Oil crops: proceedings of the three meetings held at Pantnagar and Hyderabad, India, 4–17 January 1989
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OIL CROPS:
PROCEEDINGS OF THE THREE MEETINGS HELD AT
PANTNAGAR AND HYDERABAD, INDIA, 4-17 JANUARY 1989

1. The Brassica Subnetwork-II
2. The Other Oil Crops Subnetwork-I
3. The Oil Crops Network Steering Committee-I

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REPORT ON A TOUR TO OILSEED BRASSICA GROWING AREAS OF INDIA

Getinet Alemaw

A tour was organized to oilseed Brassica growing areas of India by the Oilcrops Network Project (IDRC) in conjunction with the second Brassica subnetwork meeting in Pantnagar 4-6 Jan, 1989. Scientists participating in the tour were from Bhutan, P.R. China, Ethiopia and Nepal. The tour was organized and led by Drs. Basudeo Singh and P. P. Kumar.

Mixed and intercropping are common practices and irrigation (both power and gravitational) is intensive. Extension work and link between researchers and farmers is strong. At many sites studies on yield limiting factors show that application of full package is important. Among individual factors, application of fertilizers followed by disease control were very influential.

Kanpur

At this station, the cropping sequence of toria, maize, wheat, fallow etc. was studied. The best performance of toria was obtained when toria was grown after lubia. Also the best stage of harvest of toria was found to be at yellow pod stage. Intercropping of wheat with mustard is very common. Some varieties are better for intercropping than others. The best row combination ratio and the right variety need to be studied. The variety Rohini gave the highest yield when sown in 1:9 ratio with wheat. All agronomic packages were as to the wheat crop. The effect of foliar application of fungicides on the incidence of Alternaria leaf spot was also on test. Application of Dithane M-45 at the rate of 0.2% a.i/ha was performing better than other treatments.

Morena Farm

The demonstration site showing farmers’ practice versus researchers’ packages was visited. Mustard was sown with full packages and farmers’ method. The best performance was observed with full packages and improved variety. Among individual factors was the use of fertilizer followed by disease and pest control. Alternaria leaf spot and white rust are important diseases for the area. Leaf spot was successfully controlled by foliar application of Dithane M-45 at the rate of 0.2% a.i/ha which showed excellent performance over the untreated check.

Harayana Agricultural University

Hisar

Breeders are working on Brassica juncea, B. napus, B. campestris var. Toria and B. carinata. The department has also a small gene bank. The oilseed team is consisted of breeders, entomologists, agronomists and soil scientists. Here B. carinata is thought to be resistant to aphids, white rust and Alternaria leaf spot. They claimed seed yields up to 40 q/ha with oil content of 34% and maturity duration of 160 days.

Azotobacter strains are being studied on Indian mustard, Yellow sarson and toria. Its effect being the increase of nitrogen uptake and thereby the decrease of disease incidence and farm cost. Mycorhiza fungus was also found in roots of Brassica oilseeds. Mycorhiza increases phosphorous uptake and disease incidence particularly root diseases. However, its economics as
well as effect on all agronomic characteristics are under scrutiny. So far, it seems that bio-fertilizers are economical.

National Bureau of Plant Genetic Resources (NBPGR)

The bureau has the following organizational set-up.

1. Plant Quarantine Division: Includes pathology, entomology and nematology. The division uses microscopic technique, disinfectant and even x-ray. The division prepares check lists of pests and pathogens to serve as background information. The bureau releases only healthy seeds for experimentation.

2. Germplasm Evaluation Division: The division evaluates all exotic, and local collections made through exchange and exploration for various crops. The evaluation data is stored in documentation facilities which are equipped with IBM PC.

3. Germplasm Conservation Division: This branch conserves accessions in cold storage facilities. The division also conducts seed physiology studies in relation to storage.

4. Exploration and Germplasm collection Division.

5. Germplasm Exchange Division.

6. National Faculty for Plant Tissue Culture: In this division proper culture and plant environment for important crops including medicinal plants are studied.

7. The experimental farm deals with Brassica napus, B. oleracea, B. carinata and B. juncea. Artificial synthesis of B. oleracea and B. nigra. When B. oleracea was used as female plants were dwarf with weak stem and lodges badly. Plants were tall with strong stem when B. oleracea was used as pollen parent. The bureau scientists believe that B. carinata is late but resistant to diseases and pests. Thus, mutation breeding to generate early plants is underway. Some early lines are obtained but they are dwarf with reduced number of branches and pods/plant.