

# MORPHOLOGICAL AND BIOCHEMICAL STUDIES IN HEALTHY AND INFECTED PLANT PARTS OF *TRITICUM AESTIVUM*

\*Ajay Kumar Pundir and Amita Shishodia

Department of Botany, Dolphin (PG) Institute of Biomedical and Natural sciences, Dehradun,  
(Uttarakhand)- 248001

Email: drajaykumarpundir08@gmail.com

Received-21.11.2014, Revised-04.01.2015

**Abstract:** Pollen morphology is of great significance particularly in plant taxonomy. Results of present investigation revealed the effect of infection on the uptake rates of total N and P and its distribution in selected plant parts clearly define the nutritional aspects and role of macronutrients and pigments in growth and development. Our observation indicates that non-acetolysed pollen grains of *Triticum aestivum* show reduction in size as compared than that of acetolysed pollen grains. Likewise total N, P and chlorophyll content uptake and its distribution in plant parts decline in infected plant parts as compared to healthy plant parts as in stem, leaf, anther & pollen grains.

**Keywords:** Wheat, Pollen, Grain, Nitrogen, Phosphorus, Chlorophyll

## REFERENCES

- Allen, R.J.L.** (1954). The estimation of phosphorus. *Biochem. J.* 34 pp-858-865.
- Arnon, D.I.** (1949). Copper enzymes in isolated chloroplasts polyphenoloxidase in *Beta vulgaris*, plant *physiol.* vol 24 p1-15.
- Bhargava, S.** (2006). "Studies on the effect of lead on some selected crops", Ph.D. thesis submitted to C.C.S. University Meerut.
- Bhat T.A., A.H. Khan, Shaba Praveen and F.A. Ganai** (2006). Studies on the effect of EMS on meiosis and pollen fertility in *Vicia faba* L. *Adv. Plant science* 19 (1) p-243-247.
- Datta K.S. & K.D. Sharma** (1990). Effect of chloride and sulphate types of salinity on characteristics of chlorophyll content, photosynthesis and respiration of (*Cicer arietinum* L.) *Biol. plant*, 32 p-391-395.
- Dhingra, H.R. and T.M. Varghese** (1999). Effect of abiotic stress on pollen fecundity and its implication in crop improvement programme. *Journ. Ind. Bot. Soc.* 78: p-171-202.
- Divya Jain, S.** (2003), "Phycological studies of iron as a nutrient on crop plants". Ph.D. thesis submitted to C.C.S. University Meerut.
- Erdmann, G.** (1952). Pollen morphology and plant Taxonomy. Angiosperms, Vitaceae, The chronica Botanica Co. Waltman Mass ,USA, p-450-451.
- Jensen, W.A.** (1962). Botanical histochemical ,Freeman San Francisco.
- Nair P.K.K. and Sharma M.** (1965). Pollen morphology of Liliaceae, *J. Palynol.* I p-38-61.
- Nagy P.** (1962). Fertilization studies on pear varieties kersel kozlum, *Sect. c.* 53, c.(3): p-27-45.
- Nagiyan, P.** (2004), "Studies of heavy metal pollution with particular reference Rakesh chemical effluent discharge and polluted river water. A Ph.D. thesis submitted to CCS University Meerut.
- Rawat S.S. G.S. Paliwal & K.P.S. Phoget** ( 2004). Studies on horal Biology in peach grown under subtropical condition in the hills II pollen studies, receptivity of stigma, pollinating agent mode of pollination. *Adv. plant science* vol. 16 (11) p-609-618.
- Reshu** (2006). Comparative studies of heavy metal pollution and road side pollution with particular reference to cadmium on certain legumes and cereals". A Ph.D. thesis submitted to C.C.S. University Meerut.
- Sampat S. and K. Ramanathan** (1957). Pollengrain size in *Oryza sativa* *Journ. Ind. Bot. Sci.* vol 37 p-222-225.
- Sheeba and M.J. and B. Vijjayavalli** (1998). Pollen morphological and foliar epidermal studies on *Scilla indica*, (wt) Baker (Liliaceae) *J. Ind. Bot. Soc.* 77, p-125.
- Singh N. and Pokhriyal TC** (2005). Studies on nitrate reductase activity and nitrogen content in relation to seed source variations in *Dalbergia sissoo* seedlings". *Journal of Tropical Forest Science*, Vol. 17 Issue 1, p-127.
- Singh, V.** (2002). Effect of molybdenum on nodulation and biochemical changes of some legumes crops". A Ph.D. thesis submitted to C.C.S. University Meerut.
- Snell, F.D. and Snell, C.T.** (1954). Colorimetric methods of analysis". 3<sup>rd</sup> Edn. 4 Dyan Nostrand company Inc., Newyork pp. 512-513; 516-518.
- Vasil I.K.** (1987). Physiology and culture of pollen. *Int. Rev. cytol.* 107 p127-174.

\*Corresponding Author