new baked product with substitutions will not have the same texture as the original product. This change in texture may be worth the savings in fat and calories consumed. The more fat is replaced, the more texture changes.

Experiment with different levels of substitution to see which gives the most acceptable product. Start out by substituting one-third of the fat called for in the recipe.

Recommendations:

1. Applesauce--causes the least flavor and color change to baked products. It works well in light-colored cakes, cookies, and muffins. Substitute applesauce for equal amounts of fat or oil. Measure in a standard measuring cup designed for liquid ingredients. Products will be very moist. Sometimes it is necessary to reduce water if it is an ingredient in a recipe.

2. Bananas--substitute for equal amounts of fat or oil. Mash bananas first, then measure into a standard measuring cup designed for dry ingredients. Substitution in chocolate products such as cakes or brownies works best because the banana flavor and aroma are masked by the chocolate. Bananas work well in banana bread, banana muffins, banana cookies, and spice cakes.

3. Prunes--puree before using in recipes. Puree 1/2 cup in a food processor or blender with 2 tablespoons water or prune juice. Substitute for equal amounts of fat or oil using a standard dry measuring cup. Products tend to be dry so add moisture in the form of prune juice, milk, or water. A brown color predominates; use in dark baked products such as spice or chocolate cookies and cakes.

4. Pumpkin--heavy pigment imparts an orange color in baked products. Use in chocolate cakes, brownies, and cookies, or any product where

¹ Assistant professor, and university extension educator, respectively, College of Agriculture, University of Wyoming.

pumpkin color and flavor might be desirable. Measure cooked and mashed pumpkin in a standard dry measuring cup. Substitute for equal amounts of fat or oil.

5. Zucchini--grate when added in raw form. If cooked, mash and remove seeds. Measure grated zucchini in a standard dry measuring cup. Measure cooked zucchini in a standard liquid measuring cup. Zucchini works well in quick breads like muffins and coffee cakes. It does not change flavor or color of product.

6. Low-fat cottage cheese--blend in a food processor or blender until smooth. Measure in a standard dry measuring cup. Substitute for only half of fat or oil called for in recipe. Cottage cheese works reasonably well in muffins, but gives a rubbery texture. Use in cheesecake as a substitute for cream cheese.

7. Tofu--blend in a food processor or blender to form a smooth texture. Measure in a standard liquid measuring cup. Substitute for up to half of fat or oil called for in the recipe. Tofu works well in muffins, but gives a rubbery texture and a somewhat beany flavor.

8. Non-fat yogurt--substitute for equal amounts of fat or oil. Yogurt makes the product moist. Sometimes reduction of water is necessary. Drain yogurt to make product less moist. Yogurt works well in muffins, cakes, cookies, and brownies.

You may wish to combine these substitutes in whatever combination is appropriate for the recipe. Several food companies have developed recipes for consumers to use in their products to replace fat or oil. These recipes can be found in consumer magazines or by requesting the recipes from the several food companies.

References:

Handbook of Food Preparation, Ninth Edition, 1993. American Home Economics Association, Kendall/Hunt Publishing Co. Dubuque, Iowa.

Food Theory and Applications, Second Edition, 1992. J. Bowers, Macmillan Publishing Co. New York.

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