



डीजीआर DGR

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Mermithid nematode: a natural parasite of *Helicoverpa armigera* in groundnut

Mermithids are obligate parasite of gram pod borer (*Helicoverpa armigera*) which happens to be one of the most important insect pests of groundnut too. An unidentified mermithid parasitizing larva of *Helicoverpa armigera* has been noticed in the Junagadh district of Gujarat in July-August (2010) (Fig. 1-4). Three to six juveniles were recorded in each larvae and the rate of parasitism was around 40 percent. After infecting the insect, the juveniles of mermithid nematodes multiply in the hemocoel of hosts. The mermithid infected larvae of *Helicoverpa* becomes inactive, sluggish and turn into pale green/lemon colour. The fully developed mermithid juveniles emerge by rupturing the host's integument which results in the death of the insect. To the best of our knowledge, this is the first report of mermithid nematodes showing its role in the natural control of *H. armigera* in groundnut. Dampness of the sample sites, together with relatively high level of rainfall during *kharif* season (2010) could be one of the possible reasons, for high incidence of mermithid parasitism on *H. armigera* larvae in Junagadh, Gujarat.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

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Fig. 1-4. Mermithid parasite of *H. armigera*. 1) Parasitised *Helicoverpa* larvae showing pale green colour 2) Postparasitic juvenile mermithid that has just emerged from its host, *H. armigera* 3) *Helicoverpa* larvae with mermithid nematode 4) Varying size of Mermithid nematodes (2.5-24 cm)

Input: Harish, G. (Scientist, Entomology) and Prasanna Holajjer (Scientist, Nematology)

Annual Kharif Groundnut Workshop held

The annual *kharif* groundnut workshop was held at MPUA&T, Udaipur, Rajasthan from 22-24 April, 2011 in which about 100 delegates from 22 regular and 8 AICRP-G centres, and from various Central and State Government agencies participated. Dr. S.R. Maloo, Director Research, MPUA&T, Udaipur welcomed the gathering. Dr. J.B. Misra, Director, DGR, Junagadh presented the global groundnut scenario and compared the world average yield with the Indian yields. He pointed out that groundnut varieties do show year-to-year variation in the yield, but there is a slow and steady rise in the overall productivity over the years. Dr Misra has also brought to the notice about the increase in the area and production of groundnut in the states of West Bengal, Odisha and Rajasthan. He underlined the fact that the major bottlenecks in groundnut production are continued use of old varieties like TMV-2 and JL-24 and severe shortage of timely availability of quality seeds of improved varieties. Besides, cutting edge technologies like micro-irrigation, fertigation and polythene mulching for irrigated groundnut; hydrogel for drought tolerance; and quality control of bio control agents and bio-fertilizers can help in further boosting the yields of groundnut in the country. Director DGR stressed on the mechanization for reducing the cost of cultivation and emphasized that the old and obsolete varieties should be de-notified. Further he is of opinion that exploring the possibility of development of suitable compound or complex fertilizers and addressing climatic change are the grey areas to be addressed through the AICRP-G system.

Dr. B.B. Singh, ADG (O&P), ICAR and the Chief Guest, in his address mentioned that since technology transfer in groundnut is rather slow, the complete package module should be adopted in addition to integrated crop module approach to address the bottlenecks in both *kharif* rainfed and irrigated groundnut. He stressed about the development of photo- and thermo-insensitive varieties through wide hybridization and emphasized upon the evaluation of interspecific derivatives for resistance/tolerance to various biotic and abiotic stresses for further use in crop improvement programme.

The Hon'ble Vice Chancellor, Dr. S.S. Chahal, MPUA&T, Udaipur in his presidential address indicated that after green revolution, due to the availability of irrigation facilities in the states of Punjab and Haryana, the groundnut crop has been marginalized. He has also mentioned about the yield gap that exists between India and China and urged the scientists to bridge the gap by developing suitable varieties and crop management technologies. Dr Chahal underlined that in India stabilization of yield in *kharif* is one of the major issue. He opined that increasing the seed replacement rate through enhancing the quality seed production, development of stress tolerant varieties and quality issues are the major research focus that has to be addressed in near future. He added that research on climatic change should be initiated for sustainable groundnut production and urged the scientists to develop suitable post-harvest management practices to reduce the losses and diversify uses of groundnut.

The session ended with the vote of thanks by Dr. P.K. Gupta, Zonal Director Research, Udaipur.



