

Effect of ultra-violet radiation stress on wheat seedlings (*Triticum aestivum* L., cv. Otane)

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Our knowledge of the effect of ultra-violet (UV) radiation stress on early seedling growth is limited. In this study, 2 d old dark-germinated wheat seedlings were exposed to, or protected from, UV-C radiation. The seedlings exposed to UV light were smaller and accumulated appreciably more sugars at the end of 24 h treatment. The amount of sugars accumulated in the UV-stressed seedling tissue could lead to osmotic inhibition of their growth.

The accumulation of sugars in the seedlings seems dependent on the mobilisation of the endosperm food reserves. However, the radiation treatment has little effect on amylase activity, the key enzyme involved in the mobilisation of starch from the endosperm. ¹⁴C-glucose-feeding experiments indicated that sugar utilization could be blocked in the UV-stressed seedlings.