

THE 12th INTERNATIONAL SUNFLOWER CONFERENCE

The 12th International Sunflower Conference was organized by the Yugoslav Association of Fats and Oils Producers and the Institute of Field and Vegetable Crops of Novi Sad, under the auspices of the International Sunflower Association. The programme of the Conference included 166 scientific papers, of which 142 papers were presented. The Conference was attended by 550 delegates from 42 countries, including 45 participants in the F.A.O. Cooperative Research Network on Sunflower. A great number of participants represented seed companies interested in sunflower hybrid seed production and distribution.

The scientific papers were presented in four sections: "Genetics and breeding", "Crop management and production", "Sunflower crop protection", and "Processing, utilization, economics and marketing".

Most papers referred to new aspects of sunflower genetics, breeding and crop management.

The "Genetic and breeding" papers have brought valuable contributions in the following fields of research:

- utilization of wild species in sunflower breeding programmes, in order to identify new sources of cytoplasmic male sterility and pollen fertility restoration and gene for resistance to diseases. During discussion on these topics, the importance of the international cooperation for collecting, multiplying and studying the wild material was underlined;

- study and use of biotechnological methods such as *in vitro* cell, tissue and protoplast culture, somatic embryogenesis, regeneration of sunflower plants from immature embryos for accelerating the selection works of inbred lines;

- genetic control of oil content and quality, with special emphasis on heredity of high oleic content and development of inbred lines and hybrids with more than 80% oleic acid;

- the improvement of sunflower plant type by developing ideotypes well adapted to specific environmental conditions, as for instance early and short hybrids, with short petiole and reduced leaf size and with a semierect bending of the head.

The papers presented in "Crop management and production" section have brought contributions to the elucidation of some aspects concerning sunflower plant physiology and the improvement of cultural practices. Research works have mainly referred to the identification of suitable genotypes. An important accent was laid on the role of enzymes in the process of photosynthesis as well as on the role of root system in connection with drought resistance. As concerns sunflower nutrition, the necessity to develop research works concerning the nitrogen role in metabolic processes was pointed out as well as the role of

microelements in photosynthesis. Another group of papers dealt with the quality of soil preparation, plant population, fertilization, harvesting and the role of these factors in obtaining constant yields.

Within the section on "Sunflower protection", the majority of papers referred to the already known but very harmful pathogens as *Sclerotinia*, *Plasmopara*, *Phomopsis*, *Alternaria*. New methods of artificial inoculation with *Sclerotinia*, more efficient for testing the breeding material were proposed. A correlation between the content of phenols and the host plant resistance was revealed and the role of tissue cultures in identifying superior genotypes was underlined. A large number of papers referred to *Phomopsis*, a very dangerous pathogen which has extended considerably in Europe in recent years. The existence of genetically resistant to *Phomopsis* lines and hybrids in Romania and Yugoslavia was pointed out.

The section on "Processing, utilization, economics and marketing" debated certain aspects concerning sunflower hybrid seed production, oil extraction and refining and economic aspects of sunflower production.

A international assortment of 200 sunflower hybrids, originated from different research institutes and seed companies, was presented at the Agro-Industrial Combine "Becej", together with demonstration plots with pesticides, fertilizers and bioregulators.

A technical exhibition was organized on the Conference site and the exhibitors were seed companies, manufactures of agricultural machines and processing equipment, manufactures of pesticides and fertilizers and engineering companies from Yugoslavia and abroad.

The Conference has permitted the assimilation of the most recent results obtained on world scale in the field of sunflower science and technology. Many of these results were obtained within the F.A.O. Research Network on Sunflower, especially those concerning genetics and sunflower diseases. The interest for a larger cooperation in sunflower research and production was expressed by the participants from the developing countries.

The Conference was very well organized but a reduced number of participants attended constantly the four sections and took part in discussions, a great part of the rest being commercial people. It appears necessary to improve the scientific content of the next Conferences and to establish a better connection and correlation with the Consultations of the European Research Network on Sunflower.

The next International Sunflower Conference will be held at Pisa, Italy, in 1992.

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