Kharif Groundnut Workshop at MPUA&T, Udaipur (22-24 April 2011)

Groundnut after potato: A potential summer crop in Uttar Pradesh

In Uttar Pradesh, generally vegetables and fodder are grown after potato on small scale and most of the area remains fallow. This practice is primarily due to the unavailability of any economically viable crop. If a part of this fallow land is diverted for groundnut production, it will boost both the oilseed production in the country as well as profit of the farmers as cash crop. With this presumption, seven groundnut cultivars supplied by Directorate of Groundnut Research, Junagadh, were raised after potato at CPRI Campus Modipuram, Meerut during summer season of year 2010 for primary evaluation. The highest (52.06 q/ha) and lowest pod yields (22.78 q/ha) were obtained in the varieties CSMG 2014 and ICGS 1 respectively. The details of the yields of other varieties are given in the table.

Thus, considering the total area under potato in Uttar Pradesh which is approximately 440 thousand



hectares and the yield potential of groundnut crop, there appears bright prospects of increasing the area under groundnut by following the potato-groundnut cropping system in the region. Being leguminous crop, this practice will also add to the fertility of soil.

Pod yields (q/ha) of different groundnut varieties on dry weight basis at CPRI Campus, Modipuram in summer season (2010)

Groundnut variety	Yield (q/ha)
CSMG 2014	52.06
Dh 86	42.81
TG 51	41.56
SG 99	38.6
TG 37A	34.81
Avtar	33.15
ICGS 1	22.78



(Input: Dr. N. C. Upadhyay, Principal Scientist, CPRI, Campus Modipuram)

NFBSFARA project “Unraveling biochemical and molecular basis of bacterial and fungal endo-symbiosis for management of abiotic stresses in plants” takes off at DGR, Junagadh

The project on 'Unraveling biochemical and molecular basis of bacterial and fungal endo-symbiosis for management of abiotic stresses in plants' wherein Directorate of Groundnut research is a lead centre, took off at DGR on 1st June, 2011. The Amity Institute of Microbial Technology, Amity University, Uttar Pradesh and Central Arid Zone Research Institute, Regional Research Station, Kukma, Bhuj are the partner institutes in the project. Dr.K.K. Pal, Senior Scientist, Microbiology, is the

Consortium Principal Investigator of the project. The project with a total outlay of 261.3028 lakhs has been sanctioned by National Fund for Basic, Strategic and Frontier Application Research in Agriculture (NFBSFARA) with the following objectives:

- To identify the role of endosymbionts in imparting moisture, salinity and high temperature tolerance to groundnut and pearl millet in arid and semi-arid areas
- To understand the physiological, biochemical and molecular basis of imparting tolerance to abiotic stresses by endosymbiotic associations
- To validate the role of endosymbiotic associations in alleviating abiotic stresses in groundnut and pearl millet under field conditions

Meetings held

Joint meetings of ICRISAT-ICAR CRPs on Grain Legumes and Dryland Cereals

CGIAR has envisaged revamping its functioning better especially in the matter of funding with a greater emphasis on funding of projects formulated to work on collaborative mode amongst various international and national institutes. With a view to exploring the areas of possible collaboration and also identifying the partnering institutions, a meeting was convened at ICRISAT, Patancheru by Dr. William Dar, DG, ICRISAT during April 18-19, 2011. Among others, all the Directors and Project Co-ordinators of ICAR research units working on grain legumes and dryland cereals attended the meeting. The meeting was chaired by Dr. Dave Hoisington, DDG, ICRISAT. At the meeting, the Directorate of Groundnut Research was represented by Dr. J.B. Misra, Director, DGR.



Joint meetings of ICRISAT-ICAR
CRPs on Grain Legumes and Dryland Cereals
18-19 April 2011
ICRISAT, Patancheru



Research Advisory Committee (RAC) Meeting



13th RAC meeting (2-3 June 2011)

The 13th meeting of Research Advisory Committee was held at DGR, Junagadh on 2-3 June 2011. Dr. J.H. Kulkarni, former Vice Chancellor, UAS, Dharwad, was the chairman and other members who have participated in the meeting are Dr. S.N. Nigam, Principal Groundnut Breeder, ICRISAT; Dr. A.M. Parakhiya, Director, Extension Education, JAU, Junagadh and Shri Haridasbhai Zala, Progressive Farmer, Vadavi, Junagadh. Presentations on ongoing research projects were made by the PIs or co-PIs which were discussed thoroughly and the work plan was modified keeping in view the remarks of the committee. In their concluding remarks, Chairman and the members of RAC appreciated the good work that has been done at DGR and pointed out the need for reorienting the research work on certain aspects.

