*J. Cotton Res. Dev.* **31** (1) 133-138 (January, 2017)

# Screening of cotton genotypes for resistance to aphids, *Aphis gossypii* (Glover) (Aphididae: Hemiptera)

A.MANIVANNAN*, R. PHILIP SRIDHAR, N. GANAPATHY AND A. KAMALAKANNAN
*Centre for Plant Protection Studies, Tamil Nadu Agricultural University, Coimbatore- 641 003*
**E-mail : manihari4@gmail.com*

**ABSTRACT :** The study was conducted for screening of 350 cotton genotypes for relative susceptibility/ resistance against aphids, *Aphis gossypii* (Glover) laid out in Department of Cotton, TNAU, Coimbatore. Among the 350 genotypes screened, 8 genotypes were free from aphid incidence, none of the genotypes was found resistant, 200 genotypes were categorized as tolerant, 100 genotypes moderately tolerant, 30 genotype susceptible genotypes and remaining 12 genotypes highly susceptible with a population ranging from 0.10 to 1.58, 1.59 to 3.17, 3.18 to 4.76 and 4.76 to 10.75 aphid/3 leaves/plant, respectively based on the standard deviation value. In comparison with trichomes density incidence of aphids high in moderately hairy varieties compared to less hairy varieties.

**Key words :** Aphids, cotton, genotypes, resistance, trichomes

Cotton is an important natural fibre crop cultivated in varying climatic conditions of tropics as well as sub tropic regions of more than 110 countries all over the world (Kooistra *et al.,* 2006). Cotton plays a key role in the national economy in terms of generation of direct and indirect employment in the Agricultural and Industrial sectors. Among the various causes of low productivity of cotton in India, insect pests are one of the major factors. During growth period, 148 insect pests have been recorded on cotton crop, of which only 17 species were recorded as major insect pests. Cotton pests primarily are divided into sucking pests and bollworms. Insect pests of major significance in cotton are jassids *(Amrasca biguttula biguttula,* Ishida), aphids *(Aphis gossypii,* Glover), whiteflies *(Bemisia tabaci,* Gennadius) and thrips *(Thrips tabaci* Lindeman). These affect the yield, causing losses ranging from 11.20 to 20.90 per cent. The plant protection measures adopted to overcome the pest problem in general include the application of insecticides.

Chemical control not only creates health hazards and ecological contamination but also induces the resistance in insects and disturbing the balance between the forces of destruction (predators, parasitoids and pathogens) and forces of creation (biotic potential of pests) in agro ecosystem. Considering the limitations of chemical control, use of natural plant resistance to their pest attack is one of the solutions to overcome the pest problem. A promising line for reducing the losses due to various insect pests therefore lies in the development of agronomically better suited strains or varieties of cotton which would resist the attack major insect pests. Therefore, the present study was conducted to identify resistant sources against cotton aphids.

**Field screening :** The experiment to screen cotton germplasm against aphids was laid out at Department of Cotton, Tamil Nadu Agricultural University Coimbatore. A total of 350 cotton genotypes were sown on 19, August, 2014. All the genotypes were screened under

unprotected conditions following normal agronomic practices. Incidences of aphids was assessed. Three leaves (top, middle and bottom) were selected randomly from 5 plants/plot at 30, 60, 90 and 120 DAS (Days after Sowing) (Rohini *et al.,* 2011). The population of aphids during crop period was converted to mean population/3 leaves/plant. These values were subjected to statistical scrutiny. Based on the standard deviation values, the germplasm lines were categorized as resistant, tolerant, moderately tolerant, susceptible and highly susceptible (Rajashekar *et al.,* 2010).

