**Oxidation of micronized elemental sulfur applied by fertigation**

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**Abstract**

The aim of the present work was to study the effect of small applications of elemental sulfur (Sº) by fertigation for adjust soil pH for blueberries production. We hypothesize that Sº application by fertigation will reduce soil pH more rapidly than traditional Sº applications and the quantity of sulfur to apply, because the S will be concentrated beneath the drip emitters where soil moisture conditions remain favorable for rapid transformation of the product to sulfuric acid by sulfur bacteria. To test this hypothesis we carried out two pot experiments in a greenhouse. One was comprised of 12 treatments: 4 levels of sulfur (0, 0.36, 0.72 and 1.44 g Sº per pot and application) and three different soil: sand mixes (1:0, 1:1 and 1:2). Soil sand mixes were placed into 4-L plastic pots. The second experiment was comprised of 6 treatments: 3 levels of sulfur (0, 0.36 and 0.72 g Sº per pot and application) and two pot dimensions (4 and 16 L). The soil used was a Luvissol sandy loam with a pH of 7.3, a CEC of 14.90 meq/100g and an organic matter % of the 2.9. The source of sulfur used was micronized (water dispersible granules) (“Thiovit”); containing 80% Sº (W/W) applied in each experiment twice a week. Pots were irrigated with 2.3 Lh-1 pressure-compensating emitters, positioned in middle of the pots. Nineteen days after the first S º application soil leachate pH decreased between 2.5 to 3 values in the different treatments. Twenty nine days after the first Sº application, in 14 L pots, soil pH decreased significantly, was influenced by Sº rate and was heterogeneous inside wetted bulb. The lowest values of the pH (3.7) occurred in the edge of wetting bulb, in depth 0 - 5 cm. Under the emitter, in depth 0-5 with rate of sulfur 0.36 g Sº/ pot/ application the pH decreased from 7.05 to 4.64.