

Proceedings of the Meeting of Scientists for discussing the Breeding Programme in Black pepper

Director chaired the meeting at ATIC Hall by 3.30 PM on 18-4-2005 and the following Scientists attended:

1. Mr. B. Krishnamoorthy
2. Dr. M. Anandaraj
3. Dr. S. Devasahayam
4. Dr. B. Chempakam
5. Dr. B. Sasikumar
6. Dr. K. Nirmal Babu
7. Dr. J. Rema
8. Dr. R. Ramakrishnan Nair
9. Dr. K.V. Saji
10. Dr. John Zachariah
11. Dr. K.S. Krishnamurthy
12. Dr. Santhosh J Eapen
13. Dr. Johnson K George
14. Dr. K.N. Shiva
15. Dr. T.E. Sheeja

The sub projects and the personnel identified are as below

1. Increase in *caryophyllene* content – Dr. B. Sasikumar and Dr. John Zachariah
2. Resistance/Tolerance to foot rot – Dr. K. Nirmal Babu and Dr. M. Anandaraj
3. Resistance/Tolerance to *R. similis* – Dr. Johnson K George and Dr. Santhosh J Eapen
4. Resistance/Tolerance to pollu beetle – Mr. K. V. Saji and Dr. S. Devasahayam
5. Tolerance to drought – Dr. T.E. Sheeja and Dr. K.S. Krishnamurthy

It is decided that Subhakara will be the recipient parent in all the crosses.

- a) For quality, thrust will be given to *caryophyllene*. Lines with above 35% *caryophyllene* will be used as donors. Such lines identified are Coll. (CLTP) 122 (36.7%), Coll. 95 (35.3%), Coll. 7 (41.2%), Coll. 24 (38.8%), Coll. 123 (41.8%) and Coll. 108 (37.8%)
- b) For *Phytophthora* resistance breeding, a mapping population of size 128 (selfs) and 256 (F1s) will be used. *Phytophthora* tolerant lines P-24 and Coll. 1041 will be used as donors.
- c) In case of nematode resistance mapping population of (parents of HP 125) (Valiyakaniyakadan x Karimunda) will be raised. The hybrid HP 125 (*R. similis* resistant) will be multiplied for yield evaluation.
- d) The pollu beetle tolerant interspecific hybrids (*P. nigrum* x *P. barberi* and *P. nigrum* x *P. attenuatum*) will be multiplied for field planning. The other 4 cultivars (Coll. 816, 841, 1084, 1114) will be used as donors in crossing with Subhakara. Laterals of these lines will be produced to induce flowering.

GISH & FISH techniques will be used to characterize the interspecific hybrids.

- e) In case of drought tolerance, one reliable indexing method, like RWC, should be followed. Drought tolerant lines like Coll. 1495 (Kottanadan) Coll. 931 (Kalluvally) and Coll. 813 will be used as donors.

f) As a long term objective the Recombinant Inbred Line (RIL) and Near Isogenic Lines (NILs) are to be developed for each character finally leading to development of resistant pepper varieties.

Bulk Segregant Analysis has to be done by pooling DNA of progenies of the crosses (for each character separately). This may immediately be done in case of *Phytophthora* work.

Mapping population size will be same as indicated in item 'b' for all the crosses.

Detailed breeding methodology/strategy has to be prepared.



B. Sasikumar

Senior Scientist