

**ABSTRACT** Chemical fertilizers are costly, not easily available and caused pollution and soil degradation. They have some toxic chemicals. Algae will be used as bio fertilizer due to its cost effective, eco-friendly and sustainable raw material in climate. For farmer, algae are best, cost effective fertilizers. Algae are easily available and can be used as fertilizer to get its benefits. Algae cause eutrophication due to its high concentration in polluted water. Algae blooms are wasted and become harmful. Therefore, the present study of fresh water algae will be more effective in field of agriculture. The experiment was conducted in phycology lab, Department of Botany, Government College university Lahore and in field (Botanical garden, GCU Lahore). In this study, wheat *Triticium aestivum* (FSD-08 and AKBAR-19) was grown while using fresh water algae as bio fertilizer and examined its impact as bio fertilizer. In first step of my research, I took 30 petri dishes, 15 for each type (FSD-08 and AKBAR-19). In vitro experiment by using algae as bio fertilizer, seeds of both varieties of wheat were grown in petri dishes on blotting paper and examined the growth of seedling. In field experiment, 30 pots, 15 for each type (FSD-08 and AKBAR-19) of wheat were used. Pots were assigned 25%, 50%, 75%, 100% according to of algal concentration application. Parameter like GP, GI, GE, MGT and SVI were measured. In petri plates, both varieties (Fsd-08 and Akbar-19) maximum chlorophyll content was observed in 100% concentration. In fsd-08, Germination percentage was very good in 50% concentration algal extract. 75% algal extract also showed good results. All treated plants showed better than control in plant height. In fsd-08 Plants showed much growth in 100% concentration. 25% concentration showed least growth. 75% and 50% concentration showed good growth of plant. Control group showed less growth as compared to 75% and 50 % concentration. Plants showed much growth in 75% concentration. 25% concentration showed least growth.75% and 50% concentration showed good growth of plant.