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## INDUCED MUTANTS OF GROUNDNUT CULTIVAR PHULE-PRAGATHI

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THE popular groundnut (*Arachis hypogaea,* L.) cultivar Phule-Pragathi (JL–24)[1] is currently used as a national check in the yield trials of 'All India Co-ordinated Research Project for Oilseeds' (AICORPO) during the *kharif*[2] season. However, JL-24 is not superior to the other cultivars when grown in summer. Since the area under summer groundnut is increasing, it would be desirable to have a cultivar that can be grown in both the seasons. To improve the yield potential of JL-24 in summer cultivation; the dry seeds were treated with different doses of gamma-rays and grown as reported earlier[3].

Screening of more than 10,000 plants in the $M_2$ resulted in the selection of five mutants, JL-24M-1 and JL-24-2 having increased pod and seed size, JL-24M-3 with reduced pod and seed size; JL-24M-4 with pods as in JL-24 but having flat seed (figure 1) and the JL-24M-5 with increased number of branches. Among these the latter three bred true in $M_3$ and designated as small pod, flat seed and JL-24M-5 respectively. The true breeding nature of JL-24M-1 and JL-24M-2 could be established only in $M_5$ generation. The comparative characteristics of JL-24 and its mutants showed that the majority of them was similar to JL-24-1, except for the specific characters for which they were selected.

Yield trials of the mutants were conducted along with JL-24 twice in *kharif* and in summer seasons at Trombay and Gauribidanur and the results are summerized in table 1. All the mutants except the small pod gave superior yields as compared to JL-24. There was no difference in maturity period and shelling percentage between parent and the mutants. Hundred kernels weighed 67.5 ± 1.2 g,

