Article title	Evaluation of Boron Produced As Seed-Core Urea for Urease Inhibition.
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Abstract	Borax (Na2B4O7.5 H2O) and boric acid (H3BO3) were evaluated as urease inhibitors by quantifying ammonia (NH3) volatilization loss under upland and flooded conditions. Boron-enriched urea was produced by two methods – compaction/tableting and seed-core granulation. The NH3 losses from the B products were compared with urea, urea + N-(n-butyl) thiophosphoric triamide (NBTPT) and urea + cyclohexyl phosphoric triamide (CHPT). The greenhouse study was conducted over a 17-day period and a 25-day period for the upland and flooded soils, respectively. The following year the experiment was repeated using freshly made and original products. Ammonia volatilization loss was a major N loss pathway under both the upland and flooded conditions accounting for losses of 34% and 51% of applied urea-N, respectively under the conditions of the experiment. The method of production of urea products containing B did not influence the NH3 volatilization loss. All B seed-core urea products were effective in reducing ammonia volatilization losses; however, when compared with urease inhibitors, NBTPT and CHPT, they were less effective. Under the upland condition, B seed-core urea gave as much as 37% lower NH3 volatilization loss than urea during the first 5 days, compared to only 17% lower volatilization loss after 17 days. Similar results of 37% and 10% lower NH3-N losses were obtained with flooded soil for first 5 days and after 15 days, respectively. Throughout the entire experimental period, losses of ammonia from soil treated with B seed-core urea were significantly lower than losses of ammonia from the same soils with urea applied alone. While there was no decline in the effectiveness of B seed-core urea products, the NBTPT product showed significant loss of activity during the 12-month storage period. Among the B products 0.5% B as boric acid was as effective as 2% B as borax in reducing volatilization losses. The single high rate of urea-N application (200 kg N ha-1) and the absence of a crop in this study may have influenced the effectiveness of B as a urease inhibitor, and most likely resulted in higher ammonia volatilization loss.
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