

EVALUATION OF ROCK PHOSPHATE WITH ELEMENTAL SULFUR AND AMORPHOUS SILICA IN DRYLAND ALFALFA

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ABSTRACT

The objective of this study is to compare a novel form of rock phosphate fertilizer (0-16-0-4) with elemental sulfur and amorphous silica ('Phosul', ProPeat LLC, Sugar City ID) to industry standard phosphate fertilizers in dryland alfalfa over a 2-year period. 8 treatments with 4 repetitions were assigned to 6.0m² plots in a complete randomized block. Treatments included a low (250 lb/ac), moderate (500 lb/ac), and high (1000 lb/ac) rate of Phosul. Rock phosphate with sulfur (Tiger 90CR Sulphur, Tiger-Sul Products LLC, Shelton CT), rock phosphate without sulfur, monoammonium phosphate (MAP)(13.5-36-0-7) with added sulfur, sulfur alone, and no treatment were the comparison groups. Growth rate and morphological differences were measured weekly before first cutting. Once bloom reached 10% in plots, two 0.1 m² areas were clipped to measure yield across treatments. Samples were dried and weighted to calculate percent moisture. Ten random stems from each plot were dried and ground with a Wiley Mill before nutritive analysis using a FOSS DS2500 analyzer with 'Forage Package'.

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