



AWARD LECTURES

Mundkur Memorial Award Lecture

AL(01): Plant Pathology in the Era of New Education Policy: challenges and opportunities

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Government of India has been framing education policy since 1968, whereby the third such guideline has been drafted for implementation in 2020. The policy brings a paradigm shift in the Nation's education system that is bound to influence teaching, course curriculum, pattern of degrees, departments, etc. both quantitatively and qualitatively. The government plans to have subject-wise committees, whereby there could be a committee for the agricultural sciences for catering to all concerned disciplines including that for Plant Pathology. The paper discusses the challenges of students in present times, which coupled with the demand of employers and stakeholders would determine the nature of human resource that would be relevant for the coming times. Globalisation of education in Plant Pathology may challenge mediocrity through a higher level of competition. The subject of plant pathology even today remains reasonably insignificant to the public at large due to lack of awareness related to its contributions in everyday life. Thus, there lies a case of effective advocacy by the concerned professional societies for the contributions made by the science in the past and present. Though the aim of the new policy is to make education more multi-disciplinary, the Indian National Agricultural Research and Education System is already attuned to meet such target. Further, the science of Plant Pathology has also evolved towards multi-disciplinarity by mingling with several allied subjects in order to cater to the needs of times. Professional societies involved with Plant Pathology need to appreciate the changing scenario and identify factors responsible in deciding the choice of students in favour of Plant Pathology, their aspirations related to career development, varying nature of demands, farmers, employers, sub-disciplines and allied subjects with research and extension within the country and across the globe. In the tide of global dynamism, change we must. The effort should necessarily be a journey of continuous perseverance in tune with the growing global demand for food, nutritional and livelihood security.

M.S. Pavgi Memorial Award Lecture

AL(02): Impact of yellow leaf disease in sugarcane and successful disease management to sustain crop production

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Yellow leaf disease (YLD) caused by *Sugarcane yellow leaf virus* (ScYLV), a *Poliovirus*, *Luteoviridae* occurs in major sugarcane growing countries across the world. During late 1990s it was recorded in India. Although the disease was initially thought to be a minor disease in the country, by 2005 onwards the disease severity attained epidemic status across the states. Currently, the ruling varieties in India are affected disease epidemics thereby cane productivity is reduced up to 50% and juice yield by 40-50% in severe cases. Systemic accumulation of the virus in high titre reduces vigour of the varieties in the subsequent vegetative generations or ratoons, hence their potential yield of the varieties could not be harnessed. The virus was characterized on complete genome basis and about 10 genotypes were recognized across the countries. The genotype ScYLV-IND predominantly prevails in India. Among the serological and molecular diagnostics, tissue blot and RT-PCR assays are commonly used. Among the disease management strategies, disease resistance and clean seed have the practical feasibility. Hence parental clones and

pre-release varieties are screened for disease resistance in India. Virus elimination enabled through tissue (meristem) culture in combination with molecular diagnostics is the most efficient approach to contain the disease in the field and to address varietal degeneration. Such efforts led to varietal rejuvenation and increase in cane yield by 30-35% under field conditions.

Sharda Lele Memorial Award Lecture

AL(03): Status of pomegranate wilt (*Ceratocystis fimbriata*) in Karnataka and its management strategies

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Pomegranate wilt disease caused by *Ceratocystis fimbriata* Ell. and Halst. is severely affecting cultivation in pomegranate growing regions of Karnataka. The severity of wilt disease in the regions of North Karnataka was assessed during *khari* 2016 and maximum wilt (42.10%) incidence was observed in Babaleswar village (Shruthi *et al.*, 2019); and (45.16%) was noticed in Besigeger village of Bellary district (Sonyal *et al.*, 2016); (45.80%) wilt was observed in Govindkoppa village during 2015-16 (Somu *et al.*, 2018). Whereas, (Raja *et al.*, 2017 reported that, highest incidence (33.34%) was recorded in Sira taluk of Tumkur district and (71.12% incidence was noticed in Neerbudihal village of Bagalkot district (Madhushri *et al.*, 2019). The black colored perithecium, which measure 5.13 x 4.27 μ m and endoconidia were hyaline, cylindrical and average size was 23.6 x 4.90 μ m. Aleurioconidia were thick walled ellipsoidal or pyriform with size of 18.5 x 10.10 μ m (Raja *et al.*, 2015). The highest reduction per cent of wilt incidence was noticed in *Trichoderma* plus, neem cake and neem cake + *Trichoderma* plus treated pot culture experiment under glass house condition (Tirmali *et al.*, 2018). *Ceratocystis fimbriata* grew well in all most all hydrogen ion (pH) concentration from 2.0 to 11.0. (Sonyal *et al.*, 2015). Whereas, 11 bio-agents were evaluated under *in vitro* condition, among the bio agents tested, *Trichoderma harzianum*, *Trichoderma* isolate 1 and *Trichoderma* isolate 5 recorded the maximum per cent inhibition of mycelial growth (100%) (Karakalamatti *et al.*, 2019). The plant extract *Allium sativum* tested at 10 to 30% concentration and recorded mean of (32.96%) and at found effective in inhibiting mycelial growth (Sonyal *et al.*, 2015). The pathogen being soil borne, preventive measures are of prime importance to manage this disease. Among the different systemic fungicides tested, 100 % inhibition of mycelial growth of *C. fimbriata* was recorded in propiconazole at 0.05% concentration. Among the different bio agents tested against *C. fimbriata*, *T. harzianum* was found to be the most effective with the highest inhibition of mycelial growth (88.77 %) followed by *T. viride* (86.60 %) and *P. fluorescens* (66.33 %). *Bacillus subtilis* was found less effective with (54.88 %) inhibition (Khan *et al.*, 2017).

J.P. Verma Memorial Award Lecture

AL(04): Problems and prospects of utilization of bacterial endophytes for the management of plant diseases

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Pests and diseases cause significant loss in crop productivity and are considered a major threat to food security and the incomes of farmers worldwide. We need to increase food production at least by 50% to meet the demand for the projected world's population by 2050. Meeting this tough challenge has become even more difficult because of climate change that might affect water availability and the intensity of diseases. Though pests and disease management