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Comments on RIN 0584—AD58: Fluid Milk Substitutions in the School Nutrition Programs

The members of the Soyfoods Association of North America (SANA) believe the School Nutrition Programs (SNP), which include the National School Lunch Program (NSLP) and the School Breakfast Program (SBP), have a crucial role in boosting the growth and development of **all** school children. SANA supports the program goals of providing nutritionally balanced meals that meet the Dietary Guidelines and promote the health of children every school day. SANA represents the interests of soybean farmers, soy processors, and manufacturers of soy foods.

For children who do not consume milk and for schools who want to offer them a reimbursable milk substitute, this USDA proposed rule on fluid milk substitution for the SNP is significant. Being able to obtain a fortified nondairy alternative to fluid milk at both breakfast and lunch without a medical documentation will enable more non-milk drinking children to consume calcium, vitamin A, and vitamin D, all essential nutrients, during critical formative years. SANA appreciates the opportunity to comment on the following points in the proposed rule:

1. Inclusion of Fortified Nondairy Alternatives to Fluid Milk in the SNP
2. Proposed Nutritional Standards for Milk Substitutes and Terminology
3. Written Documentation and other Administrative Procedures

1. Inclusion of Fortified Nondairy Alternatives to Fluid Milk in the SNP

SANA commends the USDA for allowing fortified nondairy fluid milk substitutes for students who participate in the SNP as set forth in Section 102 of Public Law 108—265 that “gives schools the option to offer an acceptable nondairy substitute to non-disabled children who cannot drink fluid milk for medical or dietary reasons.” According to the USDA School Nutrition Dietary Assessment Study—II, “on an average day, 14 percent of lunches selected by students in secondary schools did not include milk and about eight percent of elementary school lunches did not include milk.”¹ A study of food allergic children

¹ U.S. Department of Agriculture, Food and Nutrition Services. School Nutrition Dietary Assessment Study—II: Summary of Findings. April 200. Page 17. Accessed on Nov. 20, 2006 at:
<http://www.fns.usda.gov/oane/MENU/Published/CNP/FILES/SNDAllfind.pdf>

found that of offending foods identified in 34 of 41 cases, cow's milk was the most frequently reported cause (32%), followed by peanuts (29%), eggs (18%), tree nuts (6%) and soy (1%).² Because of lactose intolerance, allergies to bovine protein, adherence to a strict vegetarian diet, or cultural and religious practices that prevent consumption of cow's milk, a growing number of students do not take full advantage of the milk offered in school federal nutrition programs.

Fortified nondairy beverages ("soymilk") are good sources of high quality protein, calcium, vitamin A, vitamin D, riboflavin and phosphorus, as well as many other vitamins and minerals such as iron. Additionally, soy products contain no cholesterol and are low in saturated fat. By allowing students the option to choose fortified nondairy beverages ("soymilk") instead of liquid milk, the SNP better serves a diverse population who avoid dairy products for health, religious, or other special needs. Schools that elect to institute this rule may get reimbursed for accommodating the special needs of these children at a parent's request.

By allowing children fortified soymilk as a substitute for fluid milk, USDA is helping those children with health issues and cultural or religious preferences related to milk consumption obtain adequate calcium intake during growth and development. A study in the *American Journal of Clinical Nutrition* confirms that soy products are consumed by 90% of healthy Asian children, with 95% of these children consuming soy food before 18 months of age.³ Fortified soymilk contains at least the 276 mg. of calcium as specified in the SNP proposed minimum nutrient standard, and most soymilks exceed this level. Fortified soymilk has been shown in a study in the *Journal of the American Dietetic Association* to provide readily bioavailable calcium and to be readily acceptable by children in school.⁴ That study also showed that children drinking fortified soymilk receive more calcium per gram of saturated fat than those children consuming fluid milk, because of the low saturated fat content of soymilk. A recent study⁵ published in the *Journal of Nutrition* compared the calcium bioavailability of cow's milk and soymilk fortified with calcium and found that, whether fortified with calcium carbonate (CC) or tri-calcium phosphate (TCP), the calcium-fortified soymilk provided more absorbable calcium than equal amounts of cow's milk. A 1994 study in the *American Journal of Clinical Nutrition* showed that there is only a 32-percent calcium absorption rate from cow's milk, whereas fortified soymilk, tofu, and tempeh calcium absorption rate has been shown to be "excellent."⁶

