

Boron in Wheat



Study Details

Date: 2011

Location: Shaanxi, China

Soil: 0.52% organic substance, 18.1 mg/L NH₄-N, 12.6 mg/L NO₃-N, 28.5 mg/L P, 334 mg/L K, 1.89 mg/L B, 1.9 mg/L Zn, 2319.2 mg/L Ca, 228.9 mg/L Mg, 8.7 mg/L S, 0.5 mg/L Cu, 1.5 mg/L Mn

Variety: Xiaoyan 22

Fertilizers: B-Zn fertilizer applied before sowing as base fertilizer at 400 g/mu

Trial design: 3 treatments (control, local farmer practice 50 kg/mu ammonium bicarbonate (ABC) + 50 kg/mu single phosphate (SSP), local farmer practice + B-Zn fertilizer), 4 replications, randomized block design

Results

- As base fertilizer, the B-Zn fertilizer is safe to wheat.
- In comparison with control and local farmer practice, the treatment with B-Zn fertilizer has a little better appearance in tillers number and seed-setting, more green leaf color, healthier plant growth, yield increase of 17 kg per mu (2.6%) in the final harvest. No obvious difference was observed in plant height among the three treatments as well as in the basic seedling stage.
- On the basis of the local farmer practice, in a certain extent, applying the B-Zn fertilizer can promote the development of productive panicle, increase the number of grains per panicle, seed-setting percentage, grain weight and other biological characters. However, the statistical analysis results show that the effects are not significant. Visual observation shows that the treatment with B-Zn fertilizer shows a better appearance in plant vigor at tillering stage.