Research Journal of Seed Science is an international journal publishes peer reviewed research work in the form of research articles, reviews and/or mini-reviews and short communications dealing with recent and exciting developments in the field of seed science. Scope of the journal includes: Physiology, biochemistry, molecular biology and ecology of seeds, Seed production, certification, testing, and storage.

Research Journal of Seed Science now accepting new submissions. Submit your best paper via online submission system.

Editor-in-Chief: Naithani, Subhash Chandra
ABSTRACT

Temperature dependence of wheat seed swelling and sprouting kinetics in water in the range of 10-25°C for constant magnetic field (~$10^4$ Gs) has been studied. Grain weight growth was chosen to serve the parameter under control. Activation energies for swelling and germination processes have been estimated (43.5 and 47.5 kJ mol$^{-1}$) of which the latter depended linearly on the share of hydrophilic substances in seeds. The assumption has been made that the quantum-cooperative phenomena in hydrate shells of biomolecules and clusters with correlated states of water spin-isomers define the adaptive physiology. Optimal temperatures of seed stratification and sprouting has been attributed to transitions between ice-like and spiral clusters. Magnetic field did not effect the kinetics of swelling but it slightly inhibited the rate of sprouting. Negative influence of magnetic field was explained by effect of Lorenz force on protons in the plain perpendicular to their motion in scutellum plasmalemma.

REFERENCES


Ukrainskoi SSR, 4: 353-357.