These studies, remove question about the calcium bioavailability in fortified nondairy beverages ("soymilks"). Other recent studies concerning calcium availability and bioavailability in fortified soymilks have used questionable sample methods and analytical methods that are not representative of the entire soymilk category.⁷ SANA believes that current industry testing of fortified soymilk ensures that there is a reliable amount of calcium availability and bioavailability in fortified soymilks and that fortified soymilk is an excellent source of calcium for people who suffer from lactose maldigestion, have milk allergies, or avoid milk for cultural, religious, or other personal reasons.

² Nowak-Wegrzyn A, Conover-Walker MK, Wood RA. Food-allergic reactions in schools and preschools. *Arch Pediatr Adolesc Med.* 2001;155:790-5.

³ Quak SH, Tan SP. Use of soy-protein formulas and soyfood for feeding infants and children in Asia. *Am J Clin Nutr.* 1998;68:1444S-1446S

⁴ Reilly JK, Lanou AJ, Barnard ND, Seidl K, Green AA, Acceptability of soymilk as a calcium-rich beverage in elementary school children, *J. Am. Diet. Assoc.* 2006; 106:590-593.

⁵ Zhao Y, Martin BR, Weaver CM. Calcium bioavailability of calcium carbonate fortified soymilk is equivalent to cow's milk in young women. *J Nutr.* 2005 Oct;135(10):2379-82.

⁶ Weaver CM, Plawecki KL. Dietary calcium: adequacy of a vegetarian diet. *Am J Clin Nutr* 1994; 59(suppl):1238S-41S.

⁷ Reilly, J. Letter to the Editor. *J. Am Diet. Assoc.* 2006; 106 (11):1755.

2. Proposed Nutritional Standards for Milk Substitutes and Terminology

SANA appreciates USDA establishing nutritional standards for nondairy beverage alternatives (such as “soymilk”) to fluid milk that are consistent with those established for the Supplemental Food Program for Women, Infants, and Children. To limit confusion and ensure participants of these programs receive appropriate levels of essential nutrients **USDA should permit a modicum of flexibility in meeting the nutritional equivalency of cow’s milk in order to ensure that schools will have access to affordable, nutritionally sound milk substitutes that provide the key nutrients missing in the diets of children not currently drinking milk offered in school meals**

While SANA applauds USDA for including fortified nondairy beverages as a substitute for fluid milk in the SNP, our members have strong concerns about the proposed nutritional standards for milk substitutes to be authorized for the SNP. SANA understands the nutrient requirements were determined using whole milk as a benchmark, but we submit that the nutrient levels are not consistent with nutritional concerns of the program or calcium-fortified products in the marketplace. It is important for USDA to do a more complete comparison of nutrients in whole milk and soymilk to assess the benefits for school children, since soymilk more closely reflects the 2005 Dietary Guidelines for children in terms of saturated fat, cholesterol, dietary fiber, magnesium and vitamin E than does cow’s milk.

The table below presents the 2005 Dietary Guidelines, the nutrients mandated by the Child Nutrition Reauthorization Act, and the Minimum Nutrient Standards for School Lunches as included in 210.10(c) and demonstrates how soymilk is closely inline with these recommendations. The protein required for school meals can easily be provided by the 1½ to 2 ounces of meat or alternate protein product, required for Grade K-6 meals as indicated in this chart, without counting the protein from the milk or a milk substitute.

