



# **Advances in Arid Legumes Research**

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**Indian Arid Legumes Society**  
**Scientific Publishers (India), Jodhpur**

# ADVANCES IN ARID LEGUMES RESEARCH

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## Foreword

Arid Legumes are drought hardy and deep rooted group of crops which show high adaptation to climatological constraints. They require limited agronomic inputs and less after care. These crops provide nutritive edible proteins to the traditionally vegetarian masses. They also enrich the soil through  $N_2$  fixation and therefore, contribute towards good soil health. These crops are also important source of organic food, feed and fodder and also constitute important component of major cropping systems in arid and semi-arid regions. Guar, by far a major arid legume, is a large source of an industrial product, galactomannan polysaccharide which is being largely exported to many countries contributing to foreign exchange worth Rs. 8,00-9,00 crores annually. Thus, Guar has attained status of an industrial crop and means of employment generation through a number of guar gum industries located in guar belt of Rajasthan, Haryana and Gujarat. Similarly, dal moth and bhujia industries are heavily dependent upon another important arid legume moth bean. Horse gram consumed through varied dietary ways, is well known for its medicinal values, more particularly for naturopathy of kidney problems. Green pods of guar, moth bean and cow pea are source of delicious vegetable, in many households during summer to early winter season.

These crops occupy more than 49.69 lakh hectares of land in India in many states particularly, in Western and Southern states and are characteristically known for their poor productivity. Rajasthan alone occupies nearly 60% area under these crops, more particularly guar and moth bean. These crops are preferentially cultivated by the marginal and submarginal farmers due to their dismally low investment capacity.

These legumes, therefore, necessitate grass root infrastructure improvement for their overall upliftment and expansion in newer and non-traditional areas.

Integrated research efforts dealing with innovated agro-techniques and inputs specific to a particular crop in a particular zone, are required to be taken up at a faster pace. The intended users are largely unskilled and simple, thus, adoptable technologies particularly seed based industries meeting local requirements and also focusing on quality standards of export oriented products need more attention.

Indian Arid Legumes Society founded in January 2001 commendably organized **First National Symposium on Arid Legumes for food, Nutrition Security and Promotion of Trade** on 15-16 May 2002 at Hisar. The symposium covered a wide range of topics to bridge the gap between realizable and realized yields. The Society is now publishing the Proceeding of the National Symposium at right time when we are facing worst drought of the decade. The office bearers and the members of the Society deserve, appreciation for their valuable contribution. It is hoped that the present compilation on *Advances in Arid Legumes Research*, would be useful to those engaged in cause of Arid Legumes improvement in India.



**M. Rai**



## Preface

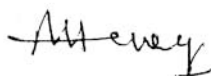
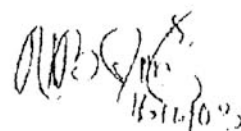
In Indian context, arid legumes consist of moth bean, clusterbean, horse gram and cow pea. This is an arbitrary classification for grouping the grain legumes generally grown in the fragile lands of arid regions of country. These four legume crops are grown in drought prone areas of the country, specially in Rajasthan, Gujarat, Haryana, Maharashtra, Karnataka and Tamil Nadu. The research work for improvement of these crops is continuing by the concerned states since 1950, but the national efforts in an integrated manner started in 1977 when the first workshop for clusterbean improvement was organized at CAZRI, Jodhpur. This research network was organized on voluntary basis which continued till 1985. Considering the importance of clusterbean as an export commodity, the Indian Council of Agricultural Research sanctioned All India Coordinated Research Project on Clusterbean in 1985. Later, on the recommendations of the GVK Rao, Committee three other legume crops viz., moth bean, cow pea and horse gram were included in this project in 1992 and the same was conveniently called as **All India Coordinated Research Project on Arid Legumes**.

The arid legumes are extremely important for arid zones where these crops can be grown successfully in poor and marginal soils with scanty and highly erratic rainfall situations. In this fragile ecosystem where the crop season extends anywhere from 60-90 days other legume crops do not find favour of the farmers. For example moth bean cultivars can be harvested in 60-70 days and clusterbean may take about 100 days. Because of poor and erratic rainfall pattern, the productivity of these crops is very low. Since, arid legumes are the only legume crops which can be grown in such areas, farmers have no choice except to grow these crops with hope of some returns. Improvement of arid legume has now assumed national importance. Clusterbean, on the other hand, has now become an important crop for export. Farmers get high premium to their produce because of export of guar gum to many other western countries. Horse gram and cow pea are grown throughout the country in small areas. The research work for improvement of horse gram has been far from satisfactory.

