

## CHAPTER VI: RESULTS AND DISCUSSION: CHARACTERISTICS OF DAIRY PRODUCTS AND IDEAS FOR PRODUCT IMPROVEMENTS

### Characteristics of Dairy Products

#### Sensory Characteristics

A predominant theme throughout focus group discussions was that college women valued the different sensory characteristics of foods as an important factor influencing their food choices. Taste was a particularly important sensory characteristic and was first discussed during the *Introductory Ranking Activity*, where the majority of women felt that “taste good” was a priority when choosing foods. Women gave explanations such as: *“I definitely want to have a good, balanced, and lite [meal], but it’s not as important as if it tastes good”*; *“I put taste for 1<sup>st</sup>, because why eat it if it doesn’t taste good”*; *“I put tastes good 1<sup>st</sup>, because I eat most for my mouth and then for my stomach. Like, I love different textures and different tastes...”* and *“I put #1—taste good, because I’m kind of picky. I don’t like to eat stuff I don’t like.”*

Women also mentioned taste of dairy food, with explanations such as the following: *“Cheese—I have to put it on rice. I can’t eat rice without it; it’s so good”*; *“I like [milk] to be thin and I like it to taste like water, because I don’t like the taste of milk”*; and *“Sour cream—Ooo! I just don’t like the taste of it, it’s got that taste.”* These comments suggested to the researcher that taste strongly influenced what they would or would not choose to eat.

Milk was often discussed in each focus group in terms of thickness, especially differences in thickness between whole and lower fat milks. Common explanations that many women gave for drinking lower fat milk, particularly skim, were as follows: *“[Whole milk] is too thick. Yeah—after you start drinking skim and 1%, whole milk is too thick”*; and *“Yeah—anything else (besides skim) is too thick. It, like, will stick to my mouth.”* Other desirable sensory characteristics of milk included the following: *“Milk is*

*nice and cold, though. Like, if I need something cold, though...milk is just there*"; *"I think skim milk stays colder later"*; and *"It's more refreshing—milk."* This indicated to the researcher that the sensory characteristics of milk were satisfying to these women. A couple of women in the WM focus group mentioned that they enjoyed drinking milk when they ate certain foods, as evident by their comments: *"But when you have a brownie, you can't drink "water" (skim milk) with a brownie. You know, you have to drink 2%--at least"*; and *"Yeah, I can just have it (skim) out and have my cookies and still be fine, but whole milk gets warm fast and custardy suddenly."* These practices might also relate to those learned while growing up at home. Barr (1995) reported that high school students' "taste enjoyment" of dairy products was significantly correlated with consumption of these foods in a study of dieting behaviors and concerns about body image in high school students. For milk, fruit yogurt, and ice cream, "taste enjoyment" was significantly associated with intake of the same food. Taste enjoyment scores of most dairy products were not related to dieting. However, higher dieting scores were associated with greater taste enjoyment of skim milk and lesser taste enjoyment of ice cream.

Women discussed the texture and smell of dairy foods that they did not like. This is illustrated by the following comments: *"Cottage cheese is disgusting. The texture...I just can't—don't like even thinking about it. It just makes me crazy"*; *"I don't like cottage cheese. Like, in your mouth, it's ugh—like the texture of it"*; *"I don't like cream soups, either. I don't like having it all creamy"*; and *"I don't like any [dairy foods]. I don't know...the smell of it is bad, I can't stand it."* It was interesting to note that women gave more detailed descriptions of the sensory characteristics of dairy foods that they disliked than they did for dairy foods that they liked. Eddy (1997) found that sensory attributes of dairy products were important to educated elderly women when choosing foods. As with college-age women, elderly women mentioned taste most often when discussing dairy foods they ate.