**Morphological bases of resistance ;** Trichome density was enumerated from the leaves of 20 cotton genotypes that showed low and high levels of incidence of aphids in the screening trial. Leaf samples were collected and were cut into one or 2 square centimetre size. The leaf samples were heated in 20 ml of water in small glass vials for 15 min at 85°C. Water was decanted and 20 ml of 96 per cent ethyl alcohol was added. The samples were boiled at 80°C for 20 min. The alcohol was drained and fresh alcohol was added till chlorophyll was removed completely. The leaf samples were then boiled at 85°C by adding 90 per cent concentrated lactic acid until the leaf segments were cleared. The vials were cooled and stored for observation. The trichomes was counted/$cm^2$ under the compound microscope at 45 x magnification.

**Field screening :** The incidence of aphids in cotton genotypes were observed during *kharif,* 2014-2015 and shown on Table 1. Based on the standard deviation values, the germplasm lines were categorized as resistant, tolerant, moderately tolerant, susceptible and highly susceptible were shown in Table 2. Results of the experiment revealed that, no genotype was found to be resistant, 8 genotypes were free of aphids incidence. 200 genotypes were categorized as tolerant, 100 genotypes moderately tolerant and 30 genotypes susceptible against aphids by recording population ranged from 0.10 to 1.58, 1.59 to 3.17 and 3.18 to 4.76/ 3 leaves/plant, respectively.

The remaining 12 genotypes *viz.,* Buri147, Paula, BAR 12/8, I 34, 134XCO2 Mead, RL-Suseptible, TCH 1806, TCH 1807, ASB1, SA21, J207 and 5143 were categorized highly susceptible.Jabraeil *et al.,* (2006), screened the cotton genotypes ni the same manner and found the aphid activity was the highest on sahel and lowest on siokra varieties Rajashekar *et al.,* (2010), screened 95 genotypes and reportedno genotypes was found to be resistant, 34 genotypes tolerant, 46 genotypes moderately tolerant, only 9 genotypes susceptible and remaining 6 genotypes were categorized as highly susceptible. Rohini *et al.,* (2011), who reported genotypes, LK 861 (0.75/3 leaves/plant) and JK 276-4 (0.98/3 leaves/plant) resistance to aphids whereas susceptible genotypes were DHY 286 sel (19.85/3 leaves/plant) and CNHPY 6 (13.18/3 leaves/plant).

**Morphological basis of resistance :** The data on trichomes density of different cotton germplasm against aphids, were presented in Table 3. The incidence of aphids was high in moderately hairy varieties compared with less hairy varieties. Less hairs were observed in germplasm RS212 (145 hairs/$cm^2$) followed by hybrid surat type (216 hairs/$cm^2$), 137-CO-3M (272 hairs/$cm^2$), acala1577-D (309 hairs/$cm^2$) and MU2 (314 hairs/$cm^2$) with population of 1.75, 0.88, 0.63, 0.63, and 2.50/3 leaves/plant, respectively. Highly dense hairs wereobserved in M 60/A2 (722 hairs/$cm^2$) followed by MW 11 (692 hairs/

