

NITROGEN PLACEMENT FOR CEREALS

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During 1966, one field scale experiment was set out in which various fertilizer treatments were applied with the seed, below the seed, and the phosphorus (11-48-0) with the seed and the nitrogen broadcast. The yield data obtained suggested that N placement below the seed and broadcast was superior because of yield depressions occurring when the nitrogen was applied with the seed. Broadcasting the nitrogen in mid June, even with the favorable rainfall, resulted in lower yield increases than obtained by broadcasting at seeding time.

During 1967, trials in which the nitrogen was placed with the seed, side banded and broadcast, indicated that because of the dry conditions occurring this year, the side-banded nitrogen was not fully utilized by the plant. Twenty pounds of nitrogen placed with the seed gave a yield increase of 6.7 bushels. Side-banding resulted in 3.2 bushels and broadcast, 3.9 bushels. The application of 40 pounds of N with the seed resulted in damage, for an average increase of only 4.3 bushels was obtained. Side-banding and broadcast treatments at the same nitrogen levels resulted in similar yields. Again the June broadcast, although resulting in an increase of 3.6 bushels per acre, where 40 pounds of N were applied, was lower than that for the spring applied nitrogen.

THE EFFECT OF STRAW INCORPORATION AND NITROGEN FERTILIZATION ON THE YIELD OF WHEAT

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Straw incorporation trials were conducted on two farmer's fields utilizing University of Saskatchewan equipment. In addition, data obtained by R. Ledingham at Saskatoon, Scott, and Swift Current Experimental Stations has made possible some generalizations concerning the immobilization of nitrogen by straw. In the U. of S. experiments, the addition of one and three tons of straw strongly affected the depth of seeding. The seeding depth in the straw-removed plot was 2.4 inches. The same equipment placed the seed 0.8 inches beneath the ground in the plots receiving three tons of straw. The Rosthern plot showed a general trend of nitrogen deficiency with added straw without added fertilizers. The Grey Wooded plot data was confounded by physical factors in addition to the depth of seeding. Again, however, the yield tended to decrease upon the addition of straw unless nitrogen fertilizers were added.

Because of the dry conditions, the trials conducted on the Experimental Stations showed overall significance only at the Swift Current Experimental Station. The addition of large amounts of straw, however, tended to decrease the yields obtained.

The nitrogen uptake pattern by the growing grain will also be shown.