RESEARCH ARTICLE

TOXICITY INDUCED BY PROPHENOPHOS AND CHLOROPYRIPHOS IN *LATHYRUS SATIVUS* L.

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Abstract: Dry seeds (moisture content: 3.22%) of grass pea (*Lathyrus sativus* L.; family: Fabaceae) are treated with different doses of (0.05, 0.1 ,0.2 and .03 percent, 3h) of pesticides namely Prophenophos (common name:Carina50) and Chloropyriphos (Dursban), and attributes like seed germination frequency, seedling length, mitotic index, chromosomal aberrations and total protein and soluble sugar content have been analyzed. The objective of this work is to foresee the extent of biological damages caused by the chemicals, which may enable to administer appropriate doses that cause lesser environmental hazards. Results have been analyzed.

Keywords: Pesticides, Chromosomal aberration, Biological damage, Environmental hazards

REFERENCES

Abdelsalam, A.Z.E.; Hassan, H.Z.; Badawy, F.M.I. and Abdel-naby, W.M. (1993). The mutagenic potentialities of three pesticides on three biological systems.*Egypt J. Genet*.Cytol.**22**: 109-128.

Abdelsalam, A.Z.E.; Hassan, H.Z.; El- Domyati, M.; Eweda, M.A.; Bahieldin, A and Ibrahim, S.A. (1993). Comparative mutagenic effects of some aromatic compounds using different eukaryotic systems. *Egypt J. Genet*.Cytol.**22**: 129-153.

Ahluwalia, K.B. (1985). Genetics. Published by New Age International Pvt. Ltd. New Delhi.

Ali,M.(2007). Text Book of Pharmacognosy(ED II). Published by CBS Publishers and Distributers, New Delhi, pp.442-459.

Ateeq, B.; Abdul, F.M. and Nimat, A.M. (2002). Clastogenicity of pentachlorophenol 2,4-D and Butachlor evaluated by *Allium cepa* root tip test. *Mutation Research***514**: 105-113.

Auerbach, C. (1976). Mutation Research:Problems, results and perspectives. Chapman and Hall, London,pp.540.

Badr, A. (1983). Mitodepressive and chromotoxic activities of two herbicides in *Allium cepa.Cytilogia***48**: 451-457.

Datta, A.K. and Biswas, A.K. (1983). X-Ray sensitivity in *Nigella sativa* L. *Cytologia* **48**: 293-303.

Datta, A.K.; Biswas, A.K. and Sen, S. (1986). Gamma radiation sensitivity in *Nigella sativa* L. *Cytologia* **51**: 609-615.

Gisselsson, D.; Jonson, T.; Yu, C.; Martins, C.; Mandah, N.; Wiegant, J.; Jin, Y.; Mertens, F. and Jin, C. (2002). Centrosomal abnormalities, multipolar mitosis and chromosomal instability in head and neck tumors with dysfunctional telomerases.*British J. of Cancer* **87**: 202-207.

Gray, L. H. and Read, J. (1950). The effect of ionizing radiation on broad bean root. Part VII. The inhibition of mitosis by alpha radiation. *British J. of Radiol*.**23**: 300-303.

Kihlman, B.A. (1966). Action of chemical on dividing cells.Prentice Hall, Englewood Cliffs, N.J.,pp.260.

Konzak, C.F.; Nilan, R. A.; Wagner,J. and Foster, R.J. (1965).Efficient chemical mutagenesis. *Radiation Bot.* **5**(suppl): 49-70.

Lowry, O.H.; Rosebrough, N.J.; Farr, A.L. and Randall, R. J. (1951). Protein measurement with phenol reagent. *J. Biol.Chem*. **193**:265-275.

Mukherjee, K.K. and Basu, R. N. (1979). Effects of X-Rays on water soaked seeds of *Beta nalonga*. *J. Cytol. Genet*. **14**: 46-49.

Sadasivam, S. and Manickam, A. (1992). Biochemical methods for agricultural sciences. Wiley Eastern Ltd., New Delhi. pp. 11-12.

Singh, B.B. (1974). Radiation induced changes in catalase, lipase and ascorbic acid of safflower seeds during germination. *Rad. Bot*. **14**: 195-199.

Sparrow, A. H. (1961). Types of ionizing radiations and their cytogenetic effects. National Academy of Sciences Research Publication no. 891.

Sreedevi, S. and Bindu, S. (2004). Cytotoxicity of Alluminium sulphate on root tip cells of *Allium cepa L. J. cytol. Genet*. **5**: 77-82.

Stewenius, Y.; Jin, Y.; Ora, I.; Kraker, de J.; Bras, J.; Frigyes, A.; Alumets, J.; Sandstedt,B.; Meeker, A. K. and Gisselsson, D. (2007). Defective chromosome segregation and telomere dysfunction in aggressive Wilms' tumors. *Clinical Cancer Research* **13**: 6593.

Yuzba Sioglu, D. (2003). Cytogenetic effect of fungicide Afugan on the meristematic cells of *Allium cepa L. Cytologia* **68**: 237-243.

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