**Table 1.** Aphid incidence in cotton genotypes during *kharif*, 2014-2015

| Sr. No. | Genotypes | Number/ 3leaves/ plant | Sr. No. | Genotypes | Number/ 3leaves/ plant | Sr. No. | Genotypes | Number/ 3leaves/ plant | Sr. No. | Genotypes | Number/ 3leaves/ plant |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MU 8 x BP 52 | 0.25 | 46 | 545 | 1.38 | 91 | Stardel | 1.88 | 136 | Halden 4 | 0.38 |
| 2 | MW 3(P) | 4.00 | 47 | 547 | 2.75 | 92 | S 3F | 0.75 | 137 | Harts Ville 5 | 0.00 |
| 3 | MW 11 | 5.00 | 48 | 549 | 2.38 | 93 | S 450 555 | 0.75 | 138 | CT 130 10 | 0.25 |
| 4 | MW 14 | 1.13 | 49 | 550 | 0.63 | 94 | S 622 | 0.13 | | Delta Extress | |
| 5 | Okara Trump | 0.63 | 50 | 551 | 2.88 | 95 | UPA 5 7 (17) | 1.75 | 139 | EC 35556 | 0.50 |
| 6 | RA 33 K | 1.00 | 51 | 556 | 0.88 | 96 | S 5501 | 4.38 | 140 | G111 323 | 0.13 |
| 7 | PAR NO 20/3 | 0.00 | 52 | 553 | 2.63 | 97 | UPA (62)31 | 0.75 | 141 | Hancock | 0.75 |
| 8 | RA 35 66 | 0.50 | 53 | 560 | 3.38 | 98 | UPA(62)32 | 0.88 | 142 | Hybea 200 | 2.00 |
| 9 | RA 33 65 | 0.13 | 54 | 557 | 3.00 | 99 | 5(44) | 3.88 | 143 | Uganda 8 9 | 0.88 |
| 10 | Reax | 2.75 | 55 | 561 | 4.50 | 100 | 7(33) | 1.75 | 144 | Hybrid Surat | 0.88 |
| 11 | RL Suseptible | 6.50 | 56 | 563 | 0.38 | 101 | 9(11) | 0.75 | | Type | |
| 12 | Stone Ville SA | 3.88 | 57 | 564 | 1.13 | 102 | 9(17) | 3.25 | 145 | Indone 1 | 3.75 |
| 13 | Stone Ville | 0.75 | 58 | 589 | 2.25 | 103 | 144F | 2.75 | 146 | I 34 | 5.75 |
| 14 | SUS 27/2 | 1.13 | 59 | 590 | 1.25 | 104 | 182F | 0.13 | 147 | I102 | 0.25 |
| 15 | T 176 6 | 1.50 | 60 | 602 | 1.38 | 105 | A 101/63 | 1.25 | 148 | I 106 | 1.13 |
| 16 | UAMP 59/1 | 1.00 | 61 | 610 | 0.50 | 106 | A 678 | 2.50 | 149 | I 41 | 0.75 |
| 17 | Wilds 5 | 1.63 | 62 | TCH1716 | 1.00 | 107 | AC114 | 3.88 | 150 | j114 | 0.88 |
| 18 | 0484 A | 0.75 | 63 | 5143 | 10.75 | 108 | AC122 | 0.25 | 151 | JR 23 | 0.38 |
| 19 | Zululand Hybrid | 0.25 | 64 | 7233 | 0.50 | 109 | AC132 | 2.50 | 152 | k51 | 2.25 |
| 20 | 47/10 | 0.25 | 65 | Glacale | 1.00 | 110 | AC133 | 0.63 | 153 | K 232 | 0.75 |
| 21 | 100Fx Aelfos | 1.38 | 66 | A9160/23 | 1.88 | 111 | AC136 | 2.75 | 154 | k3216 | 0.25 |
