British Journal of Global Ecology and Sustainable Development
Volume-12, Jan., 2023
ISSN (E): 2754-9291

EFFECT OF SPRAYING WITH ASCORBIC ACID AND TOCOPHEROL ON THE GROWTH AND YIELD OF BREAD WHEAT, TRITICUM AESTIVUM L.

[1]Asmaa N. Ali; [2]Abdulameer R. Obaid
[1,2]Field Crops Department, College of Agriculture, University of Basrah, Iraq
_abdlulameer68@gmail.com

Abstract

A field experiment was carried out at the Agricultural Research and Experiment Station affiliated with the College of Agriculture - University of Basra during the winter of 2021-2022. To study the response of growth and yield of bread wheat to spraying with ascorbic acid and tocopherol. The study included spraying four concentrations of ascorbic acid 0.150. 300. 450 mg l^{-1} was given the codes A0, A1, A2, A3, and four concentrations of tocopherol acid were sprayed, which are 0. 100. 200. 300 mg l^{-1} has been given the symbols T0, T1, T2, T3. The experiment was applied according to a randomized complete block design (R.C.B.D) using a factorial experiment method with three replications, where wheat seeds (Bohooth-22) were sown on 15.11.2021 at a seeding rate of 140 kg ha^{-1}. The harvest took place on 15.04.2022. The results of the statistical analysis showed a significant effect of the concentrations of spraying with ascorbic acid at a concentration of 300 mg l^{-1} and a concentration of 450 mg l^{-1} in most growth characteristics and yield, as it recorded the highest average at a concentration of 300 mg l^{-1} in terms of the number of days from 50% flowering to full maturity, the flag leaf area, tillers number, and grains number per spike, which amounted to 46.59 days, 40.47 cm^2, 499.4 tillers m^2, and 44.70 grains of $spike^{-1}$, while the concentration was 450 mg l^{-1} has the highest average characteristic of the number of spikes per square meter and the total grain yield, which amounted to 496 spikes m^2 and 6.14 Meg ha^{-1}. As the results showed, when spraying with tocopherol acid at a concentration of 200 mg l^{-1}, a significant increase in the average number of days from 50% flowering to full maturity, the flag leaf area, tillers number, spikes number of m^2, and grains number per spike, which amounted to 48.25 days, 40.14 cm^2, 509.4 tillers m^2, 469 spikes m^2, and 45.83 grains $spike^{-1}$, while the concentration recorded 300 mg l^{-1} had the highest average grain yield, which amounted to 5.52 Meg ha^{-1}. The interaction between ascorbic acid and tocopherol had a significant effect on some yield characteristics, as it gave at a concentration of 450 mg l^{-1} of ascorbic with a concentration of 200 mg l^{-1} of tocopherol the highest average of the number of spikes per square meter and the total grain yield, which amounted to 536 spikes m^2 and 6.75 Meg ha^{-1}.

Introduction

Wheat crop (*Triticum aestivum* L.) belongs to the Poaceae family. It is one of the important grain crops and is considered one of the most important crops at the global level, as it ranks first in the ranks of food crops, followed by yellow corn and rice. It

Journal Zone Publishing, Ilford, United Kingdom