

From Concept to Market with a Meat-Soy Protein in Dry Sausage

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I would like to point out some aspects of TSP application under the conditions of our meat industry. During the last year and in the course of this year, we have examined the application of textured soy proteins in production of some domestic kinds of dry sausages. Some results of these examinations we reported in the paper presented at the last European Meeting of Meat Research Workers held in Kulmbach. Now, I would like to summarize our results obtained in that field. "Corned beef color," minced TSP produced by "ADM"-USA proved to be the most suitable one for our kinds of dry sausages such as "Sremska" sausage and "Tee" sausage, due to its specific color which corresponds to meat color. Before use, we hydrated this protein to 65% of water, the same percentage of water as in the frozen beef and pork being used in these products. Afterwards, we ground it so as to obtain pieces of about 3 to 4 mm in size. We have established that about 8 to 10% of the total meat content can be substituted by hydrated TSP without negative influence on the quality of finished products. This was proved by comparative examination of experimental and control sausages. Examining some physico-chemical indices, we established that during the whole drying (aging process) weight losses in sausages containing TSP were lower by 2.0 to 2.6% on the average. Experimental sausages containing TSP had somewhat higher quantity of proteins, somewhat lower quantity of fat, and somewhat lower pH values in relation to control samples. They had better appearance, that is, their casing was less or not at all wrinkled. As for taste and odor, we could not

establish any difference between experimental and control sausages. Meat pieces on the cut surface did not differ from ground TSP pieces. Slices of sausages containing TSP were of the same compactness and binding ability as those of control sausages. By measuring the dryness and the consistency, we have concluded that experimental sausages with TSP can be sent to market one to two days earlier. This results in a reduction of time necessary for their production of 5 to 10%.

Results of our experiments have already been applied in regular production of some kinds of dry sausages, whereby our experimental results have been confirmed. Up to present, there have not been any remarks from the market on the quality of these products. In addition, during that period we gained the following experiences: (a) "corned beef color," minced TSP should always be hydrated because the use of dry protein did not give good results (it remained dry and visible); (b) dependent on the relation to frozen beef and pork in the sausage stuff, "corned beef" TSP should be darker or lighter in color so that TSP pieces could completely correspond to meat color; (c) the use of other TSP types of red color (for example, Ham Color and Pink Color) did not show good results, because they considerably differ from the color of the meat pieces used for the production of these sausages.

From an economical point of view, this type of TSP application in dry sausages results in lower cost of stuffs (~3%), lower weight losses (2%) and in reduction of production time (1-2 days).

Vegetable Protein – Tomorrow's Replacer?

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This paper asks the question – do we see vegetable protein as tomorrow's replacement for meat?

I should like to talk very briefly to you about the role of vegetable protein – predominantly soy in this area from our experiences in the U.K. In this, the last session on the last day of our conference, we will all have heard a great deal about the positive attributes of vegetable protein in our diet, and the future prospects. Press coverage for soy in the U.K. is generally titled "New Food of the Future," or something similar, and suggests that we, the vegetable protein industry, are about to infiltrate the meat industry with our new fangled product.

We, as consumers in the U.K., having struggled to survive for centuries on our predominantly meat protein-based diet, are about to be rewarded by the "arrival" of vegetable protein, and we shall immediately make the complete change to a totally soy protein-based diet. Only the minor details remain to be agreed before we can make the change.

How much of the soy protein will we eat in the form of steaks, joints, etc., which of course will be indistinguishable from meat? How much of the soy protein will we eat as mince, pasties, pies, sausages? Again, a perfect match for the products they have replaced – the outdated meat products. Will we make the change overnight, or will we have a gradual transition? How will we solve the nagging little problems?

Unfortunately, for instance, we will have to phase out livestock farming completely, as meat will no longer be required for food, but then we can always keep the animals as pets. Obviously, a lot of farmers will lose their livelihood and the queues of land rovers outside the job centers will become a part of life. But while this may initially cause a bit of a problem, I'm sure we can overcome it, because as we all know, the advantages make it all worth while. The most obvious advantage of making this complete change is that as the products will be completely indistinguishable from the old meat products, we won't have to change the housewife's buying patterns, nor her eating habits, and we won't have all of the problems associated with partial replacement or extensions. And thinking about it, as the products are identical and as the change to soy protein has nothing but advantages, why should we even tell her that we're making the change? It is much more convenient that way, and after all, if we publicized it, she might not understand and not realize that it was for her own good.

Yes, it is far better to make the change completely unannounced, and then perhaps we could mention it a bit later on. With a carefully prepared advertising campaign, I'm sure the housewife would understand and would develop a more modern concept of meat. Butchers and meat processors might be a little reluctant initially, but if we take a strong line with them I'm sure they'd understand