| 22 | 100Fx G ARM | 4.13 | 67 | Nectriless | 0.50 | 112 | Acala 3517 | 0.50 | 155 | k 2808 | 1.25 |
| 23 | 134xCO2 Mead | 5.88 | 68 | Acala 1577 D | 0.63 | 113 | Acala 911/2 | 2.50 | 156 | ll 43 | 1.38 |
| 24 | 170xco2M | 0.75 | 69 | Alabar 7MB | 1.50 | 114 | AC 100 | 0.38 | 157 | ll54046/63 | 1.50 |
| 25 | 479/25 | 3.88 | 70 | Alabar 333 55 | 0.63 | 115 | AC 104 | 1.50 | 158 | ll 56 | 0.25 |
| 26 | 521 | 0.50 | 71 | B50 | 2.00 | 116 | AC 128 | 0.75 | 159 | ll 57 | 0.13 |
| 27 | 522 | 0.75 | 72 | Bambessssa 49 | 0.38 | 117 | P57/42 | 2.13 | 160 | M 60/A2 | 4.80 |
| 28 | 523 | 1.00 | 73 | BJA 592 | 1.38 | 118 | 546 | 1.13 | 161 | MC Nair 1032 | 0.63 |
| 29 | 525 | 1.63 | 74 | BAR 12/8 | 5.50 | 119 | BAR—84 | 1.25 | 162 | Big Boll Trump | 0.38 |
| 30 | 524 | 0.63 | 75 | Blight Master | 0.75 | 120 | TCH 1728 | 2.25 | 163 | Moors Special | 0.13 |
| 31 | 527 | 0.50 | 76 | Bp.52 NC 62 | 2.00 | 121 | C34 | 2.13 | 164 | BP 52 MB 2 | 0.63 |
| 32 | 528 | 0.50 | 77 | Bra203 | 0.63 | 122 | C124 | 0.63 | 165 | K 3103 | 0.63 |
| 33 | 529 | 1.00 | 78 | Buri147 | 4.88 | 123 | C222/63 | 0.25 | 166 | MUB PUA7 1 4 | 1.25 |
| 34 | 530 | 3.75 | 79 | Cerra(P) | 1.88 | 124 | CO 4B 40 21x | 0.63 | 167 | Pelimond | 0.50 |
| 35 | 531 | 4.00 | 80 | Corollina Queen | 2.63 | 125 | Coker 201 | 0.75 | | Cleveland | |
| 36 | 535 | 0.63 | 81 | Coker 100 AWR | 0.88 | 126 | Coker 413 | 0.50 | 168 | Alogodelgs | 2.13 |
| 37 | 537 | 1.13 | 82 | Coker 124 B | 1.63 | 127 | Coker Wilt | 0.63 | | Breans | |
| 38 | 536 | 1.25 | 83 | Delta Pine 15 | 2.75 | 128 | CT130 10 16 | 0.63 | 169 | DPL 14 | 1.00 |
| 39 | 538 | 0.50 | 84 | TCH M22 | 1.63 | 129 | CT 13 14 15 | 0.63 | 170 | DPL 15 | 1.00 |
| 40 | 539 | 3.25 | 85 | Empire 16WR | 0.75 | 130 | Delta Pine 16 | 0.50 | 171 | Half and Half | 0.63 |
| 41 | 540 | 2.63 | 86 | GREGG | 1.63 | 131 | Dunn 56 | 0.63 | 172 | Me x Acala | 2.38 |
| 42 | 541 | 3.75 | 87 | KK1543 | 2.38 | 132 | EC 15099 | 2.50 | 173 | TCH M39 | 0.13 |
| 43 | 542 | 0.63 | 88 | Popt | 2.88 | 133 | EC 15736 | 0.63 | 174 | PK 863 | 2.88 |
| 44 | 543 | 0.88 | 89 | Sanz Penna M 58 | 0.13 | 134 | Acala W 29 1 | 0.75 | 175 | Stone Ville | 1.38 |
| 45 | 544 | 4.13 | 90 | Samaru 26 T | 0.13 | 135 | C 2682 | 0.38 | 176 | Stone Ville 5 A | 1.00 |

