

EFFECT OF GAMMA IRRADIATION ON GROWTH AND FLOWERING OF *LATHYRUS ODORATUS*.L

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ABSTRACT

This experiment was carried out for two successive seasons (2005/2006 and 2006/2007) to study the possibility of inducing some variations in vegetative growth and flowering of *Lathyrus odoratus*, L. Dry seeds were subjected to gamma rays at "zero, 1, 2, 4, 8, 16, 32 and 64 Krad". Results showed that, gamma rays induced some variations in germination, vegetative growth, flowering pigments and total protein bands contents. Treated plants with gamma rays at 1&8 Krad significantly increased germination% and rate. Whereas gamma rays at 4 Krad significantly increased plant height, number of branch, fresh and dry weights of roots, Also found that 8 krad caused a significant increments in stem diameter, leaf number and area, fresh and dry weights of vegetative growth in both seasons. It was also found that treated *Lathyrus odoratus*, L with (control) hastened flowering date, while the number of flower significantly increased with 16 krad. So found that 4 krad significantly increased fresh and dry weights of grabs & dry weight of seeds. Mean whil using 4 or 8 Krad significantly increased flower age on plant. Whereas, treated plants with 2 krad significantly increased chlorophyll a and b while carotenoids increased with 4 krad. Treated plants with 1 & 4 krad of gamma rays significantly reduced protein bands from 17 (control) to 11 bands. Finally gamma rays at 4 & 8 Krad enhanced most parameter in *Lathyrus odoratus*, L.

INTRODUCTION

The much loved sweet pea (*Lathyrus odoratus*) is a vestile plant in the garden grown up as wall fence of another plant, it reaches a height of up 2 or 3 m. It can be grown up pea sticks in the vegetable grown with –our support in mixed annual borders-dwarf varieties leaf most effective alongside traditional cartage garden plants as darkias candytuft and cornflowers. The pea like appear in early summer and provided all dead bloom are removed immediately will continue until early autumn. They come in an enormous range of colours reds pinks, salmons and white either one colour or bicoloured. Most are second, some more than others. saw the seeds in boxes or pans of seeds compost in early antumm or early spring. The most information on the effect of radiation (Gamma rays) on (*Lathyrus odoratus*) have been made of at the flowering plant to indicate that gamma irradiation at low doses was reported to stimulate plant growth. However, treatment at

high doses induce morphological variations to several ornamental plants such as *Datura metel* (Hussein *et al.*, 1995); *Hibiscus sabdariffa* "El-Sherbeny *et al.*, 1997", *chamomila recutita* (Youssef and Moussa 1998) and *Solidago altissima* (Sayed *et al.*, 2005). Moreover Gamma radiation treatments exhibited a pronounced effect on concentration of some biochemical constituents, such as pigments, indoles and phenol isolated from ornamental plants, such as carnation (El-Shafie *et al.*, 1987). *Tagets erecta*, *Zinnia elegans* and *Callistephus chinensis* (Zaharia *et al.*, 1991), gladiolus c.v. Peter Pears and Mascagni (El-Esawy 1995), *Delphinium ajacis* and *Mathiola incana* (Noby, 2002) *Calendula officinalis* and *Chrysanthemum carinatum* (Youssef 2007). This investigation aimed to study the effects of different concentrations of gamma irradiation on *Lathyrus odoratus* to induce some variations in vegetative growth and flowering.