



FATS AND PROTEINS RESEARCH FOUNDATION, INC.

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THE DIRECTOR'S DIGEST
D. M. DOTY
TECHNICAL DIRECTOR

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FPRF "COMBINED" MEETING A SUCCESS

On July 8-9, in Chicago the Research Committee and Board of Directors met together for two days of stimulating discussion and careful planning. Some of the important actions taken at the meeting are summarized below.

1. For the guidance of the Research Committee in selecting and recommending projects, the Board of Directors approved guidelines that would assure allocation of at least 55% of our research funds to long range research.
2. Subcommittees on Proteins, Fats, Nutrition and Miscellaneous will assist the Research Committee and Technical Director in obtaining and evaluating project proposals.
3. A tentative budget of \$351,000 was approved for 1969-70. This is a deficit budget and several worthwhile research projects cannot be initiated unless additional funds can be obtained during the coming year.

The Annual Meeting of the members of FPRF will be held November 17, in Chicago, and will be followed by a combined meeting of the Research Committee and Board of Directors on that day and the following day.

COLLAGEN FERMENTATION

The first year of research on this project by Dr. Jules Porsche and Dr. William Brown has just been completed. Preliminary results were reported in "The Director's Digest" for January, 1969. More recent results may be summarized as follows.

1. The organisms (a mixed culture of two different gram negative rods) grow readily on heat denatured collagen but will not utilize collagen in preference to muscle protein if both proteins are present in the medium.
2. In the experimental batch fermentation process about half of the starting protein (nitrogen) is lost to furnish energy for the growing microorganisms. However experiments indicate that this loss might be greatly reduced by adding a cheap carbohydrate to the medium and/or by using a carefully controlled continuous fermentation process.
3. The cell protein produced by the fermentation contains more than twice as much threonine, valine, methionine, isoleucine and leucine, and 50% more lysine and phenylalanine than the original gelatin (collagen) substrate. Thus the essential amino acid profile of the cell protein is far superior to that of the starting raw material and approaches quite closely the FAO standard.
4. The composition of the collagen fermentation product appears to be at least equivalent, and in some ways superior, to that of yeast cells from petroleum fermentation.

Despite these encouraging results, one must be cautious in forecasting the ultimate success of the research. Studies on continuous culturing to improve yields and simulate industrial processing conditions, investigations on appropriate available substrates, evaluation of the economics of the process, toxicity studies and feeding trials on the finished fermentation product - - these are some of the areas of investigation necessary before the process is ready for commercialization. The research will be time-consuming and costly. But favorable results can lead to vast new and expanded markets for our proteins.

FAT-DERIVED SURFACTANTS IN HERBICIDE SPRAYS

The enclosed reprint describes results from some FPRF sponsored research. The surfactants used in the study were ethoxylated sugar-fatty acid esters.