*contd....*

**Table 1.** *contd.*

| S. No. | Genotype | No./ 3leaves/ plant | S. No. | Genotype | No./ 3leaves/ plant | S. No. | Genotype | No./ 3leaves/ plant | S. No. | Genotype | No./ 3leaves/ plant |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 177 | Tzang PO | 1.50 | 218 | H386 | 1.25 | 264 | SVPR 1 | 0.25 | 308 | Stone Wlle 7A | 0.88 |
| 178 | Banda 1 | 0.38 | 219 | H487 | 3.00 | 265 | SVPR 2 | 3.63 | 309 | T82 2 Wilds | 0.38 |
| 179 | CO2 | 0.75 | 220 | H490 | 0.63 | 266 | TCH 1223 | 2.88 | 310 | 137 CO 3M | 0.63 |
| 180 | Coker | 1.00 | 221 | H329 | 1.50 | 267 | TCH 1302 | 1.63 | 311 | 162/63 | 0.63 |
| 181 | Fergoson | 2.25 | 222 | H509 | 1.63 | 268 | TCH 1569 | 0.88 | 312 | 167/62 | 1.50 |
| 182 | HB61 | 1.25 | 223 | SH467 | 0.13 | 269 | KC2 | 1.25 | 313 | 275/62 | 2.75 |
| 183 | PK688 | 3.50 | 224 | SH469(1 1) | 1.88 | 270 | Anjali | 0.63 | 314 | DS 28 | 3.00 |
| 184 | 14 2 | 0.88 | 225 | SH131 | 1.75 | 271 | RU4/4 | 0.63 | 315 | TCH 1813 | NR |
| 185 | 19 1 | 1.25 | 226 | SS264 N | 0.00 | 272 | BSS 53 | 5.31 | 316 | SRT 1 | 1.63 |
| 186 | 30 1 | 0.38 | 227 | SH469 | 2.50 | 273 | SA21 | 9.75 | 317 | EC 6 | 0.38 |
| 187 | 35 4 | 0.63 | 228 | SH269 | 3.25 | 274 | SA205 | 3.38 | 318 | G 4836 | 0.25 |
| 188 | 9030 LM | 0.63 | 229 | RS265 | 0.88 | 275 | SA145 | 1.75 | 319 | HAR 82 | 0.25 |
| 189 | 418/49 45F x LSS1/63 | 2.20 | 230 | RS277 | 1.50 | 276 | SA201 | 0.75 | 320 | EC 5 | 1.50 |
| | | | 231 | RS212 | 1.75 | 277 | SA239 | 4.00 | 321 | HAR 84 | 1.88 |
| 190 | 418/49 45F x LSS4/63 | 2.60 | 232 | RS 267 | 0.25 | 278 | SA299 | 0.63 | 322 | HAR 85 | 3.63 |
| | | | 233 | RS271 | 0.38 | 279 | SA335 | 1.00 | 323 | HAR 86 | 0.13 |
| 191 | 418/49 45F x LSS6/63 | 2.50 | 234 | RS 4001 | 0.00 | 280 | SA383 | 3.00 | 324 | EC 3 | 0.75 |
| | | | 235 | RS 253 | 0.63 | 281 | TCH 1806 | 8.00 | 325 | R8/2 | 2.00 |
| 192 | 418/49 45F x LSS7/63 | 2.75 | 236 | RS 225 | 0.50 | 282 | TCH 1807 | 8.63 | 326 | HAR 92 | 1.63 |
| | | | 237 | RS284 | 0.63 | 283 | TCH 1808 | 1.88 | 327 | HAR 93 | 0.63 |
| 193 | 275/62 | 1.63 | 238 | RS 75 | 0.75 | 284 | SAS15 | 0.88 | 328 | EC 2 | 3.25 |
| 194 | 10(1) | 1.88 | 239 | RS 252 | 0.25 | 285 | SAS40 | 0.25 | 329 | HAR 841 | 0.50 |
