International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.9, No.09 pp 132-139, 2016

Effect of bio-fertilization and Nitrogen level on yield, chemical constituents and Nitrogen use efficiency on two wheat cultivars grown under calcareous soil conditions

[1]Elham, A. Badr*, M.H.M. Afifi[1] and Camilia ,Y.EL-Dewiny[2]

1.Field Crops Research Dept., National Research Centre, Dokki, Giza, Egypt.
2 .Soil and Water Use Dept., National Research Centre, Dokki, Giza, Egypt.

Abstract : Field experiment was carried out at the Experimental Farm of Apis secand area village in Alexandria, during (2013/2014)and (2014/2015) winter season. The aim of the present work was to evaluate the influence of N-fertilizer levels (zero,50, 100 and 150 kg N/fed) applied alone or with bio fertilization (cerilaline) on plant growth of two wheat cultivars in calcareous soil($caco_3$22%). The obtained results showed that: Gemeiza 7 cultivar surpassed Sakhai93 in plant height (cm),flag leaf area(cm), dry matter (g/ m^2),no. of spikes/m^2(grain, straw, biological yield(ton/fed),weight of 1000 grain (gm)and chemical analysis of grain (N,P,K and protein (%)excepted for harvest index(%).Application of mineral fertilizer up to increase 100kg/fed increase wheat parameters yield characters and macronutrient concentration in grains. Application of bio fertilization led to increase the studied parameters in comparison with non- inoculation treatments. Using of the bio fertilizer enhanced Plant height (cm), Flag leaf area (cm^2), Dry matter (g/m^2) and No. of spikes (m^2).Inoculation with bio fertilizer high significantly increased wheat grain yield from (1.45 to 1.55) ton/ fed. For Gemeiza 7 and from(1.34 to 1.43) ton /fed for Sakha 93.The analysis of grain revealed that N, P ,K and protein contents were increased when inoculated with bio fertilization. It could be concluded from this study that. Wheat bio fertilization with cerialine under calcareous conditions caused marginal increases in growth or yield parameters when higher N levels adopted. Also, Wheat cultivars differed in their ability to use N unites and Sakha-93 cultivar possessed greater ability to produce greater units of grains and biological (grain +straw) per N unite used compared with Gemeiza 7 - cultivar

Key Words: Fertilization- *Azospirillum lipoferum* - *Bacillus polymxa* - protein content - Wheat (*Triticum aestivum* L.).

***** *****