

Use of Soy Proteins in Swedish Foods

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ABSTRACT

A positive action program has been instituted in Sweden. A new food law recognizing soy protein as a food ingredient and not an additive was obtained, a discriminatory tax was reduced by 75%, and the image of soy proteins was changed in newspapers and journals. Many soy-containing foods are now on the market as a result of these changes.

INTRODUCTION

Soy protein products were introduced on the Swedish market on a relatively large scale in 1968. Up to that time they had been sold only in health food stores. The first products possessed an inferior flavor and a slow rehydration capacity. Because of these characteristics and the meat industry's fears about possible competition, the products did poorly in the initial years.

Another reason for the poor showing was a special tax (3:50 kr/kg = \$.35/lb) levied on soybean flour and soy protein concentrate in 1969. The tax affected the normal competition between the different soy protein products. (Soy protein isolate was not taxed because it is included in the GATT agreement.)

Food legislation in the 1950's was discriminatory against soy protein-containing products, i.e. a sausage containing only 2% soy protein had to be labeled "soy-sausage" and soy protein had to be listed in the ingredients.

Measures to Facilitate Sales of Soy Protein Products

Most soy protein products were sold to food industries and to the institutional trade for use in meat balls, hamburgers, and other similar items. The sale of soy protein products (mostly textured flour and concentrate) had reached a steady low level, and within a year we found that our customers were hesitant about expanding their use. Therefore, we instituted the following program to "clear the way" for increased use of soy protein products.

We informed the Swedish Food Administration about the effects of vegetable proteins, especially soy protein, so that they would consider vegetable protein primarily as a new unconventional food ingredient, not only a food additive—an expression which in itself has a negative feeling. We explained to the Swedish Department of Agriculture and their special bureaus the future use of vegetable proteins to convince them to reduce the taxes on import and production of such proteins.

We educated journalists and others in the communications field about the role and impact of vegetable proteins in the future. Our hope was that this positive information would filter down to the consumer. We talked to research

and marketing personnel who work for potential industrial customers about the effects and correct uses of soy proteins.

We developed analytical methods and procedures to determine the amount of various soy protein products added to food. (The use of a tracer substance like TiO_2 is not permitted in Sweden.) We introduced packaged consumer goods in order to acquaint the consumers themselves with soy protein and to avoid a negative reaction to ready-made products.

Effects of the Positive Action Program

Effects of these measures were: (A.) The new food law now recognizes soy protein products primarily as food ingredients, not as additives, and the discriminatory name was abandoned; (B.) As a first step, the tax was reduced to 2 kr/kg and a year later to 0.80 kr/kg; (C.) The poor image in the mass media was changed to a correct presentation of soy proteins' functions and value; (D.) A certain sale of packaged consumer goods was achieved and was well received.

Advantages and Uses of Soy Proteins in Sweden Today

As has already been mentioned by many speakers at this Conference, there are three principal reasons for using soy proteins. They are price, nutritional properties, and functional properties. Because meat prices are higher in Sweden than in most other countries, price has been the most striking argument for both consumers and industry. Examples of Swedish meat prices in Sweden are filet, U.S. \$6/lb, and ground meat, U.S. \$2.25/lb. (However, the consumption of meat is also rather low in Sweden compared to that of many other European countries.) Because items like meat balls and sausages are important ingredients in Swedish meals, these products have been especially chosen for marketing soy protein.

Examples of formulations are shown in Tables I and II. Functional properties such as fat and water binding have been especially discussed. As fat binding is a "dirty" word in Sweden today, we have had to show that this is not the effect when textured soy flour is added. On the other hand, the water or meat juice binding capacity is a positive property.

Nutritional properties are of limited importance in Sweden today as the protein level in the diet is relatively high. But it can be important to explain that when 25% of the meat protein is replaced by the same amount of textured soy protein this can be done with no negative nutritional effects. Some typical uses today for textured soy flour in different foods in Sweden includes meat balls, pizza, liver pastes, bread, and doughnuts.

TABLE I

Recipe for Meat Balls

Ingredient	Without soy protein	With soy protein
Mixed minced meat	400 gr	300 gr
Bread crumbs	3/4 dl	3/4 dl
Onion	1 tablespoon	2 tablespoons
Salt	1 teaspoon	1.5 teaspoons
Pepper	1 pinch	1 pinch
Water	2 dl	2.5 dl
Soy protein	—	1 dl
	650 gr	650 gr

TABLE II

Fried Meat Balls

Item	Without soy protein	With soy protein
Minced meat mixture	650 gr	650 gr
Loss in wt at frying	20 %	15 %
Composition of fried meat balls		
Protein	15.5	15.5
Fat	8.5	7.0
Price Sw. kr/kg	14.90	11.50