| 195 | PS 1 | 1.00 | 240 | RS 216 | 0.38 | 286 | SAS 74 | 0.50 | 330 | EC 4 | 1.13 |
| 196 | 9 68 5 | 1.25 | 241 | RS 235 | 0.88 | 287 | SA719 | 2.00 | 331 | Tamco+ SP37 H | 1.00 |
| 197 | MCU5 2 1 | 0.63 | 242 | RS 94 | 1.63 | 288 | TCH 1809 | 2.50 | 332 | Tamco+SP215 | 1.50 |
| 198 | D2 | 2.25 | 243 | LH33 | 1.38 | 289 | SA 977 | 1.75 | 333 | TCH 1814 | 0.25 |
| 199 | D4 | 1.63 | 244 | LH 68 | 0.50 | 290 | SA 1031 | 3.00 | 334 | Tamco+Camde | 3.13 |
| 200 | D16 | 2.38 | 245 | LH97 | 1.88 | 291 | DS 59 | 3.13 | 335 | 1C 263 SF | 2.13 |
| 201 | D20 | 1.75 | 246 | LH 48 | 1.13 | 292 | Parbar American (Cotton) | 2.88 | 336 | TCH 1815 | 1.13 |
| 202 | PR 22 | 1.38 | 247 | LH 62 | 0.13 | | | | 337 | IC1 729SF | 0.38 |
| 203 | PRS12 | 1.50 | 248 | LH 95 | 2.75 | 293 | Paula | 5.25 | 338 | IC1 893SF | 1.25 |
| 204 | 467 MD | 1.38 | 249 | ASB1 | 9.63 | 294 | TCH 1810 | 1.50 | 339 | 1903SF | 0.63 |
| 205 | SH169 | 2.00 | 250 | J219 | 1.50 | 295 | SA 972 | 3.75 | 340 | IC 1917SF | 0.38 |
| 206 | 415/49 45F x LSS3/63 | 1.38 | 251 | J205 | 1.13 | 296 | SA344 | 0.50 | 341 | TCH 1816 | 1.13 |
| | | | 252 | J207 | 10.50 | 297 | TCH 1811 | 2.13 | 342 | TCH 1818 | 0.63 |
| 207 | SH169 ND | 2.00 | 253 | F370 | 2.88 | 298 | SA 349 | 1.50 | 343 | Mecilla Acala | 4.08 |
| 208 | SH264 ND | 1.88 | 254 | TCH1741 | 1.50 | 299 | SA443 | 0.25 | 344 | TCH 1819 | 0.13 |
| 209 | H297 | 1.00 | 255 | F382 | 0.63 | 300 | TCH 181 | 3.75 | 345 | TCH 1820 | 3.01 |
| 210 | H420 | 2.38 | 256 | F408 | 2.50 | 301 | SA 491 | 0.63 | 346 | PK 1058 | 0.25 |
| 211 | H423 | 1.00 | 257 | FSB 3 | 1.13 | 302 | SA 578 | 0.75 | 347 | TCH 1821 | 0.00 |
| 212 | H492 | 2.38 | 258 | TCH1742 | 1.75 | 303 | SICIDS | 2.00 | 348 | PK1592 | 0.00 |
| 213 | H334 | 1.00 | 259 | CRH 014 | 3.88 | 304 | Samarlex | 0.88 | 349 | GL5 | 4.68 |
| 214 | H392 | 0.50 | 260 | TCH 1764 | 2.63 | 305 | Stramp Roof | 0.88 | 350 | Stone Ville 20 | 1.50 |
| 215 | H494 | 1.50 | 261 | NC 17 | 3.63 | 306 | Stone Ville 7A | 1.13 | | **Mean** | **1.60** |
| 216 | MU2 | 2.50 | 262 | Okra Leaf | 2.38 | 307 | SE 42 1 1 47 7 | 1.75 | | **SD** | **1.59** |
| 217 | JA1 | 0.50 | 263 | TCH 1772 | 0.00 | | | | | | |

