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VAMBAN 1 A NEW COWPEA VARIETY FOR TAMIL NADU

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ABSTRACT

Vamban-1 cowpea is a pureline selection from IT85-F 2020. It matures in 55-65 days with high yield potential. It is an erect type with an average height of 25-30 cm. The average grain yield is 750 kg/ha under rainfed condition. Being white seeded, the variety has an edge over other varieties in market preference.

KEY WORDS : Vamban-1 cowpea, high yield, early maturity, rainfed, white seed

Cowpea (*Vigna unguiculata* (L.) Walp) is an important pulse crop in Tamil Nadu. Various types of cowpeas with differences in maturity, plant type, pod and seed variability are in cultivation depending upon the rainfall, ecology and cropping system. As it is drought tolerant, it is the predominant food legume in the drier regions of India. Earlier, breeding for improved cowpea varieties resulted in the release of many varieties with long duration (75-100 days) but lacked wider adaptability. Hence, an attempt was made at the National Pulses Research Centre (NPRC), Vamban to evolve a high yielding short duration variety possessing wide adaptability. This resulted in the identification of culture VCP 8 which was released during 1997 as Vamban 1 for general cultivation in Tamil Nadu.

Table 1. Performance of VCP 8 in station trials (grain yield : kg/ha)

| Season | VCP 8 | Co 6 | P 152 |
|-----------------------|-------|------|-------|
| Khariif '89 | 761 | -- | 474 |
| Rabi 90-91 | 882 | - | 694 |
| Khariif '91 | 534 | - | 476 |
| Khariif '92 | 572 | - | 294 |
| Rabi 92-93 | 1286 | - | 667 |
| Khariif '93 | 644 | -- | 629 |
| Khariif '94 | 792 | 730 | 716 |
| Rabi 94-95 | 529 | 502 | 392 |
| Summer '95 | 469 | 383 | 303 |
| Khariif '95 | 1192 | 926 | 909 |
| Rabi 95-96 | 670 | 501 | 286 |
| Summer '96 | 411 | 334 | 278 |
| Khariif '96 | 811 | 771 | 757 |
| Mean | 735 | 612 | 529 |
| % increase over CO 6 | 20.0 | - | - |
| % increase over P 152 | 39.0 | - | - |

MATERIALS AND METHODS

The continued evaluation and screening of various cowpea genotypes at NPRC, Vamban has resulted in the identification of a high yielding culture VCP 8. It is a pure line selection from IT 85-F 2020 and forwarded as single plant progenies. After selections were made, the seeds were bulked, multiplied and evaluated from 1989 onwards alongwith check varieties P 152 and Co 6. This culture was evaluated in station trials (ST) at NPRC for eight years from 1989 to 1996 in multilocation trials (MLT), in different research stations from 1994 to 1995 and in adaptive research trials (ART), in farmer's holding of different districts from 1994 to 1995 and the results are presented in Tables 1 to 3 respectively.

RESULTS AND DISCUSSION

The culture VCP 8 has been tested from *khariif* 1989 onwards at NPRC, Vamban. It has recorded a

Table 2. Performance of VCP 8 in multilocation trials (grain yield : kg/ha) during 1994-95

| Station | VCP 8 | CO 6 | P 152 |
|-----------------------|-------|------|-------|
| Vamban | 798 | 582 | 774 |
| Coimbatore | 265 | 386 | 299 |
| Bhavanisagar | 614 | 634 | 567 |
| Virudhachalam | 516 | 535 | 655 |
| Tindivanam | 650 | 525 | 402 |
| Killikulam | 973 | 745 | 688 |
| Pattukkottai | 712 | 454 | 553 |
| Mean | 647 | 537 | 563 |
| % increase over CO 6 | 20.5 | - | - |
| % increase over P 152 | 15.1 | - | - |

