DIFFERENCES IN RESPONSES OF SOME CEREALS TO UV IRRADIATION

Servilia OANCEA[1], Silvica PADUREANU[1] , Andrei Victor OANCEA [2]
E-mail:lioancea@uaiasi.ro
[1] University of Agricultural Sciences and Veterinary Medicine, Biophysics Department, Iasi
[2] Al.I.Cuza" University Iasi

Abstract

The responses of plants to UV irradiation include physiological, biochemical, morphological and anatomical changes. In general UV radiation deleteriously affects plant growth, reducing leaf size and limiting the area available for sola r energy capture. These findings have been achieved mainly through studies in greenhouses and exposure to artificial sources of u ltraviolet radiation; extrapolation to changes on crop yield as a result of increases in terrestrial solar UV radiation is difficult. In this work the effects of UV radiation on plant growth for the most useful cereals in our country: corn and wheat. Corn and wheat seeds were irradiated during 20 minutes and 40 minutes respectively, using a UV laboratory source. After that they were putted to germinate in laboratory conditions, using Petri dishes on dou ble filter paper. The dynamic of germination and the growth in length of the roots and the sheets of the plantlets was monitorized during the first phenophase. UV radiation modified the germinative potential determining a delay of seed germination especially for higher time of exposure. Our results also show that a negative correlation exists between the root length and the sheet length of the plantlets and the time of irradiation.

Key words: global climate change, UV source, plantlets