Although PL 108-265 indicated that a nondairy beverage substituted for the fluid milk provided in school meals should be nutritionally equivalent to fluid milk, there is no clear definition of nutritional equivalence.⁸ The law indicates that the standards should include fortification of calcium, protein, vitamin A, and vitamin D to levels found in cow’s milk.⁹ There is, however, variation in the amount of these nutrients that appear in cow’s milk at different fat levels. The level of calcium, vitamin A, vitamin D, and protein quality of fortified soymilks are similar to cow’s milk. Yet, fortified soymilks differ substantially from whole cow’s milk in iron, folic acid, saturated fat, polyunsaturated fat, *trans* fat, and cholesterol content.

A) Minimum protein nutrient requirement for SNP authorization.

SANA has concerns about the proposed minimum 8 grams of protein required for fortified nondairy beverages (“soymilk”) to be authorized for the SNP program because there are no calcium-fortified nondairy beverages (“soymilks”) on the national market that meet this 8 gram protein requirement.

⁸ Public Law 108-265. Child Nutrition and WIC Reauthorization Act of 2004. 108th Congress. June 30, 2004. Section 102. 118 STAT. 731 – 118 STAT 732.

⁹ Ibid.

a. Protein Minimum Level.

The 2005 *Dietary Guidelines for Americans* do not list protein as a nutrient of concern for adults, children, adolescent, or specific population groups.¹⁰ In fact, both *MyPyramid* and *The Dietary Guidelines* acknowledge that 1 cup of fortified soymilk or 1 cup of milk is an appropriate choice from the Milk Group. Setting a level of protein that will require fortification of currently available fortified nondairy beverages (“soymilks”) is not justified for a milk substitute identified for its calcium contribution. Requiring additional protein fortification could increase the cost of milk substitutes (such as fortified “soymilk”). Because Section 9(a)(2)(B)(iii) of the NSLA requires schools to “cover expenses incurred in providing allowable fluid milk substitutions that are in excess of expenses covered by program reimbursement,”¹¹ the potential higher cost of soymilks could result in higher costs for schools and a disincentive to offering non-milk drinking students an excellent source of calcium, vitamin A, vitamin D, and other nutrients.

SANA asks that the USDA reduce the minimum nutrient requirement of protein from 8 grams per cup to 6.25 grams (labeled as 6 grams) of soy protein per 8 ounces, a level authorized by the FDA for a food to carry the health claim, “25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease.”

b. Protein Quality

Although there is not a protein deficiency in the diets of children in America, the need for the protein sources to be high quality is essential for children who obtain most of their protein from plant sources. The Institute of Medicine, Food and Nutrition Board reiterated the importance of protein quality as it measures the ability of the protein to provide nitrogen and amino acid requirements for growth, maintenance, and repair.¹² In its discussion of the Daily Reference Intakes (DRIs) for protein, the Food and Nutrition Board (FNB) reaffirms that the nutritional quality of different proteins should be evaluated using the protein digestibility corrected amino acid score (PDCAAS) as proposed by FAO/WHO in 1991.¹³ In one analysis, the quality of well-processed soy proteins was found to be equal to animal protein in the adults evaluated and in calculations using the PDCAAS pattern for use in children greater than one year of age and in all other older age groups.¹⁴ Similarly, the Food and Drug Administration stated in the preamble to the nutrition labeling proposal published in November, 1991 that it had reviewed the FAO/WHO report and tentatively accepted the conclusion that the protein digestibility-corrected amino acid score method is more appropriate for assessing protein quality foods than animal assays and is preferable for regulatory purposes.¹⁵ FDA subsequently adopted PDCAAS as an appropriate method.¹⁶

¹⁰ U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for America 2005*, Chapter 2: *Adequate Nutrients Within Calorie Needs*, accessed at: <http://www.health.gov/dietaryguidelines/dga2005/document/html/chapter2.htm>.

¹¹ Federal Register/Vol. 71 No. 217/Thursday, November 9, 2006/Proposed Rule. page 65756.

¹² Food and Nutrition Board, Institute of Medicine, *Dietary Reference Intakes for Energy, Carbohydrates, Fiber, Fat, Fatty Acids, Cholesterol Protein, and Amino Acids*. Washington, DC: The National Academies Press, 2005, page 682.

