EFFECT OF SPRAYING ALGATON FERTILIZER ON THE GROWTH AND YIELD AND YIELD COMPONENTS OF SUNFLOWER CULTIVARS Helianthus annuus L. UNDER DIFFERENT TILLAGE SYSTEMS

□ PDF (USD 30) (https://www.ikprress.org/index.php/PCBMB/article/view/5439/5052)

PDF (INR 2100) (/index.php/index/article-purchase-indian-customers)

Published: Sep 22, 2020

Page: 123-134

MARWAN NOORI RAMADHAN

Department of Agriculture Machines and Equipments, College of Agriculture, University of Basrah, Iraq.

MUHAMED AUDA KALAF AL-ABODY

Department of Field Crops, College of Agriculture, University of Basrah, Iraq.

SADIQ JABAR MUHSIN

Department of Agriculture Machines and Equipments, College of Agriculture, University of Basrah, Iraq.

Abstract

Field experiment was conducted during the spring season 2020 at Al-Huwair area, north of Basra Governorate, Iraq with the aim of knowing the effect of spraying three concentrations of Algaton fertilizer namely (0, 2, 4 and 6 ml l⁻¹) and tillage system, on the growth and yield of three varieties of sunflower, namely (Euroflor, Shumos and Luleo).

The conventional tillage system recorded higher mean of plant height, stem diameter, leaf area, head diameter, number of seeds per head, weight of 1000 seeds, seed yield and oil percentage of 151.55 cm, 1.98 cm, 0.42 m^2 , 16.97 cm, 1120.67 seed head⁻¹, 65.14 g, 3244.70 kg ha⁻¹ and 32.85% respectively.

Luleo cultivar recorded the highest mean of plant height, stem diameter, leaf area, head diameter, yield components, seed yield and oil percentage.

Al-Taey DKA, Imad JC, AL-Naely, Kshash BH. A study on effects of water quality, cultivars, organic and chemical fertilizers on potato (Solanum tuberosum L.) growth and yield to calculate the economic feasibility. Bulgarian Journal of Agricultural Science. 2019;25(6):1239-1245.

Hasan AM, Mohamed Ali TJ, Al-Taey DKA. Effects of winter foliar fertilizing and plant growth promoters on element and carbohydrate contents on the shoot of navel orange sapling. International Journal of Fruit Science. 2019;19(1):1-10.

Manea AI, AL-Bayati HJ, AL-Taey, DKA. Impact of yeast extract, zinc sulphate and organic fertilizers spraying on potato growth and yield. Res. on Crops. 2019; 20(1):95-100.

Khan W, Rayirath UP, Subramanian S, Jithesh MN, Rayorath P, Hodges DM, Critchley AT, Craigie JS, Norrie J, Prithiviraj B. Seaweed extracts as biostimulants of plant growth and development. Journal of Plant Growth Regulation. 2009;28(4):386-399.

O'Dell C. Natural plant hormones are biostimulants helping plants develop high plant antioxidant activity for multiple benefits. virginia vegetable, small fruit and specialty crops. 2003;2(6):1-3.

Shaktawat RP. Effect of irrigation and nitrogen on growth and yield of sunflower. Indian J. of Agric. Sci. 1999; 69(8):567-569.

Jaafar MN, Stone LR, Goodrum DE. Rooting depth and dry matter development of sunflower. Agronomy Journal. 1993; 85(2):281-286.

Battacharyya D, Babgohari MZ, Rathor P, Prithiviraj B. Seaweed extracts as biostimulants in horticulture. Scientia Horticulturae. 2015;196:39-48.

Yousif AY. Effect of foliar fertilizer (Algaton) in growth characters and oil yield and seed yield of sunflower Helianthus annuus L. var (Zahrat-al Iraq). Tikrit Journal for Agricultural Sciences. 2011; 11(3):102-109.

Karthikeyan K, Shanmugam M. Yield and oil content of peanut (var. TMV-7) and sunflower (var. Co-2) applied with bio-stimulant AQUASAP manufactured from seaweed. African Journal of Agricultural Research. 2015;10(25):2537-2543.

Sahuki MM. Sunflower produced and improved. Ibaa Center for Agricultural Research. Baghdad, P.O. 1994;346.

AOAC. Official methods of analysis, 13th edn. Association of official Analytical Chemists. Washington D.C. 1980;1015.

Abad Make SA. Respons of Four Sunflower Genotype (Helianthus Annuus L.) to different planting dates in south area of Iraq/Basrah. M.S. thesis, University of Basrah, Iraq. 2018;75.

Yousif AY. Effect of foliar fertilizer (Algaton) in growth characters and oil yield and seed yield of sunflower Helianthus annuus L. var (Zahrat-al Iraq), Tikrit Journal for Agricultural Sciences. 2011; 11(3):102-109.

AL-Ubeidi AM, AL-Rashedy SH, Abdul-Jabar S, AA. Effect of the different seaweed extract (Seamino) concentrations on growth and seed chemical composition of two wheat varieties. Rafidain Journal of Science. 2012;23(2):100-113.