Women also discussed food choices in terms of what made them “happy” or “feel good,” which tended to be foods that were “sweet.” This was evident in one woman’s remark, *“I put taste good, just cause you don’t feel very happy if you don’t eat good food.”* Some researches have theorized that receptors for sweet taste relay a message to the brain that triggers the release of endorphins that act as opiates, producing soothing feelings (Roach, 1989). Many women seemed to talk about choosing these foods as a “treat” for themselves, as in the following comments: *“And ice cream—I have to have everyday or else I go into some kind of withdrawal. Well, it’s like, such a happy thing, it’s not that it’s milk or whatever, but—yeah, it tastes good and it makes me feel really good, and so I have to have it”*; and *“I eat frozen yogurt now, especially because it’s hot out. You go outside after lunch and you automatically have to have a cone in your hand. It’s cold and I don’t know, it’s just good—soothing.”*

Women expressed dissatisfaction with some dairy food choices in restaurants and dining halls. Women often cited sensory characteristics as the reason as evident in the following statements, *“I never get milk when I’m out. Like, I never order a glass of milk...I’ll never just go get a glass because I’m afraid they’re not just going to get it out of the refrigerator and it’s not going to be as good...it’ll be custardy”*; *“I don’t like eating at places where they give you the carton, because the milk tastes like the carton”*; and *“Well, a lot of cheeses, especially the cheese on top—you let it sit for awhile, it gets hard and it just looks like—you just don’t want to eat it. It has all this nasty stuff on it.”* This suggested to the researcher that the dairy foods available in these places did not always meet women’s preferences.

Women also discussed sensory characteristics in terms of reduced fat and fat free dairy products. Women seemed dissatisfied with some of these products, as evident in the following comments: *“...cause the fat free ones (cheeses) aren’t very good. Not at all,”* *“The cheese doesn’t even melt. It’s like plastic,”* *“...if they had stuff that was low fat that tasted good,”* and *“People don’t always want to go to fat free, because it tastes disgusting...but the low fat tends to taste a lot closer to the regular. It’s not as bland as*

*the fat free.*” Eddy (1997) reported that elderly women had similar opinions towards lower fat dairy products, specifically cheeses, in terms of taste and texture. Guinard and Marty (1997) reported similar results in a study of adolescent females’ food choices. Participants reported that they still preferred regular, full-fat foods significantly more than fat-modified ones.

## **Convenience**

Women most often ranked “convenient” as the least important factor influencing their food choices during the *Introductory Ranking Activity*. However, women mentioned frequently during focus group discussions that they chose foods that were “fast and easy.” Some women stated that they “didn’t care” about “convenient”; it was not important. This might be related to the use of meal plans. Those who used meal plans might not be concerned with convenience, because dining halls are convenient in terms of offering food that is already prepared. Some of the women who felt “convenient” was important gave explanations, such as the following: “*Convenient (1<sup>st</sup>) because usually I’m in a hurry and I need to get something that’s fast*”; “*Convenience (2<sup>nd</sup>) because of the college lifestyle, just running around all the time. If it’s quick, it’s good*”; and “*I want to grab something and go.*” These comments suggested that the women felt they were very busy and that food preparation was not a priority in their daily responsibilities. This finding is similar to results reported by Koszewski and Kuo (1996). The majority of college women in that study rated their food resources as adequate; an exception was time available to prepare food. Eddy (1997) also reported that some educated elderly women mentioned “Easy to Use” as important to their food choices for similar reasons, as indicated by one elderly woman’s remark, “*I’m forever in a hurry, always, we’re always going someplace...and so I’m very busy and I don’t have time to cook though I love to cook...*” (Eddy, 1997). This similarity could be due to the fact that women in both age groups were single (for the most part) and lived alone.

In contrast, some women enjoyed cooking and indicated that “convenient” was not important to them, as illustrated by the following: “*Convenient is 4<sup>th</sup> because if you’re going to take the trouble to eat, you might as well eat something that’s nice*”;

“...and then convenience—I love to cook and bake, so...that’s 4<sup>th</sup>”; and “4<sup>th</sup> is convenient because, I don’t know, I cook all the time, and I don’t really mind cooking, so...” Most of these responses were from women in the WM focus group.

