

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 <sup>^</sup>	2985 <sup>^*</sup>	4083 <sup>^*</sup>	3456 <sup>^*</sup>
JL-24M-2		2940 <sup>^*</sup>	2715 <sup>^</sup>	3604 <sup>^*</sup>	3020 <sup>^*</sup>
Flat seed		2774 <sup>^</sup>	2624 <sup>^</sup>	2704 <sup>^</sup>	2659 <sup>^*</sup>
JL-24M-5		2821 <sup>^</sup>	2764 <sup>^</sup>	2806	2867 <sup>*</sup>
Small pod		2020	1888	2224	2165 <sup>*</sup>
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 <sup>^</sup>	3236 <sup>^*</sup>	3850 <sup>^*</sup>	3699 <sup>^*</sup>
JL-24M-2		3315	3055	3234 <sup>^</sup>	3454 <sup>^*</sup>
Flat seed		3216	2800	2744	2887 <sup>*</sup>
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

<sup>^</sup> and <sup>^\*</sup> 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.

27 July 1987; Revised 20 August 1987

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### **Puccinia Hyderabadensis A NEW GRAMINACEOUS RUST FROM INDIA**

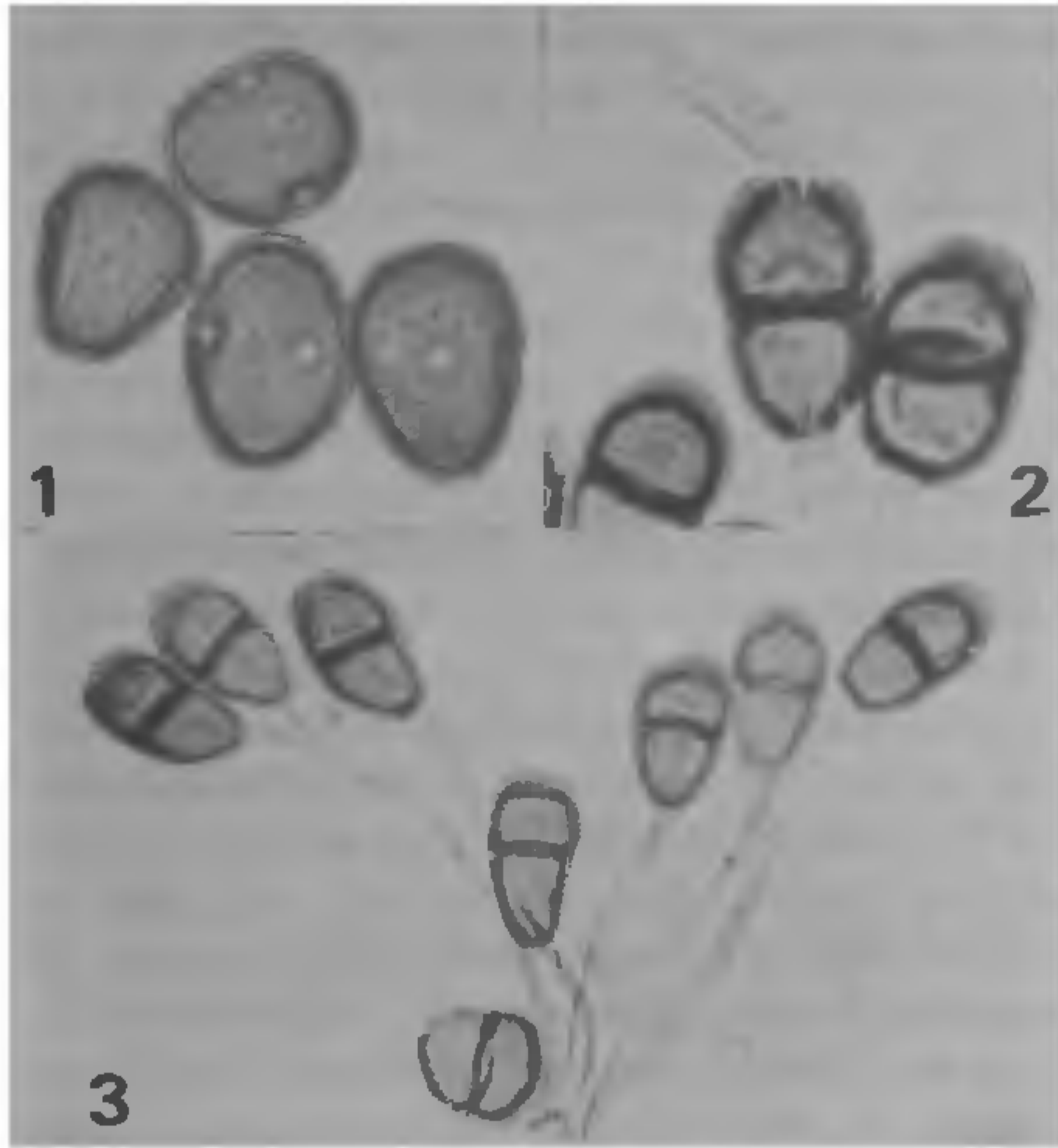
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DURING a survey of the rust fungus (Uredinales) flora of Hyderabad, the authors collected rust-infected leaves of a graminaceous host. A critical microscopic study of the material revealed the presence of an interesting species of *Puccinia*. A comparison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