Table 3. Performance of VCP 8 (Vamban 1) in adaptive research trials during 1994-95

| Districts | Mean grain yield (kg/ha) | | |
|-----------------|--------------------------|------|-------|
| | VCP 8 | CO 6 | P 152 |
| Dharmapuri (5) | 527 | 463 | 439 |
| Coimbatore (7) | 1058 | 928 | 872 |
| Periyar (8) | 1482 | 1368 | 1421 |
| Salem (8) | 888 | 791 | 730 |
| Madurai (4) | 570 | 535 | 492 |
| Pudukkottai (4) | 873 | 672 | 640 |
| Pasumpon (4) | 653 | 368 | 634 |
| Mean | 864 | 732 | 746 |
| % increase over | - | 18.0 | - |
| % increase over | - | - | 15.8 |

mean grain yield of 735 kg/ha as against 612 and 529 kg/ha recorded by Co 6 and P 152 respectively. The percentage of increase was 20 over Co 6 and 39 over P 152 (Table 1).

This selection was tested in MLT along with check varieties. It recorded an average grain yield of 647 kg/ha as against 537 and 563 kg/ha recorded by Co 6 and P 152 respectively (Table 2). In ART, VCP 8 recorded an average grain yield of 864 kg/ha with 18.0 and 15.0 per cent increase over Co 6 and P 152 respectively (Table 3).

Table 4. Quality aspects of VCP-8 (Vamban-1) cowpea (mean score for acceptability 9-1)

| Characters | VCP 8 | CO 6 | P 152 |
|---------------------|-------|-------|-------|
| Colour | 9.00 | 8.50 | 9.00 |
| Appearance | 9.00 | 8.50 | 9.00 |
| Flavour | 9.00 | 8.50 | 9.00 |
| Texture | 9.00 | 8.27 | 9.00 |
| Taste | 9.00 | 8.50 | 9.00 |
| Protein content (%) | 24.50 | 23.50 | 23.00 |

It matures in 55-65 days with high yield potential. It is an erect type with an average height of 25 to 30 cm. Flowers are white in colour. Pods are 18 to 23 cm long with 13-18 seeds. Seeds are white with pre-dominant brown tinge surrounding the hilum. The average grain yield is 749 kg/ha under rainfed condition. White seeded type is highly acceptable to the farmers and consumers and hence it fetches higher market price than other types. Protein content of the seeds is 24.5 per cent which is 1.0 and 1.5 per cent increase over Co 6 and P 152 respectively (Table 4). Cooking quality of the culture is also rated high. Being early maturing, high yielding, white seeded type and suitable for rainfed conditions it was released as Vamban-1 cowpea variety for commercial cultivation in Tamil Nadu.

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X7 : A NEW PEARL MILLET HYBRID FOR TAMIL NADU

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ABSTRACT

The pearl millet hybrid ABH 219 (I 111A x PT 1890) was developed at Millet Breeding Station, School of Genetics, Tamil Nadu Agricultural University Coimbatore. This hybrid recorded an overall mean grain yield of 2513 kg/ha (12.4% over X6) under rainfed conditions and 3295 kg/ha (12.8% over X6) under irrigated conditions. It is resistant to downy mildew (3%), and possesses 4-7 productive tillers, high protein content (13.8%), synchronised flowering and medium grain size. The cytoplasmic background of the new hybrid is different from that of the already existing hybrid X6. Hence it was released as X7 for general cultivation in Tamil Nadu.

KEY WORDS : Pearl millet hybrid, X7, Tamil Nadu

Tamil Nadu occupies seventh position both in area and production of pearl millet (*Pennisetum glaucum* (L.) R.Br) in the country with an estimated area of 2.98 lakh ha. and production of 2.86 lakh tonnes annually. The major problem encountered

with the pearl millet hybrid is its susceptibility to downy mildew. This poses a bottleneck for increasing the yield and productivity in this crop. To overcome this problem, production of hybrid (Burton, 1958) with different cytoplasmic