Women discussed dairy foods in relation to convenience, as indicated by remarks such as: “*Pizza, because if you don’t have anything in the house you can order it and it’s usually pretty cheap*”; “*I’m a mac and cheese fan. It’s really easy to make*”; “*Yeah, I eat yogurt a lot, because I’m always on the run and you can get it easily*”; and “*Like, some things in casseroles and subs, you can go to [the food court] and get them, or I wouldn’t eat them. But they are almost too difficult to make. I don’t have the time.*”

Women also discussed convenience in terms of transportation, as the following comments illustrate: “*I would drink a lot of [milk] except it’s such a hassle to go out and get more milk all the time*”; and “*Convenience (1<sup>st</sup>) because, uh, I don’t really want to drive my car all over just to get some decent food.*” Koszewski and Kuo (1996) reported that time available to eat and prepare food, transportation and quality of foods in stores nearby, and quality of foods and selection of foods nearby were significantly correlated with college women’s food consumption.

Women in the WM focus group discussed the convenience of dairy foods in terms of the shelf-life of various products. One woman made the comment, “*[Milk] is also not transportable. Like, if I were to go out for a hike, I can’t just bring a milk or an ice cream. I can bring an apple or a sandwich, but I can’t put cheese on it...*” Another woman responded, “*You can bring yogurt...I’m just saying the stuff you buy at the store—you don’t have to have it in the fridge all the time.*” The first woman still insisted yogurt had to be cold, indicating the need to keep dairy foods cold since they are perishable. Another woman in the JMU group mentioned that the individual packs of cottage cheese reduced spoilage. This product suited her lifestyle as a single adult.

### **Cost**

Cost was another factor that played a role in the women’s dairy food choices, as evident by the following comments: “*I think [dairy foods] are rather expensive,*”

*“Cheese is really expensive,”* and *“A gallon [of milk] is like, \$2.50, but you have to buy it. It’s good for you, so...”*. One woman did mention that she would buy more milk and cheese if they were cheaper. Women did not mention the cost of lower fat products or smaller packages of products. In contrast, Eddy (1997) found that elderly women thought that smaller packages and lower fat products were expensive, as illustrated by one elderly woman’s comment, *“...anything that is made special has a higher price,”* (Eddy, 1997).

As discussed in the previous chapter, women’s concern with the cost of food seemed to depend on their financial situation at college. Women who had meal plans seemed to be less concerned with the cost of food than those without meal plans. The researcher noted that those who had meal plans were not concerned with cost because their parents paid for the plans.

### **Ideas for Product Improvements**

#### **Packaging**

Women offered many suggestions for improving dairy products when asked for their ideas and suggestions for product improvements. These ideas predominantly pertained to improving the convenience of dairy products through packaging. This was evident in the following comments: *“We try to get low fat butter but you have to buy them, in like, packs of 3 or 4 and you’re like, ‘I’m not even going to use but one of the packs,’ so...”*; and *“You know what I hate? When you open those Kraft® singles and you open it and take it out of that plastic wrap they’re each wrapped in, you always tear that top part off. I hate that. They should find a better way to wrap that.”* Another woman mentioned that she would like to buy milk in a size between a half gallon and a gallon so that she would have enough, but not waste it. These comments indicated to the researcher that size of product packages and ability to open them easily were important to this sample of college women. These interests seemed to relate to convenience, an important factor in the lifestyle of college women. Eddy (1997) also found that educated elderly women were interested in small product packages because those women were unable to use all of the product in larger packages before it spoiled. Elderly women also

reported that packages of some dairy products were difficult to open, but this was attributed to “old hands” and declining vision. Although college women did not have these physical disabilities, they did report that some product packages were difficult to open.

A couple of women mentioned that the packaging of some dairy products affected the sensory characteristics of the products. These women explained, “*Maybe if milk were in glass bottles instead of cartons, it wouldn’t taste like carton...*”; and

*“About the packaging, I think it’d be nice if they had something [other than] twist off caps, they always get, like, milk stuck in there and it starts to smell bad before the milk is actually bad. So if they had maybe a flip top or something that was just a lot cleaner that came out so it didn’t start smelling like that. That would be [good]. I don’t know how they could do it.”*

Eddy (1997) reported that elderly woman also suggested the use of screw top lids as a product improvement, although for elderly women it was for easier opening.

Another woman who was from the UVA group discussed the extended shelf-life milk. She wanted to be able to drink the milk before it spoiled, but commented, “*It would be nice if there was a way to extend the shelf-life. Like the extended shelf-life milk is kind of sketchy. It’s kind of yuck, so if there was a way to make it taste better...*”. It seemed this woman liked the idea of an extended shelf-life product but also felt that the quality of this particular product needed to be improved.

