ABSTRACT

The photosynthetic response of primary leaves of wheat seedlings to weak light, weaker than the intensity used to generate shade plants, has been examined in the present work. A significant decline in the pigment levels both during greening and senescence suggest failure of leaves to adapt effectively to this light condition. On the otherhand relatively a high level of Chl b compared to Chl a, a characteristic of shade plants suggest a tendency of the leaves for acclimation. Weak light irradiation of leaves causes modifications in senescence induced changes in chloroplasts. It causes alterations in chloroplast organisation as revealed by absorption and fluorescence spectroscopy and a drastic loss in primary photochemical reactions of thylakoid membranes. Some of these changes are not comparable to that obtained with low light adapted shade plants. The photosynthetic changes induced by weak light are reversible within the limit of experimental period. The weak light response, however, becomes more prominent if the irradiated leaves are subjected to other stress factors like UV A exposure and water stress either separately or in combinations. The low input of light energy in chloroplasts may be correlated to relatively high mitochondrial efficiency.