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A FERTILIZER WITH NITRIFICATION INHIBITOR DMPP (3, 4-DIMETHYLPYRAZOL PHOSPHATE) AND UREA AS ALTERNATIVES TO AMMONIUM NITRATE FOR TOMATO CROP IN TUNISIA

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ABSTRACT

The risk of pollution caused by nitrate leaching, the recent undesired (dangerous) uses and the safety issues, all associated with the storage of ammonium nitrate has led to seek an environmentally sound alternatives for this fertilizer. Three nitrogen fertilizers treatments have been tested on season crop tomato: ammonium nitrate (33.5%), urea (46%) and « Entec Solub 16-10-17 » fertilizer which contains 1% of 3,4-Dimethyl Pyrazole Phosphate (DMPP). All fertilisers were applied at a rate of 205 kg N ha^{-1}. Ammonium nitrate improved plant growth more than the two other treatments especially during the first crop month. and so, the trend was reversed in favor of Entec Solub from the 6th cluster. Despite the similar yields in the three treatments, fruit size was smaller in plants fertilized with Entec Solub. And also the advantage provided by Entec Solub at fruit quality multiplied the cost by 1.8 times more than fertilization by urea or ammonium nitrate. The environmental effect of using Entec Solub seems to be reduced by high temperatures. At the same rate of nitrogen, Urea or Entec Solub can be an environmentally sound alternatives to substitute ammonium nitrate and generate similar yields for crop season tomato.

KEYWORDS: Fertilizer, Nitrification Inhibitor, 3, 4-Dimethylpyrazol Phosphate (DMPP), Urea, Ammonium Nitrate, Tomato