¹³ Joint FAO/WHO Expert Consultation, *Protein Quality Evaluation*. Bethesda, MD: Publication Division of the Food and Agriculture Organization of the United Nations, 1991.

¹⁴ Food and Nutrition Board, 2005, page 689.

¹⁵ Federal Register/Vol. 56/ November 27, 1991/ page 60370.

¹⁶ Federal Register/Vol. 58 No. 3/ Wednesday, January 6, 1993. Accessed at: <http://www.foodriskclearinghouse.umd.edu/FedRegister/FedRegisterVol58PartIV-2079-2205.pdf>

B) Other nutrients specified in the nutrient standard for fortified nondairy beverages (“soymilks”).

SANA questions the reason for including additional nutrients, such as potassium, at levels just slightly above levels naturally found in most fortified nondairy beverages (“soymilks”) currently on the market. The addition of such nutrients, such as potassium at a level of 349 mg, in the minimum nutrient standard to establish equivalency with whole milk does not seem justified when that level is twice the potassium level in one serving of a fruit, such as a medium apple (148 mg of potassium), which is generally the food source of potassium in school meals.¹⁷ Most fortified soymilks currently contain approximately 250-300 mg of potassium. SANA urges USDA to lower the minimum potassium requirement to 250 mg per 8 ounce serving, if a level for potassium is included at all in a nutritional standard.

Other priority nutrients such as iron were not specified, but fortified soymilk provides approximately 1-2 mg of iron per serving. Yet, liquid whole milk does not contain iron, a nutrient low in some children’s diets. In summary, the nutritional standard should be based on the critical nutrients such as calcium, vitamin A, and vitamin D, for which milk is required in the meal patterns.

SANA agrees with USDA’s decision not to establish maximum limits for energy-bearing nutrients in milk substitutes, unless these limits are imposed on fluid milk. However, the soymilk in the marketplace is lower in saturated fat, cholesterol, and sugar than fluid whole milk.

C) Need for consistency between USDA food supplement programs and availability of products.

SANA agrees with USDA that “it is important to be consistent in our definitions of allowable milk substitutes across our Federal nutrition program.”¹⁸ For this reason, SANA has made the same recommendations for the nutritional standard for milk substitutes in both the SNP comments and the comments for the proposed rule on revision to WIC food packages.

D) Use of the term Nondairy Beverage.

SANA suggests that USDA use the term “soymilk” when identifying nondairy beverages from soybeans. The “soymilk” terminology was first used in 1896 by Henry Trimble in the *American Journal of Pharmacy*.¹⁹ In 1913, Li Yu-ying, he received a patent for soymilk in the United States and by 1917 soymilk was produced by J. A. Chard Soy Products in New York City.²⁰ By 1950, soymilk appeared on grocery shelves bottled for national distribution by Vitasoy, and sales of the product known as “soymilk” have steadily increased. The chart below²¹ demonstrates the significant growth of soymilk in the United States, as consumers recognize its health benefits and seek nutritious alternatives to dairy products because of allergies, intolerances, cultural, or religious practices.

¹⁷ U.S. Department of Agriculture, Agricultural Research Service, USDA Nutrient Data. Laboratory. 2006. USDA National Nutrient Database for Standard Reference, Release 19. Accessed at: <http://www.nal.usda.gov/fnic/foodcomp/search/> on October 11, 2006.

