This study investigated the effect of high humic substance (HS) levels (0, 500, 1000, and 2000 mg HS kg⁻¹) on growth and nutrient concentrations of corn grown on calcareous soils. For these, soil samples were collected from the six different provinces of Turkey. According to the average values, HS levels had no significant effect alone on dry weight, nitrogen (N), potassium (K), calcium (Ca), magnesium (Mg), iron (Fe), zinc (Zn), copper (Cu), and manganese (Mn) concentrations. Soil differences significantly affected dry weight, N, Mg, and Cu concentrations (p ≤ 0.05). Looking at HSxsoil interactions on K, Ca, Fe, and Mn concentrations, it could be seen that there was no effect or that the effect was negative. Only plant Fe concentrations obtained from Konya and Urfa provinces were positively affected from HSxsoil interaction. It was concluded that high level of HS had no or negative effect on corn growth and some nutrient concentration under calcareous conditions.