FATS AND PROTEINS
RESEARCH FOUNDATION, INCORPORATED
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THE DIRECTOR'S DIGEST
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Technical Director

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May I assume that your lack of comment on "The Director's Digest" indicates your approval? If you have comments or criticisms please feel free to write or call me.

Since we have not yet received a draft of the University of Arizona bulletin describing results of their studies using sucrose tallow glyceride as an adjuvant in herbicide sprays, a summary of this research should be timely and of interest to all of you. Professor E. B. Kurtz and his associates at the University of Arizona compared the effectiveness of three commercial surfactants and three sucrose-ester(tallow)products in herbicide sprays containing 2-4-D as the active ingredient. Field plot trials were made using cotton as the test plant.

The sugar ester products used were SET-1-T-1 and SETH-1 obtained from Colonial Sugars, and T-110 from Ledoga S.p.A., Italy. Using one of the new analytical techniques(thin layer chromatography) the Arizona workers found that SET-1-T-1 and SETH-1 consisted largely of fatty acid esters of sucrose while T-110 contained about 50% sucrose fatty acid esters and 50% mono-, di-, and triglycerides.

All three of the tallow products enhanced the herbicidal activity of 2-4-D more than did two of the commercial surfactants except at the lowest concentration of tallow product used. The third commercial product was the best surfactant at 0.5% concentration but only equally as effective as the tallow products at 0.25% concentration. T-110 consistently gave the greatest enhancement of 2-4-D activity of the three tallow products. The activity of this material was further enhanced by the addition of isopropanol.(Studies are in progress to determine if the addition of chemically modified fatty acids will be as effective as the addition of isopropanol).

Aqueous formulations of T-110 readily dispersed at all concentrations used while aqueous formulations of the other two tallow products could not be dispersed at equivalent concentrations; this made spraying difficult. Some of the formulations formed semi-gels which also made spraying difficult. These results indicate that from all standpoints T-110 should be a superior adjuvant for use in agricultural sprays.

Notes on other FPRF Projects

As indicated in the first issue of "The Director's Digest" and the NRA Newsletter in July, a resume of the Odor Control Project has been distributed to all FPRF and NRA members. You should have this now.

Your Director spent several days at The Theobald Industries in August observing the pilot plant enzymatic rendering operation. Several runs produced high protein meal of satisfactory fat content. Sufficient product will be available soon for feeding tests with calves, poultry and swine.

FPRF supported research at the Eastern Utilization Laboratory has been temporarily interrupted due to the resignation of the Junior and Senior Fellows. Studies on factors influencing protein quality of meat meal will be resumed as soon as qualified personnel can be obtained.

NEWS

The USDA has recently announced the following grant and contract awards for research on fats:

1. A contract to Lehigh University for basic research aimed at the improvement of detergents made from animal fats. The research will be directed by Dr. Albert C. Zettlemoyer, international authority on surface chemistry and adsorption.

2. A five-year grant to the University of Bombay, India, to develop new fat-derived compounds that can be used with soap to improve soap performance in hard water.

3. A three-year grant to Mario Negri Institute of Pharmacology Research, Milan, Italy, to study the effect of surface-active agents(emulsifiers, wetting agents, etc.)on fat absorption and metabolism in laboratory animals.

The next meeting of the FPRF Research Committee will be held Wednesday, October 21, 1964. The Annual Meeting of FPRF and the Board of Directors Meeting will be held on the following day.