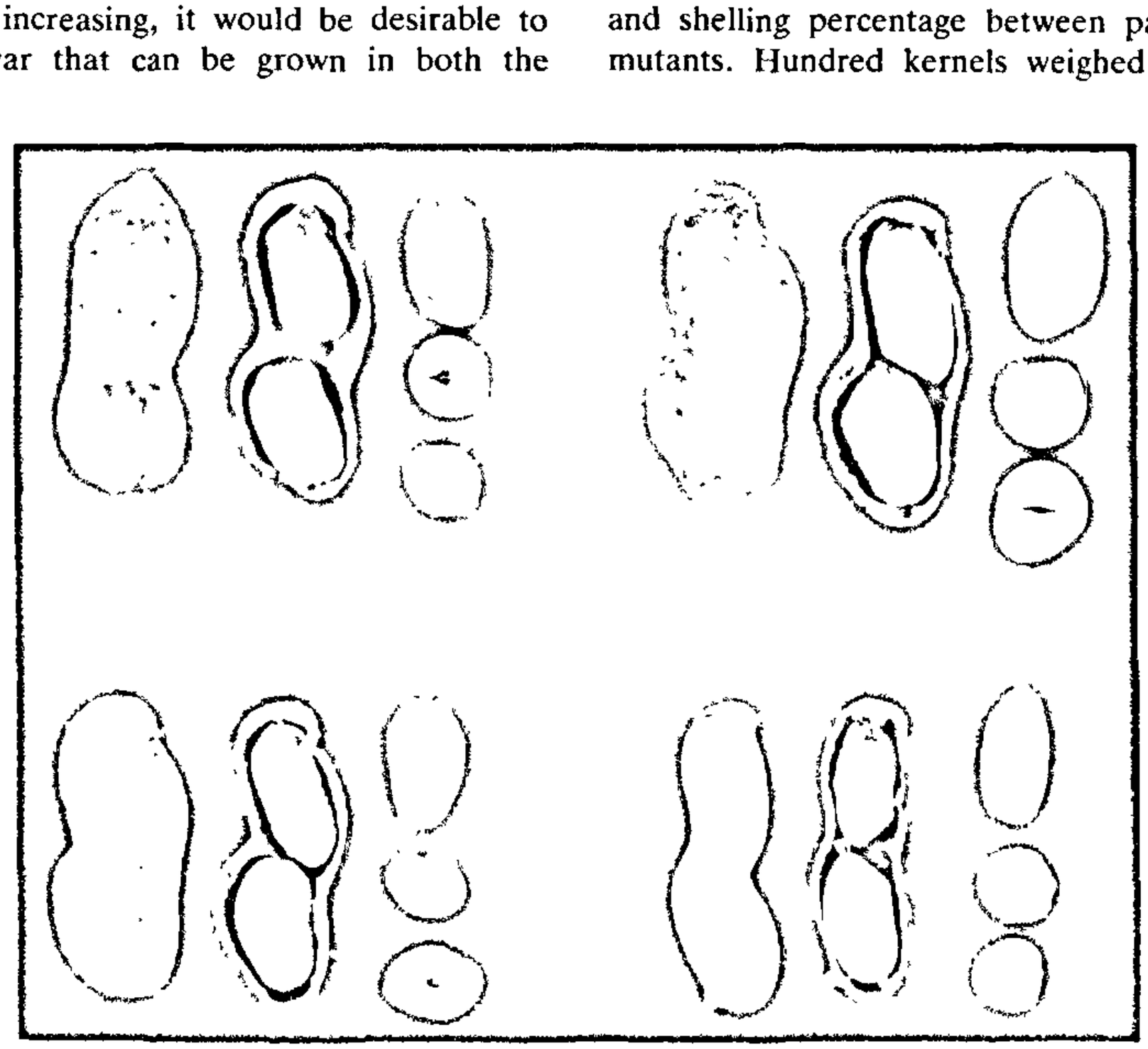

**Figure 1.** Pods and seeds, JL-24 culture and its mutants JL-24M-1 (top row), flat seed and small pod (bottom row).

**Table 1** *Pod yields of JL-24 and its mutants*

| Culture | Location | Pod yield (kg/ha) | | | |
|---|---|---|---|---|---|
| | | *kharif* season | | Summer season | |
| | | 1985 | 1986 | 1986 | 1987 |
| JL-24 | Trombay | 2507 | 2403 | 2480 | 1343 |
| JL-24M-1 | | 3083** | 2985** | 4083** | 3456** |
| JL-24M-2 | | 2940** | 2715* | 3604** | 3020** |
| Flat seed | | 2774* | 2624* | 2704* | 2659** |
| JL-24M-5 | | 2821* | 2764* | 2806 | 2867* |
| Small pod | | 2020 | 1888 | 2224 | 2165* |
| C. D. at 5% | | 256 | 231 | 684 | 728 |
| C. D. at 1% | | 339 | 346 | 819 | 842 |
| JL-24 | Gauribidanur | 3183 | 2876 | 2546 | 2230 |
| JL-24M-1 | | 3417* | 3236** | 3850** | 3699** |
| JL-24M-2 | | 3315 | 3055 | 3234* | 3454** |
| Flat seed | | 3216 | 2800 | 2744 | 2887* |
| JL-24M-5 | | 3291 | 2905 | 2806 | 2606 |
| Small pod | | 2225 | 2050 | 2398 | 2210 |
| C. D. at 5% | | 149 | 182 | 624 | 594 |
| C. D. at 1% | | 225 | 285 | 829 | 789 |

* and ** show significant superiority over JL-24 at 5% and 1% respectively.

65.9 ± 1.9 and 51.9 ± 1.1 in JL-24M-1, JL-24M-2 and JL-24 respectively, indicating increased seed size in the mutants. In addition JL-24M-1 had greater oil content 51.87 ± 0.16% as compared to 49.48 ± 0.13% in JL-24. The oil content in the other mutants was as in the parent.

The superior yield performance of the mutants in summer trial indicates a wider adaptability as compared with the parent variety JL-24. To evaluate the performance in different agro-climatic conditions all over India, JL-24M-1 has been included during *kharif*, 1987 in the AICORPO initial evaluation trials and Maharashtra state trials.

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## *PUCCINIA HYDERABADENSIS* A NEW GRAMINACEOUS RUST FROM INDIA

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DURING a survey of the rust fungus (Uredinales) flora of Hyderabad, the authors collected rust-infected leaves of a graminaceous host. A critical microscopic study of the material revealed the presence of an interesting species of *Puccinia*. A comparison with the known species of *Puccinia* on grasses (Gramineae) using Cummins[1] 'Group system' revealed it to be a hitherto undescribed species of *Puccinia*.

*Pucinia hyderabadensis* Bagyanarayana & John Ravinder sp. nov.

Spermogoniis et aeciis ignotis. Urediniis hypophyllis, minutis, sparsis, subepidermalibus, erumpentis, pulverulentis, epidermide rupta conspicua, pallide burnnea, maculis 0.2 mm diam; paraphysata, paraphysibus hyalinis, clavata vel capitata; urediniosporiis 30–40 × 20–30 $\mu$m, ovatis vel ellipsoideis, membrana 2–3 $\mu$m crassa, echinulata, cin-