



## **Foliar spray with potassium nitrate and salicylic acid for improving growth, yield and nutrients uptake by olive trees under salinity stress conditions**

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**Abstract :** A field experiment was conducted at Ras – Sudr, South Sinai Governorate, Egypt located at 29° 32'28" N and 32° 39'25 " E during two successive seasons, 2015 and 2016 on 96 Manzanillo olive tree, of about 8 years old grown on sandy loam soil to study the effect of foliar spray with potassium nitrate (KN) and salicylic acid (SA) on improving growth, yield and nutrients uptake by olive trees under salinity stress conditions . The soil was irrigated with water of 7.85dSm<sup>-1</sup> and with soil paste extract of 8.56dSm<sup>-1</sup>. The experiment was carried out using spilt plot randomized complete blocks design with the main plots being salicylic acid (SA) at 0, 250, 500 and 1000 mg SA L<sup>-1</sup>, and sub –plots potassium nitrate (KN) at 0, 10, 20 and 30 g KN L<sup>-1</sup> with three replicates and two trees per each replicate. The trees were sprayed 3 times; at vegetative stage, beginning of flowering and after fruit setting. All growth, yield and fruits physical and chemical properties, , total chlorophyll and proline contents in leaf and leaf nutrients uptake increased by increasing application of SA and KN either separately or in combinations. The most effective treatments were 1000 mg SAL<sup>-1</sup> and 30gKNL<sup>-1</sup>. Combination of the two treatments was the most effective.

**Keywords:** Foliar spray, potassium nitrate, salicylic acid, olive trees, salinity stress conditions.

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