**Table 2.** Reaction of cotton germplasm to aphids, *Aphis gossypii*

| S. No. | Level of resistance | Aphids/3 leaves/plant | Genotypes |
|---|---|---|---|
| 1 | Resistant | 0.01 0.10 | Nil<br>RA 33 65, Sanz Penna M 58, Samaru 26 T, S 622, 182F, G111 323, ll 57, Moors Special , TCH M39,SH467, LH 62, HAR 86, TCH 1819, MU 8 x BP 52, Zululand Hybrid, 47/10, AC122, C222/63, CT,130 10 Delta Extress, I102, k3216, ll 56, RS 267, RS 252, SVPR 1, SAS40, SA443,G 4836, HAR 82,TCH 1814, 563, Bambessssa 49, AC 100,C 2682, Halden 4, JR 23, Big Boll Trump, Banda 1, 30 1,RS271, RS 216, T82 2 Wilds,EC 6, IC1 729SF, IC 1917SF, RA 35 66, 521, 527, 528, 538,610,7233,<br>Nectriless,Acala 3517, Coker 413,Delta Pine 16, EC 35556, Pelimond Cleveland, H392,JA1, RS225,LH 68, SAS 74, SA344,HAR 841,Okara Trump, 524,535,542, 550, Acala 1577 D,Alabar 333 55, Bra203, AC 133, C 124, CO 4B 40 21x, Coker Wilt, CT1 30 10 16, CT 13 14 15,Dunn 56, EC 15736, MC Nair 1032, BP 52 MB 2, K 3103, Half and Half, 35 4, 9030 LM, MCU5 2 1,SH169 ND, H490,RS 253,RS284,F382, Anjali , RU4/4, SA299, SA 491, 137 CO 3M, 162/63, HAR 93, 1903SF, TCH 1818, Stone Ville, 0484 A, 170xco2M, 522, Blight Master,Empire 16WR, S 3F, S 450 555, UPA,(62)31, 9(11), AC 128, Coker 201, Acala W 29 1, Hancock, I 41 , K 232, CO2, RS 75, SA201, SA 578, |
| 2 | Tolerant | 0.1 1.58 | EC 3, 543, 556, Coker 100 AWR, UPA(62)32, Uganda 8 9,Hybrid Surat Type, j114, 14 2, RS265, RS 235, TCH 1569, SAS15, Samarlex, Stramp Roof, Stone Wlle 7A, RA 33 K, UAMP 59/1, 523, 529, TCH1716,Glacale, DPL 14, DPL 15,Stone Ville 5 A, Coker , PS 1, H297, H423, H334, SA335, Tamco+ SP37 H,MW 14, SUS 27/2, 537, 564, 546, I 106, LH 48, J205, FSB 3, Stone Ville 7A, EC 4, TCH 1815, TCH 1816, 536, 590, A 101/63, BAR—84,k 2808, MUB PUA 7 1 4, HB61, 19 1, 9 68 5, H386, KC2, IC1 893SF, 100Fx Aelfos, 545, 602, BJA 592, ll 43, Stone Ville, 415/49 45F x LSS3/63, PR 22, 467 MD, LH33, T 176 6, Alabar 7MB, AC 104, l54046/ 63, Tzang PO, PRS12, H494, H329, RS277, J219, TCH1741, TCH 1810, SA 349, 167/62, EC 5 , Tamco+SP215, Stone Ville20<br>Wilds 5, 525, Coker 124 B, TCH M22, GREGG, 275/62, D4, H509, RS 94, TCH 1302, SRT 1,HAR92, UPA 5 7 (17), 7(33), D20, SH131, RS212, TCH1742, SA145, SA 977, SE 42 1 1 47 7, A9160/23, Cerra(P), Stardel, 10(1) , SH264 ND, SH469(1 1), LH97, TCH 1808, HAR 84, B50, Bp.52 NC 62,Hybea 200, SH169, SA719, SICIDS, R8/2, P57/42, C34, Alogodelgs Breans, 418/49 45F, x LSS4/63, |
| 3 | Moderately tolerant | 1.59 3.17 | TCH 1811, 1C 263 SF, 589, TCH 1728, k51, Fergoson, D2, 549, KK1543, Me x Acala, D16, H420H492, Okra Leaf , A 678, AC132, Acala 911/2, EC 15099, 418/49 45F x LSS6/63, MU2, SH469, F408, TCH 1809, 540, 553, Corollina Queen, TCH 1764, Reax, 547, Delta Pine 15, 144F, AC136, LH95, 275/62, 551, TCH 1820, Popt, PK 863, F370,TCH 1223, Parbar American (Cotton), 557, H487,SA383, SA 1031, DS 28, DS 59,Tamco+Camde. |