Keeping in view, the requirement for a comprehensive approach towards the development of improved technology and bringing in awareness about the potential of these crops for indigenous use, as well

as export purposes, the research workers, representatives of other agencies involved in the development, trade and export decided to step-up a common platform for sharing and exchanging the ideas with respect to arid legumes. Accordingly the arid legume workers met under the banner of First National Symposium on 15-16<sup>th</sup> May, 2002 at CCS HAU, Hisar entitled "**Advances in Arid Legumes Research and Development**". In this symposium, papers were presented on all key issues of research, extension, trade, marketing, export and other development activities which have been brought up in the form of proceedings. We hope these Proceedings would be useful to all researchers, extension officials both in public and private sectors, as well as the students involved in arid legume improvement.

We would like to thank all those persons who have contributed the papers in this Symposium and all other organizations and institutes i.e., ICAR, New Delhi, CAZRI, Jodhpur, CCS HAU, Hisar which have helped in one or the other way in organizing this symposium.

**A. Henry****D. Kumar****N.B. Singh**

# CONTENTS

## THEME-1 GENETIC IMPROVEMENT AND GENETIC RESOURCES

1.	Major Advances and Future Prospects of Pulse Production in India - <i>N.B. Singh and Jagmail Singh</i>	1
2.	Quantitative Genetic Analysis in Some Genotypes of Clusterbean - <i>S.P.S. Chaudhary, A.K. Choudhary, S.S. Shekhawat and N.P. Singh</i>	9
3.	Variability and Correlation Studies in Some Genotypes of Clusterbean - <i>N.P. Singh, A.K. Choudhary and S.P.S. Chaudhary</i>	14
4.	Varietal Diversity in Clusterbean and Green Gram - <i>B.K. Mathur and A. Henry</i>	19
5.	Genetic Architecture of Seed Yield and its Components in Clusterbean - <i>Khushwinder Singh Brar and Kulbhushan Kumar Grover</i>	23
6.	Induced Mutations for Creating Variability for Economic Traits in Cowpea - <i>S.K. Mishra and Daya Chand</i>	26
7.	Radiation Induced high yielding Determinate Mutants in Cowpea - <i>R.N. Pandey and P. Dhanasekar</i>	30
8.	Heterosis in Cowpea - <i>S.H. Haibatpure, S.D. Solanki and S.B.S. Tikka</i>	34
9.	Heterosis and Inbreeding Depression for Grain Characters in Cowpea - <i>Anupam Singh and R.N. Arora</i>	38
10.	Comparison of Breeding Methods for Isolations of Promising Segregants in Advanced Generations in three Crosses of Cowpea - <i>R. Nagaraja, K.P. Viswanatha and G. Girish</i>	42
11.	Development of Early Maturing White Seeded Cowpea Varieties in Rajasthan - <i>Durga Dass Saini</i>	47
12.	Association Analysis for Grain Yield and Contributing Characters in Cowpea - <i>L.D. Parmar, R.M. Chauhan and S.B.S. Tikka</i>	50
13.	Diversity for Economic Traits in Cowpea - <i>S.K. Mishra, B.B. Singh, Daya Chand and K.N. Meena</i>	54
14.	Variability and Path Analysis in Grain Cowpea - <i>Vineeta Kumari, R.N. Arora and J.V. Singh</i>	59
15.	Genetic Variability for Crude Protein & <i>in vitro</i> Protein Digestibility in Cowpea - <i>U. N. Joshi, R.N. Arora and R.S. Sangwan</i>	63
16.	Varietal Divergence in Cowpea - <i>A. Henry and B.K. Mathur</i>	67
17.	Combining Ability in Cowpea - <i>R.M. Chauhan, S.D. Solanki, P.T. Patel and S.B.S. Tikka</i>	71



18.	Radiobiological Responses of Cowpea - Seema Gaur, Manju Singh, Neetu Rathore, P.S. Bhati and D. Kumar	75
19.	Induced Polygenic Variability in Moth bean - Manju Singh, Seema Gaur, Neetu Rathore, P.S. Bhati and D. Kumar	79
20.	Estimation of Genetic Parameters in Moth bean - S.S. Solanki, R.C. Sharma, R.K. Kakani and D.K. Garg	84
21.	Mutation Breeding in Moth bean - R.C. Sharma, P. Joshi and R.K. Kakani	88
22.	Genetic Variability and Character Association in Moth bean under Hyper Arid Region - D.K. Garg, R.K. Sharma, R.C. Sharma and P.C. Gupta	93
23.	Genetic Divergence, Variability and Character Association in Moth bean - R.K. Kakani, R.C. Sharma and D.K. Garg	98
24.	Genetic Divergence in Moth bean - R.C. Sharma, R.K. Kakani, S.S. Solanki and D.K. Garg	104
25.	Evaluation of Germplasm Lines of Moth bean - R.K. Kakani, D.K. Garg, R.C. Sharma and Shiv Narayan	107
26.	Character Associations over Environments in Moth bean - S.D. Solanki, R.M. Chauhan and S.B.S. Tikka	112
27.	Hybridization Studies in Horse gram - E. Sreenivasan	115
28.	Genetical Study of Variability Parameters in Horse gram - B. Ram, R. Pandya, L.K. