

**Study of the total protein changes on the first leaves of two
wheat cultivars infected with *Puccinia striiformis***

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SUMMARY

Total protein changes on the first leaves of two wheat cultivars, Mv17 (resistant) and Bolani (susceptible) were studied at 24,48,72,100 and 144 hours after inoculation with uredinospores of *Puccinia striiformis* race 134E150 using Bradford, (1976) method.

The results showed a maximum increase in the total protein content in the resistant cultivar 72 hr after inoculation. Such increase also occurred 100 hr after inoculation in the susceptible cultivar. There was a decrease in the total protein content 144 hr after inoculation in both resistant and susceptible cultivars.

References

- AHMED, S., Y. YUSOF and H. A. ALI, 1995. Differences in protein content in leaves of resistant and susceptible varieties of wheat (*Triticum aestivum*) after infection with brown rust fungus (*Puccinia recondita*). Pakistan Journal of Botani. 27: 187-191.
- BRADFORD, M. M., 1976. A rapid and sensitive method for quantification of microgram quantities of protein utilizing the principle of protein-dye binding. Analytical Biochemistry. 72: 248-245.
- BROEMEBSEN, S. L. and VON-HADWIGER, L. A. 1972. Characterization of disease resistance responses in certain gene-for-gene interaction between flax and *Melampsora lini*. Physiological Plant Pathology. 2: 207-216.
- BROERS, H. and LOPEZ-ATILANO, R. M. 1994. A method of inoculating adult

- wheat plants with uredinospores of *Puccinia striiformis* to measure components of resistance. *Plant Diseases*. 78: 353-357.
- BUSHNELL, W. R. 1984. Structural and physiological alterations in susceptible host tissue. In: the cereal rusts (W. R. Bushnell and A. P. Roelfs, eds) vol II. Pages: 477-507. Academic press, Inc.
- CLARK, T. A.; R. J. IEYEN; T. L. W. GORVER and G. SAAITH, 1995. Epidermal cell cytoplasmic events and response gene transcript accumulation during *Erysiphe graminis* attack in isogenic barley lines differing at the ML-O locus. *Physiological and Molecular Plant Pathology* 46: 1-16.
- FLOTT, B. E.; B. M. MOERSCHBACHER; and H. J. REISENER, 1989. Peroxidase isoenzyme patterns of resistant and susceptible wheat leaves following stem infection. *New Phytopathology*. 3: 413-421.
- GRIFFY, C. A. and R. E. ALLAN, 1988. Inheritance of stripe rust resistance among near-isogenic lines of spring wheat. *Crop Science* 28: 48-54.
- ISAAC, C. A. 1992. Fungal plant Interactions. Chapman and Hall. pp. 418.
- LOWELL, B. J.; B. L. BRANNAMAN and F. P. ZSCHEIL, 1966. Protein and enzyme changes in barley leaves infected with *Erysiphe graminis* f. sp. *hordei*. *Phytopathology*. 56: 1405-1410.
- PATYKOWSI, Y.; A. URBANEK, and T. KACZOROWSKA, 1988. Peroxidase activity in leaves of wheat cultivars differing in resistance to *Erysiphe graminis* DC. *Journal of Phytopathology*. 122: 126-134.
- ROELFS, A. P.; R., P. SINGH, and E. E. SAARI. 1992. Rust diseases of wheat, concept and method of disease managment. CIMMYT. 81 p.
- YAMAMOTO, H. 1995. Pathogenesis and host-parasite specificity in rusts. In: *Plant Disease Histopathological, Biochemical Genetic and Molecular Bases* (K. Kohmoto, V. Singh and R. P. Singh, eds) Pergam Inc. 407 p.
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