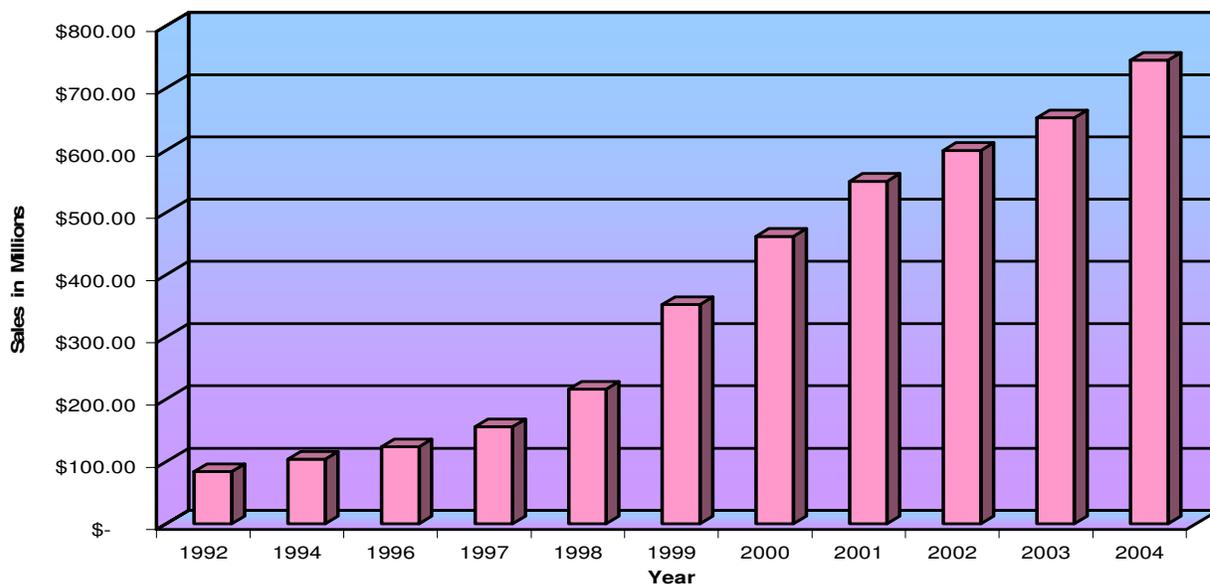
¹⁸ Ibid. page 65755.

¹⁹ Trimble H. Recent literature on the soja bean. *American J. of Pharmacy*. 1896;68:309-13.

²⁰ Piper CV, Morse WJ. The soy bean with special reference to its utilization for oil, cake and other products. *U.S.D.A. Bulletin* No. 439. Dec. 22, 1916. p. 9; Horvath, A.A. 1927. The soybean as human food. Chinese Government Bureau of Economic Information, Booklet Series, No. 3. p. 47.

²¹ Compiled from data in *Soyfoods: The U.S. Market 2005*, published by Soyatech, Inc. and SPINS.

Soymilk Sales in the U.S. 1992-2004



USDA has used the term, “soymilk” in many previous documents and should be consistent in using this term in the proposed rules for the SNP. The nutritional composition of “soymilk” was listed in the 1977 *Home and Garden Bulletin 208*.²² In the 1986, USDA Agriculture Handbook No. 8-16, the authors acknowledge that “soymilk” is produced commercially in the United States and they include a page of nutritional values (including 2.75% protein) for SOYMILK, Fluid. The current National Nutrient Database for Standard Reference has several entries for “soy milk fluid,” “soy milk fluid chocolate flavor,” and “soy milk fluid and calcium-fortified.”²³ USDA includes fortified soy-based beverages as a substitute for cow’s milk in the *Food Guide Pyramid for Young Children, 1999*. Clearly, USDA has recognized the commercial use of the term “soymilk” which would be the common and usual name SNP participants would encounter.

3. Written Documentation and other Administrative Procedures

SANA agrees with USDA’s proposal for simplifying the requirements for documenting the need of students who request a milk substitution.

A) Written Requests

The acceptance of written requests from parents or legal guardians in place of requiring a statement from a medical authority will remove an unnecessary barrier to children receiving healthful sources of calcium and other nutrients through the National School Lunch and Breakfast programs when they don’t or can’t drink milk. The House Committee on Education and the Workforce Report 108—445, page 48 and 49, makes clear that this provision “provides schools maximum flexibility in fulfilling notification requirements and encourages schools to identify ways to make parental notification simple”²⁴ and without

²² U.S. Department of Agriculture, Agricultural Research Service Consumer and Food Economics Research Division. *Home and Garden Bulletin 208: Soybeans in Family Meals*, June 1974.

