Background Report Reference

AP-42 Section Number: 9.9.1

Background Report Section: 4

Reference Number: 50

Title: Letter from D. Marlin Brandon, California Cooperatrive Rice Research Foundation, Inc., To R. M. Sandrock, Farmers Rice Cooperative., October 22, 1993

#30

(ATTACHMENT 2)

CALIFORNIA COOPERATIVE RICE RESEARCH FOUNDATION, INC.

RICE EXPERIMENT STATION P.O. Box 306 Biggs, California 95917
Telephone: (916) 868-5481
FAX: (916) 868-1730

COOPERATING WITH UNIVERSITY OF CALIFORNIA, DIVISION OF AGRICULTURE AND NATURAL RESOURCES, AND UNITED STATES DEPARTMENT OF AGRICULTURE, AGRICULTURE RESEARCH SERVICE.

AP-42 Section Reference 9.9.1
Report Sect. Reference 4 50

October 22, 1993

Mr. Robert M. Sandrock
Farmers Rice Cooperative
P.O. Box 15223
Sacramento, CA 95851-0223

Dear Mike:

I am pleased to respond to your request for information about rice variety changes in California relative to particulate (dust) emission in harvesting, drying and processing operations since the 1973 crop year. Rice varieties have changed greatly since 1973 because of the Rice Experiment Station variety improvement program that has developed 26 new, improved rice varieties since 1973. Approximately 95 percent of the 1993 California rice acreage is planted to 11 of these 26 new varieties. The following comments about rice variety changes and their influence on dust emission in grain harvesting and handling operations are based on documented evidence and experience.

The predominant rice varieties produced in California in 1974 were tall lodging susceptible varieties (Caloro, Calrose, Colusa, Earlirose) that had pubescent (roughness caused by very small hairs called trichomes) leaves and hulls. The dislodging of the small trichomes in harvesting and handling operations caused copious amounts of dust that was very annoying to people working in these operations. The tall varieties lodged severely (usually more than 50% of the rice acreage was lodged) which made it necessary to take all the straw through the combine resulting in more straw and chaff in the harvested grain. The pubescence of these varieties coupled with lodging resulted in dust emission characteristics in grain harvesting and handling operations in 1974 that differ from those in 1981 and later.

New improved rice varieties grown after 1976 in California were glabrous (smooth leaves and hulls due to absence of hairs or trichomes) resulting in less dust emission in grain harvesting and handling operations than experienced with the pubescent varieties previously grown. More than 80 percent of the 1981 California rice acreage was planted to improved varieties that were both smooth and lodging resistant (semidwarf plant type). The combination of smooth leaves and hulls and the semidwarf plant greatly reduces the amount of dust generated by grain harvesting and handling operations. Reduced dust generation results primarily from the absence of hairs on the grain and straw and less straw taken into the combine resulting in less straw and chaff in the harvested grain. More than 90 percent of the California rice acreage in 1993 was planted to semidwarf, smooth rice varieties developed at the Rice Experiment Station. Our rice breeders purposely developed smooth rice varieties because rice growers and processors wanted varieties that generate less dust in grain harvest and handling operations.

I hope this information is useful for your purposes. Please contact me if you have questions or if we can assist further.

Sincerely,

D. Marlin Brandon

D. Marlin Brandon
Director and Agronomist

DMB/vb