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Agrochemical Studies on *Dianthus caryophyllus* L. Grown in Egypt

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Abstract: Through our intensive study to detect new sources of absolute essential oils under conditions of Egypt we decided to evaluate the carnation (*Dianthus caryophyllus* L) absolute essential oils content *cv.* *Enfant de Nice* as a new source of absolute oil in Egypt. Also, to study the effect of nitrogen and potassium fertilizers at different rates on the yield of carnation absolute essential oil. Data showed that, nitrogen and potassium fertilizers had significant effects on growth characters and absolute oil yield of carnation during growing seasons. The constituents of carnation absolute essential oils isolated from flowers were identified by GC and GC-MS. Seventeen compounds were identified in the carnation absolute oil. They represent approximately 80.1 %. Eugenol 15.29 % and Benzyl benzoate (14.12 %) were found as the major constituents of carnation oil. The carnation absolute essential oil was characterized by its high content of calamene, benzyl salicylate, limonene and elemol.

Keywords : *Dianthus caryophyllus* L, Solvent extraction Essential oil, Concrete, GC-MS, Constituents, Eugenol, Benzyl benzoate. Nitrogen, Potassium, fertilization.

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