THE FIFTH CONSULTATION OF THE F.A.O. RESEARCH NETWORK ON SUNFLOWER

(Novi Sad, Yugoslavia, 24—27 July 1984)

The fifth Consultation of the F.A.O. Research Network on Sunflower, sponsored by the F.A.O. Regional Office for Europe, took place in Novi Sad, Yugoslavia, from 24 to 27 July 1984, being organized by the Co-ordination Centre of Fundulea, Romania and the Institute of Field and Vegetable Crops of Novi Sad.

The Consultation was attended by 54 delegates from 18 countries (Algeria, Austria, Bulgaria, Canada, Cyprus, Egypt, Czechoslovakia, France, Federal Republic of Germany, Greece, Hungary, Italy, Portugal, Romania, Spain, Turkey, United States of America, Yugoslavia) and one international organization (International Sunflower Association) (fig. 1).

Dr. Alex. Viorel Vrânceanu, co-ordinator of the Network, opened the Consultation and welcomed the participants. He expressed his thanks to the competent authorities of Yugoslavia who had ensured excellent facilities for the Consultation and acknowledged the great contribution of the staff of the Institute of Field and Vegetable Crops of Novi Sad and of its director, Professor T. Vrebalov, to the organization of the Consultation.

The Consultation was greeted by dr. P. Ilić, secretary of the Secretariat for Agriculture, Processing Industry and Forestry of the Socialist Autonomous Province of Vojvodina, who appreciated the efforts that F.A.O., together with the Institute of Field and Vege-

Fig. 1

table Crops in Novi Sad, had made in organizing the Consultation in Novi Sad and was confident that the meeting would produce fruitful results for the benefit of sunflower research. Introductory salutations were delivered too by Mr. Bogdan Berić, secretary of the Provincial Association for Plant Oils and Fats and by Professor Tihomir Vrebalov, director of the Institute of Field and Vegetable Crops, Novi Sad.

Professor T. Vrebalov (Yugoslavia) was elected Chairman and Dr. J. Fernández-Martinez (Spain) and Dr. Claudine Lamarque (France), Vice-Chairmen.

The Co-ordinator of the Network, dr. A. V. Vrânceanu (Romania), presented the general report on past activities since the last Consultation (1981) and proposals for the next three-year period (1984—1987). He appreciated the fruitful results of the co-operation and underlined the contribution of the six research subnetworks to the implementation of the adopted programmes of scientific international co-operation. The general report contained also proposals regarding the reorganization of some subnetworks, which were afterwards debated and adopted by the Consultation, as follows :

1. The unification of the subnetworks on chemical weed control and sunflower disease mapping in one subnetwork, called "Sunflower integrated protection", with three projects :

a) integrated weed control (Project Centre — Research Institute for General Agriculture and Crop Production, Pisa, Italy, and Project Officer — dr. G. P. Vannozzi) ;

b) integrated disease control (Project Centre — Plant Protection Institute, Bucharest, Romania, and Project Officer — dr. Horia Iliescu) ;

c) sunflower disease mapping (Project Centre — Institute of Field and Vegetable Crops, Novi Sad, Yugoslavia, and Project Officer — dr. M. Aćimović).

The Liaison Centre of the subnetwork on sunflower integrated protection will remain with CETIOM, Paris (Mr. Y Regnault).

2. Reformulation and enlargement of the subnetwork on sunflower response to irrigation under different environmental conditions as "Subnetwork on ecophysiology of sunflower production" with its Liaison Centre at INIA, Department of Oil Crops, Cordoba, Spain and Liaison Officer — dr. E. Fereres. The first step of co-operation will deal with the following projects :

a) evaluation of sunflower yield potential in different environments and identification of the basic factors limiting yield ;

b) drought tolerance of sunflower cultivars ;

c) physiology of sunflower yield determination.

On the first day of the Consultation, the Liaison Officers of the six subnetworks presented the results of the joint investigations carried out in the last three years and made proposals for further development of the scientific research co-operation and improvement of the joint methodology and experimental technique.

