

AGROTECHNICS AND ECONOMICS SECTION

SUMMARY by

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During the "Agrotechnics and Economics" Section, 17 oral communications were delivered and forty-nine posters were presented.

Speakers came from 17 countries, from USA to Japan and from Finland to Australia. A great number of environmental conditions were represented, but the major part came from Poland and the EEC.

This summary will be divided into five parts :

- 1-Effects of pedoclimatic conditions on the rapeseed plant.
- 2-Studies about plant development and physiology.
- 3-Nutritional aspects, including glucosinolates aspects.
- 4-Crop management.
- 5-Economic environment.

PEDOCLIMATIC CONDITIONS AND RAPESEED

Most contributions came from Poland and reported studies on frost resistance. Works from the Department of Physics in Chezin contribute to give criteria for plant breeders, and studies from the Department of Plant Hardiness propose hypotheses to understand the mechanism of hardiness.

Other works on frost resistance are carried out with spring rapeseed in Sweden. These studies allow the quantification of yield losses according to the frost date.

Drought stresses can reduce spring rapeseed yield in Canada.

General effects of climate on rapeseed yield were studied in Finland, in Poland and in the German Democratic Republic. They were appreciated by multiple regression, and this kind of work can give ideas for a better crop management.

Dr. Barscak, from Poland, presented the only study on the relationship between soil characteristics (in this case pH) and cultivar susceptibility. This kind of work seems important for the cultivar choice in acid places.

PLANT DEVELOPMENT AND PHYSIOLOGY

The mechanisms of floral initiation are studied in France and in Italy. These studies are useful to precise the most suitable sowing dates, as proposed by Dr Evans (U.K.).

I think that the phyllotaxic approach proposed by Dr. Leterme from France is very interesting and it should be considered by everybody for the interpretation of plant morphology.

Several papers were involved in growth description and source-sink relationships. There is a general agreement to say that the leaf area is the most important photosynthetic source till pod-setting, and explain the number of pods per plant. After pod-setting, the most important source is the pod itself.

A new aspect about oilseed rape physiology is the hormonal regulation. Dr Debouille from France found a good correlation between some hormonal peaks and development stages.

Another interesting work was presented by Dr Inanaga, from Japan : besides trophic effects on pod-setting, it is possible that hormones influence the number of seeds per pod.

NUTRITIONAL ASPECTS

We had information on rapeseed needs with macro- and micro-elements and foliar nutrient applications. A study from Germany with labelled nitrogen and another one from U.K. improve our knowledge about late nitrogen fertilization.

A major aspect concerns glucosinolates and the effect of cultural practices on these compounds. Several works indicate that climate (paper from Dr. Mailer, Australia) and sulphur fertilization (papers from Dr. Merrien, France, from Dr. Schnug, Federal Republic of Germany, from Dr. Vrabec, Czechoslovakia) can modify in large proportions the seed glucosinolate content.

CROP MANAGEMENT

Each country has its own problems with crop management, and it is nearly impossible to synthesize all the communications in this part.

Some surveys are given about the farmers' practices (

Poland : Dr. Horodyski. Czechoslovakia : Dr. Fabry.
 Ethiopia : Dr. Belayneh. It seems important however to say that studies concern more and more multifactorial experiments : it is difficult to generalize the effects of one practice, so we have to study interactions between practices. This is what Dr. Fabry is trying to do in Czechoslovakia and what we are trying to perform in France. (comm. from Dr. Debouzie).

It is worth giving more information about two special technics : weeding and growth regulators. More and more complete herbicides are now available, as shown by Dr. Nuyben, Federal Republic of Germany. Other aspects concern triazine resistance, as mentioned in the "Genetics" Section.

The main effect of growth regulators is anti-lodging. According to reported experiments from Poland, and France, there is no specific effect of growth regulators on the rapeseed yield.

A last point with crop management has been studied : harvest and mechanical properties of different plant parts (stems, pods and seeds). This work has been carried out by Dr Szot and his collaborators in the Lublin Institute of Agrophysics, and it could be of interest for plant breeders.

ECONOMIC ENVIRONMENT

Few papers concerned this part, but they were very important for everybody here. According to Canola Council representatives, the prospects are very good for "oo" varieties. It also seems that U.S.A. people agree with this as they are now showing much interest for oilseed rape.

From another point of view, the presentation of Polish farmers' organization was quite interesting.

CONCLUSION.

Up to now, agronomists and physiologists have been trying to use cultivars obtained by breeders, and recently, the main object of plant breeders has been quality. It is quite surprising that only rare publications associate plant breeders and agronomists or physiologists. After this Congress, I guess that within few years, agronomists and physiologists will be able to give plant breeders efficient criteria for selection, and I believe that it will be a good thing for oilseed rape production.