

### Dr. S. Ayyappan, Secretary DARE & DG ICAR visits DGR (Junagadh, April 13, 2013)

Dr. S. Ayyappan (Secretary, DARE & DG, ICAR) visited Directorate of Groundnut Research (DGR), Junagadh on April 13, 2013. The prominent persons in his entourage were Dr. N.C. Patel (Vice-Chancellor, Junagadh Agricultural University, Junagadh; Dr. Madan Mohan, ADG, Fisheries, ICAR; Dr. G. Syda Rao (Director, CMFRI, Cochin); Dr. T.K.S. Gopal (Director, CIFT, Cochin); Dr. C.J. Dangaria (Director of Research, JAU, Junagadh) and Shri P.L. Darbar (IAS, Commissioner of Fisheries, Gujarat). Prior to visiting DGR, Dr. Ayyappan had launched the harvest of lobsters and sea fish from sea-cage farm, established by CMFRI at Somnath coast.

At DGR, the DGR Director, Dr. J.B. Misra accompanied by the staff extended a warm welcome to Dr. Ayyappan. Later, Dr. Misra made a brief presentation on the current scenario of groundnut in the country and abroad, its production, consumption and export. Besides, he also highlighted the most important issues related to the functioning of DGR. On this day, Dr. Ayyappan launched DGR's new and updated web-site and also released DGR's first bi-lingual Newsletter (in Hindi and English). Dr. Ayyappan then interacted with nearly each and every member of DGR staff to know the constraints and grievances, if any, faced by them in both scientific and administrative spheres. While addressing the gathering, he emphasized that research activities should be output driven and must be also lead to publications in high impact journals. He briefed the scientists about the various platforms being contemplated for supporting crucial research activities cutting across the ICAR research institutes and also bringing in its fold universities and institutions outside ICAR system. For this

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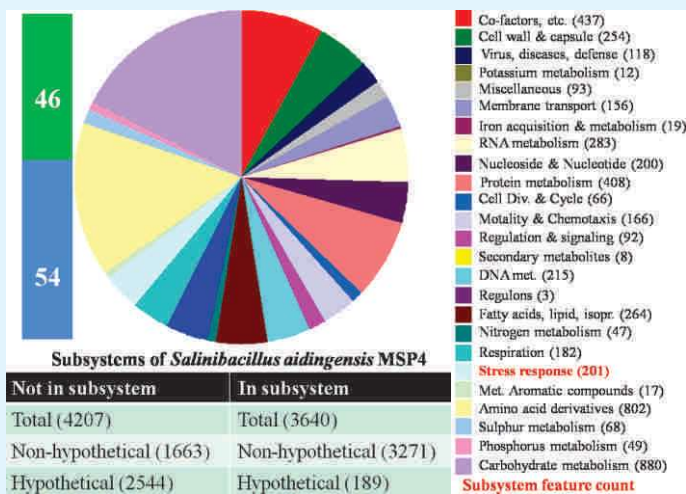


Release of DGR's first bi-lingual Newsletter (in Hindi and English)



Dr. S. Ayyappan, Secretary, DARE & DG, ICAR launches new and updated DGR website

has been released by NCBI, a global repository, and assigned an accession number APIS01000000 and subsequent publication of the paper in *Genome Announcements* (Pal et al. 2013). With this accession number, DGR became the first in the world to report the genome sequence of the genus *Salinibacillus* which has been added to the global kitty for further exploration. Exploring the genomes of extreme halophiles will pave way for a comprehensive understanding of the mechanisms of tolerance of salinity i.e. the genes, the biochemical pathways, and the metabolites involved in affording osmotolerance. Further studies on the identification of genes and alleles responsible for the synthesis of biologically active enzymes under such extreme conditions in these organisms, are in progress.



### Yellowing in Groundnut- A Nutrient Deficiency Complex

Yellowing in groundnut is wide-spread and is observed across various agro-climatic zones, soil types and in varietal groups. There are generally two types of yellowing in groundnut, viz., yellowing in top leaves which occurs due mainly to the deficiency of iron and other micronutrients and partially due to the sulphur deficiency this is quite common in calcareous soils. The other type occurs due to the deficiency of nitrogen, particularly during 15-50 days after emergence (DAE) on older leaves. Yellowing due to the Fe-deficiency appears right from the stage of germination and continues to occur on younger leaves throughout the crop season with a maximum intensity in the field during 30-70 DAE the peak vegetative growth phase.

Yet another yellowing, suspected to occur due to combined deficiencies of sulphur, nitrogen and iron, appears 70 days onwards till maturity in *Spanish* and 90 days onwards till maturity in *Virginia* cultivars and thus coincides with pod and seed formation stages. Yellowing is observed more often in irrigated crop compared to rain-fed crop which may be due to partial anaerobic conditions caused by irrigation leading to restricted supply of iron and other nutrients and, higher nutrient requirement of irrigated crop due to better growth. Combined foliar spray of ferrous sulphate (0.5%) and citric acid (0.1%) in 85-day old crop (TG 37 A) reduces yellowing to a great extent.

If corrective measures are not taken, depending upon severity, yellowing may cause severe loss of yield. There is need for undertaking systematic research to identify the causes of yellowing in a comprehensive manner for developing efficient preventive as well as the remedial measures.



Yellowing susceptible (left) and tolerant (right) varieties of groundnut  
(Inputs: Ram A. Jat and A.L. Singh)

### Mealybug: an emerging threat to groundnut crop

During *kharif*-2012, an unidentified species of mealybug was observed in the standing groundnut crop in the DGR fields. The mealybug was later identified as *Solenopsis*/cotton mealybug, *Phenacoccus* sp. nr. *Solenopsis* Tinsley. This is possibly for first time mealybug infestation is being reported in groundnut crop. The males of *Solenopsis* mealybug are winged while the females are wingless. Females, which feed on plant sap, are normally seen in crevices between branches of stem, petiole, and veins and sometimes even found on roots and pods. They inflict both direct and indirect damage to the crop by sucking sap from growing parts of plant and also transmitting the viruses. These bugs while attached to the plants, secrete a powdery wax layer around, and then lay 50-100 eggs in the same protective layer. The crawlers, first instar nymphs are pinkish-red in colour actively disperse on uninfested plant parts. With the changing climatic conditions, the mealy bugs may become a concern for groundnut crop in the years to come.



Female mealybugs feeding on groundnut leaves



Groundnut pods infested with mealybugs

(Inputs: Nataraja M.V., Poonam Jasrotia and Harish G.)

### Interspecific derivative NRCG CS 319: a source of resistance to *Sclerotium* stem rot

Stem rot caused by *Sclerotium rolfsii*, in groundnut now recognized as a widespread and serious disease of groundnut. Yield losses up to 30% (sometimes even higher) are seen quite often. Considering the severity and wide spread nature of the disease in groundnut growing areas, research was focused on identification of resistant genotypes for further breeding programme. For identifying sources of resistance for breeding programs, several genotypes were evaluated under artificially inoculated conditions in glass house. Less than 20% incidence was seen in an interspecific derivative of Virginia bunch, NRCG