The interaction of seed placed and side banded phosphorous with nitrogen and potassium chloride fertilizer on the agronomic performance of durum wheat

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Summary

Developing knowledge on the effects of nitrogen, phosphorous, and fertilizer placement on durum yield and quality will permit durum producers to implement crop and soil fertility management strategies geared to, improving grain quality, grain protein, yield and achieving a higher grade for the grain they produce. A study was conducted examining the effect of nitrogen and phosphorous, in a two way factorial on durum yield and quality. Several extra treatments were added to compare the effects of side banded and seed placed phosphorous and potassium on durum yield and quality. There were no significant interactions between the level of nitrogen and the rate of applied phosphate for any of the variables measured in this experiment. The placement of the phosphorous or potassium in the seed row or side banded did affect the yield components except for head density. Plant density decreased as the nitrogen rate increased. Phosphorous and potassium did not affect yield and there was no difference due to placement, side banded verses seed row. There was a curvilinear increased in protein as the rate of nitrogen increase. There was a small decrease in protein as the rate of phosphorous increased. Hard vitreous kernels and midge damage increased as nitrogen increased and smudge decreased as the rate of phosphorous increased. The placement of phosphorous and potassium did not affect the quality of durum wheat. On an Indian Head heavy clay soil with low levels of residual phosphorous, the yield and most quality parameters of durum wheat were not improved by the addition of phosphorous fertilizer.