### **Product Convenience and Availability**

As discussed previously, convenience was important to this sample of women. Women frequently mentioned throughout the discussions that they chose foods that were “fast and easy.” The importance of convenience was illustrated further by the following comment from one woman in the WM focus group: “*I think overall, in general, the convenience thing. Like, it seems like a little bit more (is offered)...like they put chocolate milk in those little Hi-C box—things...like that was never, they used to not have*

*that, and Polly-O string cheese, like transportable.*” This indicated to the researcher that this woman was aware of convenient items and wanted more of these types of products.

Another product discussed in terms of convenience was milk, and ideas for improvement included the following: *“Maybe if milk were in glass bottles instead of cartons, it wouldn’t taste like carton. You could have vending machines...,”* and another woman responded, *“How weird would that be? Just drinking milk instead of a Coke? Out of convenience, we just drink a Coke.”* This suggested to the researcher that women felt they might choose more dairy foods if products were packaged/ marketed to be more convenient and “easily accessible,” such as those in vending machines.

### **Labeling**

Women were interested in changes in labels on dairy products. One woman from the WM group explained, *“I wish they wrote on like, the milk containers, how much milk you need, like, depending on if you’re so-and-so, how old, or if you’re male or female. Cause I’m always like, ‘Well, that’s enough. I guess I got what I need’.”* Comments such as this suggested that college women read food labels but did not understand them, particularly the Daily Values (DVs) and the Nutrition Facts. Women from the VT focus group discussed nutrient content claims on food labels, as the following indicate:

*“They should have an overall standard for low fat, because a lot of people say low or reduced fat, and they don’t know the difference. Reduced fat doesn’t mean low fat, like you look at Baskin Robbins. And I know because I used to work there, and the ice cream was like 9-10 g fat/serving, and reduced fat or low fat to them is like 7-8 g of fat which is still really high for 1 serving of ice cream. So, I think that if they do have low fat or reduced, they should have an overall standard...”;*

and another woman responded, *“Don’t they have one? Isn’t it like 3 g or less is considered low? And then reduced could be anything...”*. Another woman also remarked, *“Nonfat doesn’t mean fat free. Which is a big misconception. I don’t understand that. I don’t think everybody knows.”* Another woman commented, *“They could inform the consumers through packaging.”* This discussion indicated to the researcher that the women were interested in nutrition information for dairy products but

felt that labeling information was confusing and misleading. What women discussed regarding labels has many implications for nutrition education. In contrast, Eddy (1997) reported that elderly women found expiration dates on food labels difficult to find and read. Elderly women also expressed confusion about “Use By” and “Sell By” labels. College women did not mention anything related to “Sell By” or “Use By” labels. Overall, however, elderly women felt that nutrition information on labels was important to them, whereas college women seemed confused by labeling information.

### **New Product Ideas**

Women were asked to think of ideas for a new dairy product and share these ideas with the group. Their ideas pertained primarily to lowering the fat content of dairy products and included the following: yogurt pops, reduced fat macaroni and cheese (box), cheese pasta (low fat), dairy candies, and a yogurt/buttermilk mix to eat on cereal. Some of these ideas already exist on the market. It was interesting that most of the ideas for new products were presented by women in terms of low fat, going back to the discussion about fat and body image in the previous chapter. Adolescent food choices are often influenced by social pressures to achieve cultural ideals of thinness and gain peer acceptance (Hickman, 1996).

Most of the discussion of new products related to ideas for product improvements. At this point, women discussed how dairy foods in restaurants and dining halls could be improved. Women offered suggestions, such as: “...*I don't like milk out of a carton, so if they had a better variety,*” “*Serve skim milk,*” “*Less cheese in dishes,*” and “*Like, when restaurants served dessert, they would offer, like if they made milkshakes, they'd offer whole and skim.*” These suggestions relate to the availability of dairy foods in restaurants and dining halls discussed in the previous section on college lifestyle. As mentioned previously, women indicated their dissatisfaction with the availability of what is presently offered, especially concerning lower fat options.