*Puccinia 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 μm, ovatis vel ellipsoideis, membrana 2-3 μm crassa, echinulata, cin-



Figures 1–3. Photomicrographs of *Puccinia hyderabadensis*. 1. Urediniospores with equatorial germ pores ( $\times 800$ ); 2. A germinating teliospore ( $\times 800$ ); 3. Teliospores with long pedicels ( $\times 400$ ).

namomeo-brunnea, poris germinationis 4, equatorialibus. Teliis hypophyllis, minutis, sparsis, subepidermalibus, erumpentis, pulverulentis, epidermide rupta conspicua, maculis 0.2–0.6 mm, diam., castaneo-brunnea; teliosporiis  $30.5\text{--}50 \times 20\text{--}28 \mu\text{m}$ , ellipsoideis, membrana apicalis incrassatus  $3\text{--}5 \mu\text{m}$ , auranteo-brunnea, pedicello usque  $140 \mu\text{m}$  longo, persistenti, teliosporae in situ germinativis.

Holotypus: Foliis vivis Gramineae, Kukatpally, Hyderabad (A.P.), India, August–September 1985, E. J. Ravinder, Herb. B.

*Puccinia hyderabadensis* Bagyanarayana & John Ravinder sp. nov. (figures 1–3).

Spermogonia and aecia not known. Uredinia hypophyllous, minute, scattered, subepidermal, erumpent, pulverulent, ruptured epidermis conspicuous, pale-brown, 0.2 mm diam.; paraphysate, paraphyses hyaline, clavate to capitate; urediniospores  $30\text{--}40 \times 20\text{--}30 \mu\text{m}$ , ovate to ellipsoid, wall  $2\text{--}3 \mu\text{m}$  thick, echinulate, cinnamon-brown, germ pores 4, equatorial, Telia minute, hypophyllous, scattered, subepidermal, erumpent, pulverulent, ruptured epidermis conspicuous, chestnut-brown, 0.2–0.6 mm diam; teliospores  $30.5\text{--}50 \times 20\text{--}28 \mu\text{m}$ , ellipsoid, wall apically thickened up to  $3\text{--}5 \mu\text{m}$ ,

golden-brown, pedicels  $140 \mu\text{m}$  long, persistent, teliospores germinating “in situ”.

Holotype: On living leaves of a grass (Gramineae), Kukatpally, Hyderabad (A.P.), India, August–September 1985, E. J. Ravinder, Herb. B.

*Puccinia hyderabadensis* belongs to Group I of Cummins “Group system”. There are many rust fungi in this group and some of them with which *P. hyderabadensis* can be compared are *P. sonora* Cumm. & Hussain and *P. operta* Mundk. & Thirum. However, *P. hyderabadensis* differs from *P. sonora* in having longer urediniospores with only 4 germ pores and longer teliospores. In addition *P. sonora* is known from Mexico and USA only. The urediniospores of *P. operta* have 4–6 germ pores and the apical wall is thickened when compared to the uniformly thick urediniospores with only 4 germ pores in the case of *P. hyderabadensis*. Interestingly the teliospores of *P. hyderabadensis* show “in situ” germination which is not seen in the case of *P. sonora* and *P. operta*.

The authors are grateful to Dr P. Ramachar, Department of Botany, Osmania University, who made a world monograph of the rusts parasitizing the grass tribe paniceae, for his kind help and to Dr Bharath Kumar for encouragement.

2 May 1987; Revised 15 July 1987

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#### ELECTRON MICROSCOPIC EVIDENCE ON THE ROLE OF *STEPHANITIS TYPICA* (DISTANT) AS VECTOR OF COCONUT ROOT (WILT) DISEASE

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Root (wilt) disease, the century-old debilitating malady of coconut, was suspected to be of virus origin for about three decades<sup>1</sup>. Based on experimental evidence<sup>2–4</sup> and observational data<sup>5–7</sup>, the lace bug *Stephanitis typica* was considered transmitting the disease. But when mycoplasma-like organisms (MLOs), reported to be associated with tissues of diseased palms only<sup>8</sup> were also included among possible etiological agents, the vector role of