

Results of Crop Nutrient Deficiency Photo Contest

Here are the results of judging of entries in the 2006 nutrient deficiency photo contest sponsored by PPI. “We appreciate the efforts of all who submitted entries,” said Dr. Paul Fixen, PPI Senior Vice President and Americas Group Coordinator. “While the classic symptoms of crop nutrient deficiencies are not as common in fields as they used to be, they do still occur. Winning entries this year came primarily from university researchers working under controlled conditions. However, we hope that as the popularity of this contest increases, we will receive more qualifying entries from practitioners in the field.” New contest information will be available in early 2007.

Following are images and descriptions of the first and second place entries in the four designated categories of the 2006 contest: Nitrogen (N), Phosphorus (P), Potassium (K), and Other (secondary nutrients, micronutrients, pH, etc).

Nitrogen



1st Nitrogen deficiency in corn.

Location: Peanut Belt Research Station, Bertie County, North Carolina. Corn planted April 12, 2006; photo date June 16, 2006. Tissue analysis May 22 indicated N at 2.98%.

Entry by Dr. Carl R. Crozier, North Carolina State University; David Hardy, and Brenda Cleveland, North Carolina Dept. of Agric. and Consumer Services, Agronomic Division.



2nd Nitrogen deficiency in corn.

Location: University of Kentucky Research and Education Center, Princeton.

Photo date August 5, 2003, at N study plots. Plants on left received no N, plants on the right received 150 lb N/A at planting.

Entry by Dr. Greg Schwab, University of Kentucky, Lexington.

Phosphorus



1st Phosphorus deficiency in corn.

Location: Peanut Belt Research Station, Bertie County, North Carolina. Corn planted April 12, 2006; photo date June 16, 2006. Growth stage V-9. Tissue analysis May 22 indicated P at 0.12%.

Entry by Dr. Carl R. Crozier, North Carolina State University; David Hardy, and Brenda Cleveland, North Carolina Dept. of Agric. and Consumer Services, Agronomic Division.



Phosphorus deficiency in cotton.

Location: Peanut Belt Research Station, Bertie County, North Carolina. Cotton planted May 3, 2006; photo date July 13, 2006, one week after first bloom. Tissue samples June 28 indicated P at 0.20%.

Entry by Dr. Carl R. Crozier, North Carolina State University; David Hardy, Brenda Cleveland, and Catherine Stokes, North Carolina Dept. of Agric. and Consumer Services, Agronomic Division.

Potassium



Potassium deficiency in soybean.

Location: Simpson, Illinois; Dixon Springs Agricultural Center, University of Illinois. Photo at early pod set, in check plot of long-term study. The K soil test was 100 parts per million (ppm) at beginning of study; deficiency symptoms began to appear in recent years.

Entry by Dr. Stephen A. Ebelhar, University of Illinois.



Potassium deficiency in corn.

Location: Peanut Belt Research Station, Bertie County, North Carolina. Corn planted April 12, 2006; photo date June 16, 2006. Tissue analysis may 22 indicated K at 0.81%.

Entry by Dr. Carl R. Crozier, North Carolina State University; David Hardy, and Brenda Cleveland, North Carolina Dept. of Agric. and Consumer Services, Agronomic Division.

Other



Manganese (Mn) deficiency in soybean.

Location: Craighead County, Arkansas. Photo date July 5, 2006, growth stage V6 to V7. Grown on a Mhoon fine sandy loam with a water pH of 7.2 and soil organic matter of 1.9% in top 4 in. Soil test Mn was 0.7 ppm (M3) and plant tissue Mn was 4.8 ppm. Note the green veins and chlorotic leaves on the Mn-deficient plants.

Entry by Bobby R. Golden, Russ Delong, and Dr. Nathan Slaton, University of Arkansas, Fayetteville.



Sulfur (S) deficiency in canola.

Location: Langdon Research and Education Center, North Dakota. Photo date June 19, 2006. Comparison of S-based P fertilizer to no S applied; most recently expanded leaf comparison from adjoining plots. Research plots of John Lukach.

Entry by Dr. Terry A. Tindall, J.R. Simplot Company, Boise, Idaho.

Summing Up

These photos serve as excellent examples that can be used as references in the field. However, when deficiency symptoms do occur, irreparable yield losses have occurred. Tissue analyses are invaluable for confirming visual deficiency symptoms or for detecting "hidden hunger", when nutrient levels are too low but no symptoms have yet appeared. We hope this contest increases the awareness of proper nutrition and look forward to more great entries next year. **BC**