*contd....*

***Table 1.*** *contd.*

| | | | |
|---|---|---|---|
| | | | 539, 9(17), GL5, PK 1058, 418/49 45F x LSS1/63, SH269, EC 2, 560, SA205, PK688,NC 17, SVPR |
| 4 | Susceptible | 3.18 4.76 | 2, HAR 85, 530, Mecilla Acala, 541Indone 1, SA 972, TCH 181, Stone Ville SA, 479/25, 5(44), MW 3(P), AC114, CRH 014, 531, SA239, 100Fx G ARM,544, S 5501, 561, 418/49 45F x LSS7/63, Buri147, Paula BAR 12/8I 34 418/49 45F x LSS7/63, Buri147, Paula, BSS 53, M 60/A2, MW 11, BAR 12/8, I 34, 134xCO2 Mead, |
| 5 | Highly susceptible | >4.77 | RL Suseptible, TCH 1806, TCH 1807, ASB1, SA21, J207, 5143 |

cm$^2$), Mecilla acala (691 hairs/cm$^2$), TCH1820 (689 hairs/cm$^2$), PK 1058 (678 hairs/cm$^2$) and J207 (548 hairs/cm$^2$) with population of 4.80, 5.00, 4.08, 3.01, 3.87 and 10.50/3 leaves/plant, respectively.

**Table 3.** Trichomes density in cotton genotypes and aphids incidence

| Genotype | Trichomes/ cm2 | Aphids/ 3 leaves/plant |
|---|---|---|
| RS212 | 145.3 | 1.75 |
| Hybrid Surat type | 216.1 | 0.88 |
| 137-CO-3M | 272.7 | 0.63 |
| Acala 1577 D | 309.3 | 0.63 |
| MU2 | 314.1 | 2.50 |
| Alogodelgs brean | 408.2 | 2.13 |
| HB 61 | 421.1 | 1.25 |
| Zululand hybrid | 508.7 | 0.88 |
| PK863 | 518.3 | 2.88 |
| Wilds 5 | 521.3 | 1.63 |
| 134 x CO2 | 542.4 | 0.63 |
| J207 | 548.7 | 10.50 |
| GL5 | 560.5 | 4.68 |
| MW 3 (p) | 617.3 | 4.00 |
| BSS 53 | 645.1 | 5.31 |
| PK 1058 | 678.4 | 3.87 |
| TCH1820 | 689.3 | 3.01 |
| Mecilla acala | 691.4 | 4.08 |
| MW 11 | 692.3 | 5.00 |
| M 60/A2 | 722.4 | 4.80 |

*Mean of 3 replications

## REFERENCES

**Jabraeil, R., Saeid, M., Jaghoup, F. and Seyed, Z.M., 2006.** Effect of cotton cultivar on performance of *Aphis gossypii* (Homoptera: Aphididae) in Iran. *J. Econ. Entomol.,* **99 :** 1820-25.

**Kooistra, K. J., Pydurn, R. and Termorhuizen, A. J., 2006.** The sustainability of cotton: consequences for man and environment, Sciences Shop Wageningen University and Research Centre. *Report.* **223 :** 60.

**Rajashekar, K., Chiranjeevi, C.H. and Ratnasudhakar, T., 2010.** Screening of germplasm against okra, *Abelmoschus esculentus* L. sucking pests. *Pestology,* **34.**

**Rohini, A.,Prasad, N.V.V.S.D., Chalam, M.S.V. and Veeraiah, K., 2011.** Identification of suitable resistant cotton genotypes against sucking pests. *J. Ent. Res.,* **35 :** 197-202.

**Received for publication : February 2, 2016**
**Accepted for publication : September 19, 2016**