Participation in Conferences/Workshop/Seminars/Symposia/Training/Programmes

Name	Programme	Venue	Date
Mr. S.K. Bishi	Training on: “Commercial level application of UV, visual and NIR spectroscopy methods, fluorescence spectroscopy & chemometric data analysis for evaluation of foods and biomaterials”	CIPHET, Ludhiana	3-8 January 2011
Dr. Manesh Dagla & Dr. Narendra Kumar	Winter school on “Marker assisted selection for enhancement of rust resistance and quality traits in wheat”	DWR, Karnal	5-25 January 2011
Dr. K.K. Pal	Training on: “Statistical and computational genomics data analysis”	IASRI, N. Delhi	11-21 January 2011
Dr. Prasanna Holajjer & Mr. Harish G	Training on: “Biorational insect pest management”	CAFT, TNAU, Coimbatore	17 February-9 March 2011
Mr. S.K. Bishi	International conference “Plant Science in Post Genomic Era”	Sambalpur University, Orissa	17-19 February 2011
Mr. Abhay Kumar	Training on: “Characterization of drought adaptive traits and molecular approaches to introgress them for crop improvement”	UAS, GKVK, Bangalore	March 4-24, 2011
Mr. S.K. Bishi & Dr. K.Chakraborty	National level seminar on: “Functional food: A new concept for sustainable livelihood”	JAU, Junagadh	10 March 2011
Dr. D. Bhaduri	National seminar on: “Soil health improvement for enhancing crop productivity”	TNAU, Coimbatore	17-18 March 2011
Dr. D. Bhaduri	Training on: “Data Analysis of Natural Resource Management Research Using SAS (under NAIP Consortium: Strengthening Statistical Computing for NARS)”	IASRI, N. Delhi	20 – 25 June 2011
Dr. K.Chakraborty	Training on: “Computational Genome Analysis using ANVAYA”	IASRI, N. Delhi	22 -24 June 2011

Distinguished Visitors

Date	Visitor	Designation/Institute/Place
January 13, 2011	Shri E.K. Majhi	Joint Secretary, DAC, Ministry of Agriculture, N. Delhi
	Shri C.M. Pandey	Additional Commissioner, DAC, Ministry of Agriculture, New Delhi
January 15, 2011	Dr. M.M. Pandey	DDG (Agril. Engg.), ICAR, New Delhi
January 27, 2011	Dr. H.P. Singh	DDG (Horticulture), ICAR, New Delhi

Institute Research Committee (IRC) Meeting

The 56th and 57th meetings of Institute Research Committee were held on 27 January - 3 February 2011 and 9th June 2011, respectively. Both the meetings were chaired by Dr. J.B. Misra, Director, DGR. In both the meetings Dr. Misra urged the scientists to initiate work on new areas of research like seed coating, climate change, harmonizing seed dressing, etc. Other issues like growing labour problem and assignment of work to the new scientists were also discussed. During the meetings, project-wise progress of research work was reviewed and the technical programmes for ensuing seasons were finalized. The PIs of various research projects presented the highlights of work done in their respective projects and then proposed the future plans of work. The plans of work were discussed thoroughly and modified wherever required before being approved by the house.

DGR bids farewell

- Mr. Suraj Pal, T-5, Technical Officer, was relieved from DGR on 6th January 2011, upon his transfer to Central Institute for Research on Goats (CIRG) Makhdoom.
- Mr. R.N. Mallik, Administrative Officer, was relieved from DGR on 11th February 2011, upon his transfer to Central Institute for Research on Goats (CIRG), Makhdoom.
- Dr. R.S. Jat, Scientist, Agronomy was relieved from DGR on 28th February 2011, upon his selection at Directorate of Medicinal and Aromatic Plants, Anand as Senior Scientist.
- Dr. P.C. Nautiyal, Principal Scientist, Plant Physiology was relieved from DGR on 20th April 2011, upon his transfer to IARI, N. Delhi.
- Mr. Sugadh Singh, T-3, was relieved from DGR on 18th June 2011, upon his transfer to Central Institute for Research on Goats (CIRG), Makhdoom.



Dr. P.C. Nautiyal receiving a farewell memento



Mr. Sugadh Singh receiving a farewell memento from Dr. Radhakrishnan T.

Obituary

Mr. Bikha Barea, SSS, expired on 10th January 2011. The DGR family expresses its condolences to the bereaved

Our New Colleagues



Dr. Ajay B.C. joined DGR, on 10th January 2011 as Scientist, Plant Breeding, after completing the 92nd Foundation Training Course at NAARM, Hyderabad



Mr. S.M. Sahare, joined DGR, on 20th April 2011 as Administrative Officer on his transfer from Central Institute for Cotton Research, Nagpur.

The staff of DGR welcomes the new entrants and wishes them a successful career in ICAR/DGR.

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