²³ U.S. Department of Agriculture, Agricultural Research Service, USDA Nutrient Data. Laboratory. 2006. USDA National Nutrient Database for Standard Reference, Release 19. Found at: <http://www.nal.usda.gov/fnic/foodcomp/search/>.

²⁴ Report 108-445. Child Nutrition Improvement and Integrity Act. 108th Congress. House of Representatives. Page 49.

“creating additional paperwork or administrative burdens for parents or schools, as schools already operate under a similar system.”²⁵ This USDA proposed rule fails to mention the Report language “the Committee intends that the privacy rights of students and parents will be safeguarded”. SANA asks that the final rule include such a protection statement.

B) Student Eligibility

SANA requests clarification from the USDA on student eligibility as a “medical or special dietary need.”²⁶ In passing Public Law 108—265, Congress makes clear the intent of the use of the term ‘special dietary needs,’ “the Committee (on Education and Workforce) encourages local educational agencies and school food service personnel to consult regulations and guidance published by the Food and Nutrition Services to understand definitions established for the terms ‘medical need’ and ‘special dietary needs.’^{27,28} These documents make clear that “the term ‘special dietary needs’ among other things, includes the needs of children who do not consume animal products for religious reasons.” To be consistent among food assistance programs, USDA should adopt the same eligibility criteria – severe lactose maldigestion, dairy allergies, or avoid milk because of cultural, religious, or additional reasons for avoiding milk, such as vegan diets, – proposed in the recent rule for revisions of the children’s food packages for the Supplemental Food Programs for Women, Infants, and Children.²⁹

C. State Notification

SANA recognizes that for administrative purposes, USDA “requires that schools inform the State agency (SA) if they choose to offer substitutes for fluid milk other than for children with a disability.”³⁰ **SANA asks that USDA clarify for state agencies that this notification process should in no way deter schools, by creating additional administrative work, from deciding to offer non-disabled students milk substitutions (such as “soymilk”).** Furthermore, “if this information is contained in an existing report, this requirement will be considered met,” as clarified in the House Report 108-445 language on page 49, describing the state notification requirement.³¹

SANA recognizes that section 9(a)(2)(B)(ii) of the NSLA requires schools to “cover expenses incurred in providing allowable fluid milk substitutions that are in excess of expenses covered by program reimbursements.”³² However, should additional fortification for nutrients such as protein and potassium be required for milk substitutes to be authorized for use in the SNP, SANA believes this may create a barrier limiting student’s access to such beverages may be created. Additional fortification will be more costly and not nutritionally justified. Additional expenses could result in schools deciding not to offer milk substitutes (such as “soymilk”) and thus leaving non-milk drinking students not receiving the essential nutrients calcium, vitamin A and vitamin D. To avoid a possible cost increase, SANA urges USDA to adopt reasonable nutrient levels for protein and potassium for milk substitutes.

²⁵ Ibid. Page 48.

²⁶ Federal Register Vol. 71. No. 217. op. cit. page 65753.

²⁷ Public Law 108-265. Child Nutrition and WIC Reauthorization Act of 2004. 108th Congress. June 30, 2004. Section 102. 118 STAT. 731 – 118 STAT 732.

²⁸ Report 108-445. op. cit. Page 48-49.

²⁹ Federal Register/Vol. 71 No. 151/Monday, August 7, 2006/Proposed Rule. page 44800.

³⁰ Federal Register Vol. 71. No. 217. op. cit. Page 65756.

³¹ Report 108-445. Child Nutrition Improvement and Integrity Act. 108th Congress. House of Representatives. Page 49.

³² Federal Register Vol. 71. No. 217. op. cit. page 65765.

Conclusion

USDA should permit a modicum of flexibility in meeting the nutritional equivalency of cow's milk in order to ensure that schools will have access to affordable, nutritionally sound milk substitutes that provide the key nutrients missing in the diets of children not currently drinking milk offered with school meals.

The Soyfoods Association of North American would be glad to work with USDA in compiling and distributing a list of substitutions for fluid milk determined to meet established requirements for nutritional equivalence.

Sincerely,

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