

Sodium Bicarbonate Does Not Reduce the Moisture Content of High Moisture Wheat

UNDER date of February 13, 1945 County Extension Agent Stanley D. Morrill of Ward County suggested to the Experiment Station that a farmer in an adjacent county had had an experience in storing wheat with high moisture content by using soda with the wheat. On further inquiry it developed that the soda used was common baking soda and that it was used at the rate of about 10 to 15 pounds in a 1200 bushel bin. It was reported that wheat stored without the soda on the bottom of the bin caked solid whereas the wheat stored on the top of the bin to which the soda was added came out in excellent condition.

In order to have a more carefully controlled experimental test of this matter, R. H. Harris, Cereal Technologist, was requested to treat samples of wheat of known moisture content with various percentages of sodium bicarbonate. He used two samples of wheat, one "A," having a moisture content of 18.7 percent, which is high, and another, "B," having a moisture content of 14.9 percent, a much lower percentage. Various percentages of sodium bicarbonate were used, as shown in the table which follows, and the wheat-sodium bicarbonate mixture was allowed to stand for seven days at room temperature. The lowest percentage of sodium bicarbonate used, .02 percent, was equal to about 10 to 15 pounds of baking soda for 1200 bushels; the

highest percentage was 100 times that concentration.

The results show, as indicated in the following table, that in the seven days there was no substantial difference in the moisture content of the untreated wheat and the treated wheat, the differences in moisture content being within the limits of error in moisture determinations. Dr. Harris reports that at the highest percentages of sodium bicarbonate the wheat had an undesirable appearance resembling "limed wheats" and an unpleasant odor.

On the basis of the experiment conducted, we are inclined to conclude that the soda used in this particular farm bin was not responsible for the drying out.

EFFECT OF SODIUM BICARBONATE IN REDUCING WHEAT MOISTURE

Treatment			Moisture Content on Grain
Percent			
"A"	1	0.02 Sodium Bicarbonate	18.6
	2	0.04 Sodium Bicarbonate	18.7
	3	0.08 Sodium Bicarbonate	18.7
	4	0.26 Sodium Bicarbonate	19.0
	5	2.0 Sodium Bicarbonate	19.5
	6	No treatment (Control)	18.7
"B"	1	0.02 Sodium Bicarbonate	14.8
	2	0.04 Sodium Bicarbonate	14.8
	3	0.08 Sodium Bicarbonate	14.8
	4	0.26 Sodium Bicarbonate	14.8
	5	2.0 Sodium Bicarbonate	14.9
	6	No treatment (Control)	14.9