

Krupa, S.V., Kickert, R.N., Jäger, H.-J.: **Elevated Ultraviolet (UV)-B Irradiation and Agriculture.** - Springer Verlag, Berlin - Heidelberg - New York 1998. 296 pp. ISBN 3-540-63892-X.

This book is a contribution to a quite widely investigated and discussed field that concerns the whole planet and its future. The elevated UV-B irradiation has a cause in still growing human production. The global climate changes are a result of elevated CO₂ concentration that inevitably has increased along with industrial progress. The consequence is a depletion of topospheric ozone layer and this, in turn, induces an increased amount of ultraviolet irradiation A and B to approach the Earth. This may influence and even threaten all living organisms.

This book originated from the activity of Formal Commission on Protecting the Earth's Atmosphere. The authors were invited to work out a survey on the effects of elevated UV-B radiation on agricultural production.

At the beginning the known facts and observed data about this phenomenon are given. Many measured parameters as solar radiation, CO₂ concentration, O₃ layer magnitude, UV-B irradiation and variations in weather are the base for the modelling and predictions of next situation. Proper methodological approach to measurements of UV irradiation is necessary for a correct establishment of effects of this factor and is discussed in next chapter. It further tries to explain the observed differences obtained in various treatments in different laboratories due to different instruments namely lamps, filters, and detection apparatus.

Next several chapters are devoted to the influences of elevated UV-B irradiation on crops. These facts are summarized in a great table where all agriculturally and industrially important plants are presented. Not only primary effects on crop plants but also the different plant sensitivity and ability to adaptation are involved. It is interesting to think also of mutual relationships of plants with weeds, with their pathogens and pests. These interactions are inevitably influenced by elevated UV-B and some predictions are considered for their competitions. However, more research in this field is still necessary. A chapter of world agricultural production of the individual main crops is included to support these suggestions that supply us with interesting data from the FAO database.

Several questions of plant population genetics are also connected with the evaluation of the potential effects of increases in UV-B. Genetic diversity is decreased during a process of agriculture cultivation it can promote increased plant population sensitivity to changed climate conditions. The important way of coping with this problem consists in genetic engineering of crops to provide more tolerant plants.

The book is really important contribution to our understanding and predictions of the hot topic of changes in global climate with its implications. It is worked out with great very carefully and is based on theoretical considerations as well as on observed data which are arranged in understandable tables and figures. It can be recommended to all experts in the field.

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