

Third Article(Common with other inside the specialization - Published).

Response of black cumin (*Nigella sativa* L.) plant to spraying of algae extract (*Cladophora glomerata*) under newly reclaimed soil condition.

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SUMMARY

Field experiment was carried out in the Experimental farm, Faculty of Agriculture, Fayoum University, during two seasons of 2013/2014 and 2014/2015 to investigate the effect of algae extract (*Cladophora*) spraying at concentrations 0, 2.5, 10, 15, 20, 25, 30% on growth, seed yield and fixed and essential oil of black cumin plants grown under newly reclaimed soils. The obtained results showed that the spraying black cumin plants with algae extract led to improve plant growth and yield characters expressed as plant height, number of branches, fresh and dry weights of herb plant⁻¹ and number of capsules plant⁻¹. Also, chemical compositions as well as, N, P and K percentages, chlorophyll a and b, carotenoids, total carbohydrates and fixed and essential oil %. Finally, it could be recommend to treating black cumin plant by spraying the plants with algae extract (*Cladophora*) especially, the concentrations 15 and 20% to achieve the best results regarding vegetative growth, seed yield, chemical composition and fixed and essential oil% of black cumin plant under newly reclaimed soils.