FATS AND PROTEINS
RESEARCH FOUNDATION, INC.

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TELEPHONE AREA CODE 312 827-0139

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

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No. 88

COLLAGEN DERIVATIVES IN DETERGENTS

You will recall that FPRF is supporting research at IIT Research Institute on the use of various collagen derivatives in heavy duty detergents as soil dispersants and phosphate replacers (Director's Digest No. 76, October, 1970 and No. 83, May, 1971). Some cross-linked collagen derivatives were found to be very effective soil dispersants for water soluble soil but not as effective as carboxymethylcellulose (CMC) for oily soil.

Recent studies on this project have shown the following:

1. The performance of cross-linked collagen derivatives as soil dispersing agents in heavy duty detergents containing a non-ionic active ingredient was improved by using higher molecular weight cross-linking compounds. Even more effective dispersants were produced by reacting the water soluble collagen with relatively high molecular weight organic acid derivatives.

2. In contrast to CMC the effectiveness of these compounds increased with increasing concentration up to at least 14% in the detergent formulation.

3. The action of these compounds as soil dispersants approached but did not equal that of CMC for oily cells. This suggests that combinations of these collagen derivatives with CMC would be superior soil dispersing agents for both water soluble and oily soils.

On the basis of these results the research planned on this project includes:

1. The preparation and testing of additional collagen derivatives as soil dispersants and phosphate replacers.

2. Testing the most promising of these compounds with both water soluble and oily soil on synthetic fabrics as well as cotton fabric.

3. Testing combinations of the best collagen derivatives with CMC and phosphates in heavy duty detergent formulations.

The current furor on phosphates in detergents and the hazards of using some types of materials to replace phosphates makes the present study at IITRI particularly timely. A recent article "Nonionics are set for Cleanup" (Chemical Week, Aug.18,1971) suggests that LAS in non phosphate detergents may be replaced by ethoxylated alcohols (hopefully, tallow alcohols!). If this in fact does occur, collagen derivatives may well find a place as builders in heavy duty detergent formulations because the materials perform better with nonionics than with anionic surfactants.

WE'RE MOVING

You should have received a letter indicating that the FPRF address will change effective November 1, 1971. In case you did not receive this notice, our new address will be:

2720 Des Plaines Avenue
Des Plaines, Illinois 60018
Telephone 312/827-0139

Please change your records to conform to this new address.