INSTITUTUM AGRONOMICUM "DR.PETRU GROZA" CLUJ-NAPOCA (ROMANIA)
NOTULAE BOTANICAE HORTI AGROBOTANICI, 1982, XII.

DOCTORAL THESIS

Eugenia POP, 1981.

Cercetări asupra dezvoltării și persistenței în cultură a trifoiului roșu (Trifolium pratense L.). Research on the development and persistence of the red clover (Trifolium pratense L.).
Ph.D.Abstract, 1-25 pg., (Tipo Agronomia, Cluj-Napoca).

Guidance: Prof.dr.Ioan PUIA, Coresp.Memb.Acad.St.Agr.Silv.

The main research results obtained in laboratory, glasshouse and field experiments, between 1972-1978, can be summarized as follows:

The identification of photoperiodical and vernalization responses and also of overwintering capacity of different red clover ecotypes before their introduction in culture is a practical need in the fodder and seed production.

Flowering response of genotypes belonging to early, intermediate and late flowering ecotypes was very different even within the same ecotype: from qualitative response to quantitative response. Some genotypes (cultivars and populations) were photoperiodically neutral.

As regards the response to embryo vernalization there were ascertained significant differences among the various ecotypes according to the latitude of their origine. But the photoperiod was the determinative factor in flowering responses not only on the date and uniformity of flowering, but also on the intensity of this process.

Vegetative growth was influenced by daylenght and vernalization.

The defoliation system significatly influenced winterhardiness and perristence of ecotypes originated from different latitudes and also of diploid and tetraploid red clover. Winter survival was influenced firstly by ecotype: that from south latitude was the most susceptible to winterkilling in all treatments. Defoliation practices influenced markedly the winter survival and persistence of ecotypes from mid- and north latitudes.

In all cases seed setting, especially at first cutting and in sowing year, determined more severe winterkilling comparatively with that at the beginning of budding stage and full flowering.

Crown and roots development, carbohydrate levels, especially the dissecharid level and crown and roots internal breakdown were also controlled by defoliation system.

The local genotypes of Romania were found the most adapted to local conditions. They manifested favourable features from northern red clover ecotypes (flowering in long day and winter resistance) and also from southern ecotypes (rapid development rate and high productivity). These results point out the necessity of classifying these genotypes into a new botanical variety which represents a new intermediary ecological type, suggested as early as 1978 by PUIA and SZABÓ.

The experimental results presented in the complete thesis over 165 pages, 46 tables and 1o5 figures (51 photographies and 54 diagrames) were statistically verified (by Tukey and Duncan test and variance analyses) and discussed in accordance with 172 bibliographical refferences of Roumanian and world literature on this subject (Sz.T.A.).

Dissertation registred under the nr.5551/81 Rectorat,Inst.Agr.Cluj-Napoca.

Address of the author

Dr.Eugenia POP
Institutul Agronomic "Dr.P.Groza"
3400 Cluj-Napoca
Str.Mănăştur nr.3
R.S.ROMANIA

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Available for exchange

CRISTEA M., 1981, Resurse genetice vegetale (Vegetal genetic resources). Editura Academiei Republicii Socialiste Romania, Bucureşti, 297 pg., 35 Fig., 49 tab., bibl.ref., Summary and table of contents in English and Russian.

This book, preceeded by two other volumes written by ing.dr.M. CRISTEA, Germoplasma la porumb (The germplasm of maize) and Rasele de porumb din Romania (Maise varieties of Romania), is a basic source of information for our specialists working in the field of germplasm resources. The book is divided into 13 chapters dealing with "The population explosion" and the necessity to meet mankind's demand for food and clothing (1), factors contributing to the diversification of the plant world (2), centers of diversification and origin and of cultivated plants (3), concepts regarding plant classification, adaptation acclimatization and domestication (4-7), genetic erosion (8), genetic resource exploration and collection (9), use of genetic resources (1o), the study and documentation of vegetal genetic resources (11-12), and a survey of the main gene banks of the world (13).

The author stress the fact that if the present trend is to be continued uninterruptedly, a very dangerous situation may arise in agriculture, and especially in plant breeding. Surely in the plant-breeding programmes of the future no valuable germplasm resources can be neglected. In oder to fully understand this, all available possibilities should be taken into consideration and used. Such possibilities are: the intensification of germplasm collection activities, the exchange of germplasm resources and information among the existing institutions, the foundation of specialized germplasm resource laboratories and gene banks in order to promote national, territorial and global activities regarding the exploration and preservation of world genetic thesaurus. The book reflects the responsability of specialists regarding the quality of life of the future generations. The preservation of the life's full genetic endowement may be of really vital importance (M.S./A.T.Sz.).