

The incorporation of elemental sulfur as fertilizer coating material increased yields of wheat crop

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In a preliminary set of field trials, a number of 11 crops of durum wheat (Simeto, Meridiano and Quantrato cultivars) were established in different areas of central and northern Greece and soil fertility levels were determined prior to crop establishment. Sowing and harvesting took place mid November 2015 and end of June 2016, respectively. Each crop (roughly 2-3 acres each) was divided into two parts: one of them served as the reference crop that received conventional fertilization scheme, whilst the other one (the treatment SG-crop) received the same combination of fertilizers additionally coated with 2% elemental sulfur (Sulfogrow® by Sulphur Hellas S.A.).

Six of the fields were containing no calcium carbonate or traces of it, with pH ranging from 6.20 to 7.74. In five of them, all characterized by adequate fertility levels, the yields of the SG-crops presented relative increases from 8% to 27%. In the field characterized by very low soil initial phosphate content coupled with low potassium content, the yield of the SG-crop presented a relative decrease by 11%.

The other five fields were containing moderate or high calcium carbonate, with pH ranging from 7.96 to 8.20. In three of them, those with adequate fertility levels, the yields of the SG-crops presented relative increases from 3% to 8%. The other two cases of this category presented relative decreases in the yield by 27% and 3.5%, respectively. The rhizospheric soil of these cases was characterized by very low initial phosphate content coupled with marginal iron content, whilst in the former one the rhizospheric soil additionally presented a very low concentration of humic substances and very low sand content.