FATS AND PROTEINS
RESEARCH FOUNDATION, INC.
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"THE DIRECTOR'S DIGEST"
D. M. DOTY
Technical Director

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REPORT ON MEETINGS OF RESEARCH COMMITTEE AND BOARD OF DIRECTORS

As announced at the meeting on July 6, 1966 the Research Committee reviewed in detail the current projects supported by FPRF and gave careful consideration to a number of excellent proposals for promising new research projects. Since FPRF funds are limited, it was necessary to reject, or postpone action on a number of very promising research proposals.

At the Board of Directors meeting on July 7 the following projects were approved for activation.

1. Factors Influencing the Feeding Value of Animal By-Product Proteins in Rations for Swine - University of Minnesota.
2. Feather Meal in Dairy Cattle Rations - North Carolina State University.
3. Evaluation of the Non-Caloric Advantages of Animal Fat in Feeds - Contractor to be selected.
4. Enzymatic Rendering Studies Using Enzymes with Low Collagenase Activity - Battelle Memorial Institute.
5. Testing of 9-Carboxystearic Acid as an Air-Entraining Agent for Concrete - Robert W. Hunt Company.
6. Market Survey on the Acceptability and Potential Use of Fat-Derived Materials in Concrete - Battelle Memorial Institute.
7. Preparation of a Manual for Odor Control in the Rendering Industry - W. L. Faith.

The Board also approved a Tentative Research Budget of $223,200 for the 1966-67 fiscal year. Final adoption of the budget will take place at the Annual Meeting of the Board of Directors scheduled to be held November 16, 1966 following the Annual Meeting of the Members of FPRF. The Research Committee will meet on November 15.

RESEARCH ON NEW PRODUCTS FROM ANIMAL FATS

Results from the Battelle Memorial Institute project "Investigation of New Processes, Uses, and Products Based on Inedible Animal Fats" continue to look promising, especially in the areas of an air-entraining agent for concrete compounds for waterproofing concrete.

Some of the more significant results follow.

Air Entraining Agent. As indicated previously(Director's Digest, October, 1965), concrete made using 9-carboxystearic acid was superior in salt scaling resistance to that made with some of the current commercial air-entraining agents. Additional experiments under more carefully controlled conditions have confirmed this(Table 1).

Table 1. Salt Scaling Resistance of Vibrated Air-Entrained Concrete Slabs of Various Types

Type of Concrete	Air Entraining Agent	Type of Aggragate	Air Entrained %	Wt. Loss(grams)after Indicated Number of Freeze-Thaw Cycles		
				27	54	81
Plain	9-CSA	Gravel	6.0	3.3	6.0	8.3
	Commercial		5.0	15.0	18.0	20.0
Plain	9-CSA	Limestone	5.5	4.7	7.7	9.7
	Commercial		5.0	17.7	19.4	21.4
Fly-Ash	9-CSA	Gravel	6.0	13.0	15.3	16.3
	Commercial		4.8	8.7	14.0	17.7
Fly-Ash	9-CSA	Limestone	5.6	19.0	24.7	29.0
	Commercial		5.2	29.0	34.3	38.6

To confirm the apparent superiority of 9-CSA, and to make sure that the air entrained concrete will meet ASTM specifications we have asked the Robert W. Hunt Company to test 9-CSA in concrete(see Project 5 in list approved by Board of Directors).

Waterproofing Agents for Concrete. Results show that oleic acid and the silicon derivative from tallow are superior to commercial silicone waterproofing agents and to silicon derivatives of vegetable oils(Table 2).

Table 2. Water Absorption of Mortar Slabs Coated with Different Waterproofing Materials

Coating	Water absorption(%) after immersion for indicated number of days					
	0	3	7	14	28	56
None	.46	9.0	9.4	9.7	9.9	9.7
Oleic Acid	.36	2.4	2.9	3.5	4.3	5.6
Tallow-CS*	.30	2.0	2.5	3.3	3.6	5.0
Linseed Oil-CS*	.53	8.8	9.3	10.0	10.1	10.3
Soybean Oil-CS*	.23	2.2	3.2	3.7	4.7	6.7
Silicone	.34	9.4	10.0	10.3	10.3	10.4

*CS indicates silicon derivative of fat or oil

If these fat-based materials can be commercialized the market potential would be about 45 million dollars annually and 60 million pounds of animal fat would be used each year for their production.