



GENETIC EVOLUTION OF BT. COTTON HYBRIDS

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ABSTRACT :

Cotton is one of the major fibre crops of global significance. It is cultivated in tropical and subtropical regions of more than eighty countries of world occupying nearly 33 m ha with an annual production of 19 to 20 million tones of bales. China, U.S.A., India, Pakistan, Uzbekistan, Australia, Brazil, Greece, Argentina and Egypt are major cotton producing countries. These countries contribute nearly 85% of the global cotton production.

KEYWORDS : Cotton, Genetic Evolution.

INTRODUCTION

In India, cotton is being cultivated in 9.0 m ha and stands first in acreage. The crop is grown in varied agro-climatic situation across nine major states viz. Maharashtra, Gujarat, Madhya Pradesh, Punjab, Haryana, Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu. The crop is also grown on small area in Orissia, Assam, U.P and West Bengal. Nearly 60 million people are engaged in cotton production, marketing and processing. The textile industry which utilizes the cotton provides employment to about 16% of the total workforce. Cotton in its various forms also serves as raw material for more than 25 industries.

OBJECTIVES

1. To study morphological characteristics of cotton hybrids.
2. To measure the infection percentage on Bt-cotton hybrids.

In India, 162 species of insect pests attack different stages of cotton. Of these, about a dozen are major and half of them are key production constraints necessitating management Interventions in the crop ecosystem. The sucking pest complex comprising of aphids, jassids, thrips and whitefly are widespread and fairly serious. However, their damage can be efficiently contained by the existing practices of cultural, chemical, biological and host resistance means.

The bollworms are most important tissue feeders and highly damaging. Three types of bollworms viz. American bollworm (*Helicoverpa armiger*), Pink bollworm (*Pectinophora gossypiella*) and Spotted bollworm (*Earias vitella*), normally referred as bollworm complex are by far the most damaging and loss inducing pests of cotton. Amongst them, *Helicoverpa* emerged as a key pest all over the country causing as high as 80% losses in cotton.

MATERIALS AND METHODOLOGY

Materials:-

Investigation on described under the chapter was done at two talukas in hingoli district. During the investigation we have used various material which has been described under following.

Selected hybrid genotypes

Ankursuwarna, Ankur 3028, Malika, Bunny, Jaddo, Ajit-155, Rashi magna, Bramha, Firstclass

Survey:- To study the following investigation.

1. Selected nine hybrid genotype varieties of cotton from the field area of Hingoli district.
2. Selected two talukas of cotton of cotton growing fields in Hingoli district.
3. The field area from different villages of two talukas are as follows.
4. Yeulegaonsolanke 2. Suregaon 3. Aundha 4. Nageshwadi 5. Gunda 6. Aajarsonda 7. Aadgaon 8. Karanjala 9. Borisawant.

2.2. Method :

3. Morphological character observation:

- 1) To study the morphological characteristics of the plant in the growth stage the following observations are given by this method.
- 2) Plant height measured by using meter scale.
- 3) No of branches are measured manually and Data recorded.
- 4) No. of bolls per plant were measured manually and recorded.

4. Infection percentage calculation are meal nod & observed

1. Total infected bolls are manually
2. Then total the total bolls are measured observed
3. Then infected bolls are measured
4. Then on basis of characters the bolls infected with pink bollworm spotted bollworm & American bollworm has been separated
5. Then observation were recorded & arranged in a table

RESULTS

The Result of present study entitled that the lowest infection percentage is observed in Ankur 3028, Ankursuwarna, Malika and Bunny shows good resistance to Bollworm complex.

3.1 Morphological study of Bt – cotton hybrids.

The morphological Characters of Bt-cotton Hybrid were observed the lowest infection percentage is observed in case of ankursuwarna it is 11% in Malika Hybrid Infection % in Ankur 3028 it is 25% In Jaddo cotton Hybrid infection percentage is 57 % which is very high in Ajit -155 in 65 % of Infection percentage seen.

Sr.No.	Genotype	Location	Plant Height	No. of Branches	Total No. of Bolls	Infected	Infection
1.	Ankursuwarna	Nageshwadi	212	29	62	7	11%
2.	Malika	Suregaon	198	30	67	8	12%
3.	Bunny	Suregaon	188	27	53	13	25%
4.	Ankur 3028	Suregaon	204	32	69	7	10%
5.	Jaddo	Gunda	182	30	63	20	57%
6.	Ajit-155	Jawla	152	16	23	15	65%
7.	Rashi magna	Adgaon	106	12	16	10	63%
8.	First class	Aajarsonda	186	36	40	25	62%
9.	Bramha	Borisawant	167	25	40	17	43%

In rashiMegana 63% of Infection of boll worm Observed in first class in Bramha Hybrid the infection percentage is 43 % Calculated .

3.2. Infection of bollworm complex

Table no. 3.2.2. Infection of bollworm complex				
Hybrid	Genotype	Spott Boll	Am Boll	Pink Boll
Ankursuwarna	8	1	1	6
Malika	9	2	1	6
Bunny	7	1	1	5
3028	13	2	1	10
Jady	21	2	3	16
Ajit 155	15	1	2	12
Rashi Magna	10	1	3	6
First class	25	3	4	18
Bramha	17	2	3	12

The infection of bollworm in case of Ankursuwarna is observed on 8 bolls from that spotted bollworm and American bollworm infected each on 1 boll while 6 are infected with pink bollworm. In malika 9 bolls were infected from that SB 2 bolls infected with spotted bollworm 1 infected with American bollworm and 6 with pink bollworm incase of Ankur 3028 from B 2 bolls are infected with spotted bollworm 1 with American bollworm while 5 with pink bollworm. In Jaddubybrid 21 infected bolls seen from that 2 infected with spotted bollworm 3 with American bollworm and 16 with pink bollworm in Ajit-155 hybrid 15 infected bolls seen American bollworm on 2 and pink bollworm on 12 observed. In Rashi magna 10 bolls seen from that 1 infected with spotted bollworm 3 infected with American bollworm and 6 with pink bollworm.

CONCLUSION:

The morphological parameters was observed from different type of Bt-cotton geotypes the analysis shows that the resistance to bollworm complex has been declined in various varieties of cotton and that results in infection of Bolloworm complex and decline in the yield of Bt-Cotton.

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