

in the incubation medium could affect macromolecular synthesis, thus enabling aged embryos to recover from metabolic deficiencies including membrane functionality.

### Acknowledgement

The author is grateful to Prof. S. Cocucci for helpful suggestions and discussions.

### REFERENCES

- ALONSO, M. A., CARRASCO, L.: Relationship between membrane permeability and the translation capacity of human HeLa cells studied by means of the ionophore nigericin. — *Eur. Biochem.* **118** : 289–294, 1981.
- BRAY, C. M.: Nucleic acid and protein synthesis in the embryo of germinating cereals. — In: LAIDMAN, D. L., WYN JONES, R. G. (ed.): *Recent Advances in the Biochemistry of Cereals*. Pp. 147–173. Academic Press, London—New York 1979.
- COCUCCI, S., RANIERI, A., MORGUTTI, S., CIROLI, F.: The role of darkness, GA<sub>3</sub> and fusicoccin in breaking photodormancy in *Phacelia tanacetifolia* seeds. — *Physiol. Plant.* **52** : 177–180, 1981.
- COCUCCI, S., RANIERI, A., ZOCCHI, G.: Potassium-dependent increase in RNA and protein synthesis in the early phase of incubation of the thermodormant *Phacelia tanacetifolia* seeds. — *Plant Physiol.* **80** : 123–126, 1986.
- HARU, K., NAITO, K., SUZUKI, H.: Differential effects of benzyladenine and potassium on DNA, RNA, protein and chlorophyll contents and on expansion growth of detached cucumber cotyledons in the dark and light. — *Physiol. Plant.* **55** : 247–254, 1982.
- PETRUZZELLI, L., LIOI, L., MORGUTTI, S., COCUCI, S.: The effect of fusicoccin and monovalent cations on the viability of wheat seeds. — *J. exp. Bot.* **132** : 118–124, 1982.
- PETRUZZELLI, L., TARANTO, G.: Effects of permeation with plant growth regulators via acetone on seed viability during accelerated ageing. — *Seed Sci. Technol.* **13** : 183–191, 1985.
- TATA, J. B.: Co-ordination between membrane phospholipid synthesis and accelerated biosynthesis of cytoplasmic ribonucleic acid and protein. — *Biochem. J.* **116** : 617–630, 1970.
- WYN JONES, R. G., BRADY, C. J., SPEIRS, J.: Ionic and osmotic relations in plant cells. — In: LAIDMAN, D. L., WYN JONES, R. G. (ed.): *Recent Advances in the Biochemistry of Cereals*. Pp. 63–103. Academic Press, London—New York 1979.

### BOOK REVIEW

MCDONALD, M. B., JR., NELSON, C. J. (ed.): *PHYSIOLOGY OF SEED DETERIORATION*. — Crop Science Society of America, Inc., Madison 1986. 123 pp.

The availability of uniform lots of viable seeds of high quality is essential to a successful crop production. The deterioration of seed quality is recognized as a major problem contributing to decreasing crop production. In addition, seed damaging during production, storage and handling due to unfavourable conditions and pathogens causes lower quality and losses of feed and food grains. This booklet, CSSA Special publication Number 11, brings the basic information on the physiological factors associated with seed deterioration, presented at the Symposium held at the annual meeting of the American Society of Agronomy and the Crop Science Society of America at 1984 in Las Vegas. The matter is divided into six chapters. In the first E. E. Roos discusses the effect of temperature and relative humidity on seed viability, and the theories of seed deterioration. The review of present knowledge of membrane changes in seeds as related to germination and perturbations resulting from deterioration in storage (J. D. Bewley) is followed by discussions on nucleotide alterations during seed deterioration (J. D. Anderson and K. Gupta) and nucleic acid and protein metabolism (J. H. Cherry and R. W. Skadsen). The role of micro-organisms in seed deterioration is reviewed by J. M. Hallon. In the last chapter E. H. Roberts integrates environmental parameters into a predictive model which quantifies seed deterioration under given environmental conditions.

The booklet will be of value to all researchers and educators interested in seed quality and factors associated with the seed deterioration.