

DAY 2

1. Indian Agriculture Research Institute (IARI), New Delhi

We met with Joint Director, IARI, Dr. Tiwari, and some assistants (entomologist and plant pathologist) plus Dr. Balram Singht (Head, Division of Genetics, IARI) and Dr. S.S. Yadav (Chickpea Breeder, IARI). Dr. Tiwari explained the history, staff structure (22 departments, 800 scientists, 5000 employees), land base (1200 acres) and functions of the IARI. The mandate is research, training and extension. The School of Crop Improvement (a division within IARI) is focused on plant breeding and introduction of new cropping practices.

Variety introduction involves 4 years of testing in the All-India Coordinated Trials before seed multiplication begins. Beyond the breeder seed level, seed multiplication is handled by the National Seed Corporation which distributes certified seed. About 250 acres at IARI is devoted to breeder seed multiplication. Entries into the trial may be from IARI sources, private companies, CGIAR centres, etc. Most foreign varieties under test are hybrids. India is considering entering the international plant breeders rights (intellectual property) system, and is thinking about how to bring revenue from breeding back into the public system.

At present, variety registration is not a requirement. Any variety may be sold. They are working toward a system of mandatory entry into trials. Farmers are becoming aware of the benefits of new varieties. Estimates from Dr. Tyagi (lentil breeder) were 15 % use of new varieties, and substantially higher for chickpea.

The group was very interested in the Canadian systems for variety release, farm production practices, and the relationship between farmer sales and brokers purchases. The opinion was expressed that in the Indian system, the farmer was at a definite disadvantage in relationship to the trading system.

The meeting was followed by a field visit to the chickpea breeding project, the lathyrus breeding project and the lentil and pea breeding projects. All field trials were in excellent condition. Arrangements were made to test IARI chickpea lines, and possibly "custom crossing" of chickpea. The major focus was on improved plant type, wilt resistance. Some advanced lines were ascochyta resistant. Nematode resistant lines were also under development. The lathyrus plots were described, including the problems of maintaining low neurotoxin lines.

The pea breeding program focuses on improved plant habit (shorter stature, semi-leafless type) and powdery mildew. Only powdery mildew resistant lines are entered into the trials, thereby eliminating most European germplasm. The program only covers yellow cotyledon peas. "Green peas" refer to vegetable type only. The lentil program is divided into small (16-20 mg), medium (30-32 mg) and "bold" (large > 35 mg). The small size is largely split, while the large is used for decorticating.