The Case of the Stunted Corn

A crop consultant was called to visit a cornfield near Minden, Nebraska that had several rows of corn that were severely stunted. On June 21, the consultant visited the field to determine why there was poor growth in some areas. He took the following photos to document the problem. In addition to the poor growth in the affected area, it was clear that some seeds did not germinate or died after germination. The farmer reported that he had applied UAN (urea, ammonium, and nitrate) on April 29. A soil sample was collected at about seed level in the row and results are below (Table 1).

Photo A. The corn stand was reduced in six rows for a short distance.

Photo B. The reduced stand was adjacent to rows with normal growth.

Photo C. A population with good plant growth, shown here, was present right next to the problem rows with reduced stand.

Photo D. The row with large and small corn plants shows the reduced stand (small plants) in a row that was replanted (larger plants) to bring the plant population up. The larger plants survived the initial problem and are progressing in growth.

Photo E. Taken from a stunted row, the shiny soil shows the coulter action from the application of nitrogen fertilizer before planting.

Table 1. Soil analysis results from sample collected on June 21.

1:1 pH	WDRF Buffer pH	Excess Lime Rating	Organic Matter LOI-%	NO_3 inches	NO_3 ppm N	Bray P1 ppm	K NH_4OAc ppm	SO_4 ppm S	Zn DTPA ppm	Fe DTPA ppm	Mn DTPA ppm	Cu DTPA ppm	Ca NH_4OAc ppm	Mg NH_4OAc ppm	Na NH_4OAc ppm
5.7	6.8	None	2.5	0-6	109	45	320	13	4.1	56	22	0.9	1106	240	34

Assignment. Discuss what has caused the area of poor stand in the corn field and provide evidence from the information provided by the consultant.

Nebraska PLANT NUTRITION AND NUTRIENT MANAGEMENT K-STATE

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