Dr. F. M. Stoenescu (Romania), Liaison Officer of the *subnetwork on the experimentation of sunflower cultivars in competitive trials*, stressed that in comparison with the previous experimental cycles, the co-operative activities in the fourth biennial cycle had developed not only quantitatively, but also qualitatively. Analysing the results of this biennial cycle, he concluded that although some groups of sunflower hybrids differing genetically could be established, their genetic diversity appeared to be quite limited to fit all the environmental variations and minimize the genetic vulnerability of sunflower crops. The limiting factors are connected primarily with the utilization of the same type of cytoplasmic male sterility and the relatively reduced number of pollen fertility restorer lines. Breeding centres should propose for the next experiments, cultivars which do not have similar characteristics especially as concerns vegetation period and plant height. As well as primary data, all participants should send elaborate results including the analysis of variance and more information concerning the reaction to diseases and to the environmental stress conditions.

The Liaison Officer of the *subnetwork on sunflower applied genetics*, dr. A. Kováčik (Czechoslovakia) stated that of the four topics dealt with by the subnetwork, two were more developed : heredity of disease resistance and heredity of the main characteristics which influence seed yield. New sources of cytoplasmic male sterility and genes for pollen fertility restoration have been identified and they are already in use in the breeding programmes. Better studied and especially used are the genes that control the resistance to the attack of various pathogens. From this standpoint, the resistance to the attack of different races of downy mildew *(Plasmopara helianthi)* allows a clear discrimination of hybrids and varieties. It is necessary to further develop the genetic investigations on *Sclerotinia sclerotiorum* and *Phomopsis helianthi*, as well as the study of different marker genes or other genetically useful traits.

The Liaison Officer of the *subnetwork on the collection, evaluation and conservation of wild species and their use in sunflower breeding programmes*, dr. D. Skorić (Yugoslavia) presented the results of the scientific co-operation carried out in the last three years and proposed a programme for future activities, with the following objectives :

— development of co-operation with scientists from U.S.A., Canada, Mexico, Argentina

and Brasil for collecting different wild species and strains and their exchange among the subnetwork participants ;

— conservation and maintenance of all collected entries, by the Novi Sad Liaison Centre, INRA Montpellier, France and USDA Bushland, Texas ;

— studies of morphological, botanical and agronomical characteristics of the wild *Helianthus* species, including seed germination, resistance to diseases and unfavourable environmental conditions ;

— interspecific hybridization using embrio culture, cell and another culture, chromosome doubling for increasing hybrid fertility ;

— cytogenetic studies, identification of new marker genes and new sources of self-fertility and cytogenetic male sterility.

Dr. M. Aćimović (Yugoslavia), in charge of the Liaison Centre of the *subnetwork on sunflower disease mapping,* pointed out in his report that 35 sunflower diseases were recorded in 10 European countries, 16 were found in the USA and 22 in Australia. In Southern Europe, the number of diseases and their yield damage was less when compared to that in Central and Northern Europe. Most of the parasites in Europe were similar to those in the USA and Australia, but some specific parasites were noted in the USA, such as *Colletotrichum coccodes, Albugo tragopogonis, Puccinia xanthii,* etc. Emphasis should be put on research concerning the new parasites, i.e. *Phomopsis* sp., new races of *Plasmopara helianthi,* as well as some well known diseases which are particularly dangerous like *Sclerotinia sclerotiorum* and *Alternaria helianthi.* Attention will be focussed on some malformations of the mycoplasmic type, reported more frequently in France and Italy in 1983 and 1984.

Mr. Y Regnault (France), Liaison Officer of the *subnetwork on sunflower chemical weed control,* presented his report and stressed the necessity of giving a new impulse to the activity of this subnetwork as well as a clearly marked orientation toward the integrated control. The consultation approved the proposed reorganization as a *subnetwork on sunflower integrated protection* with three projects and a certain member of topics. The participants to this new subnetwork expressed their wish to hold a working meeting next year in order to improve the content of the joint research programme and the working methods.

Dr. F. Insua (Spain), Liaison Officer of the *subnetwork on sunflower response to irrigation* under different environmental conditions presented his report on past activities. The Consultation agreed with the reorientation of this subnetwork as a *subnetwork on ecophysiology of sunflower production* with three projects which would tackle such topics as the use of high plant population and high notrogen doses under irrigated conditions in order to improve crop technology for high yielding levels, new sources for drought resistance and their use in breeding programmes, photosynthetic activity of the leaves as a yield limiting factor in the process of biomass accumulation, inflorescence development and grain filling process as well as macro-element translocation in the plant, radicular development and its absorption capacity, photosynthetic productivity and energetic evaluation of photosynthesis, etc.

On the second day of the Consultation, 15 scientific papers resulted from the co-operative research investigations and 4 reports on sunflower crop and research development in Austria, Cyprus, Hungary and France were presented. Most of these communications are published in the present edition of "Helia".

The subnetworks held individual meetings on the third day of the Consultation and discussed the details of the future scientific cooperation, the improvement of the experimental methods and technique, data processing and interpretation, dissemination of results through the Information Bulletin "Helia" or by means of other publications or extension facilities.

In its closing session, the Consultation unanimously re-elected the Research Institute for Cereals and Industrial Crops of Fundulea, Romania, as Co-ordination Centre of the Network, with dr. A. V. Vrânceanu as co-ordinator, as well as the Liaison Centres of the existing and newly-oriented subnetworks with the following Liaison Officers : dr. F. M. Stoenescu (Fundulea, Romania), dr. A. Kováčik (Ruzyne-Prague, Czechoslovakia), Mr. Y Regnault (CETIOM, Paris, France), dr. D. Skorić (Novi Sad, Yugoslavia), dr. E. Fereres (Cordoba, Spain).

The participants adopted the proposal made by the Hungarian delegation that the next Consultation of the FAO Research Network on Sunflower be organized in Szeged, Hungary, in the July 1987.

An interesting visit to the experimental fields and a study tour were offered by the host country on the afternoon of 26 July 1984, when the participants evaluated the intensive sunflower breeding programme developed by the Institute of Field and Vegetable Crops near Novi Sad, and on 27 July 1984 when sunflower seed and commercial fields and agrotechnical and varietal demonstrative plots were visited at "Pionir" Agricultural Estate in Srbobran, and at Subotica and Sombor Agricultural Combines, including the "INUS" Oil Refinery in Sombor.

A. V. Vrânceanu

LA CINQUIÈME RÉUNION DU RÉSEAU F.A.O. DE RECHERCHES SUR LE TOURNESOL

(Novi Sad, Yougoslavie, 24—27 juillet 1984)

Résumé

A cette réunion, ont participé 54 délégués de 18 pays. Le rapport général du réseau et les rapports spéciaux des 6 sous-réseaux de recherches ont été présentés, ceux-ci contenant l'activité déployée lors de la dernière réunion de 1981, ainsi que des propositions pour le développement de la coopération scientifique dans les 3 années suivantes.

Les sous-réseaux concernant la lutte chimique contre les mauvaises herbes et la cartographie des maladies du tournesol ont été unifiés dans un sous-réseau unique, dénommé „La protection intégrée du tournesol", tandis que le sous-réseau étudiant la réponse du tournesol à l'irrigation a été réorganisé et développé, ceci allant être concentré sur des problèmes d'éco-physiologie de la production du tournesol.

Quinze travaux scientifiques et 4 informations sur la culture du tournesol et sur les recherches scientifiques d'Autriche, Chypre, France et Hongrie, ont été présentées.

Le pays organisateur a offert une intéressante excursion d'études, à l'occasion de laquelle les participants ont visité le champ d'amélioration du tournesol de Novi Sad et certaines entreprises agricoles complexes, spécialisées dans la production des semences hybrides de tournesol.

La prochaine réunion aura lieu à Szeged, Hongrie, en 1987.

LA QUINTA REUNION DE LA RED F.A.O. DE INVESTIGACION AL GIRASOL

(Novi Sad, Yugoslavia, 24—27 de julio de 1984)

Resúmen

En la reunión participaron 54 delegados de 18 países. Fue presentado el informe general de la Red y los informes especiales de las 6 subredes de investigación, conteniendo la actividad desarrollada desde la última reunión del año 1981 y propuestas para el desarrollo de la cooperación científica en los siguientes tres años.

Las subredes referentes al combate químico de las malas hierbas y la investigación de las enfermedades del girasol fueron unificadas en una única subred llamada „Protección integrada de girasol", mientras que la subred concerniente a la respuesta del girasol a riego fue reorganizada y desarrollada, y va a ser centrada en problemas de ecofisiologia de la producción del girasol.

Fueron presentados 15 trabajos científicos y 4 informes sobre la cultura del girasol y las investigaciones científicas en Austria, Chipre, Francia y Hungría.

El país organizador ofreció una interesante excursión de estudios, los participantes visitando el campo de mejora de girasol de Novi Sad y unos agrocomplejos especializados en la producción de las semillas híbridas del girasol.

La próxima reunión tendrá lugar en Szeged, en Hungría, en 1987.

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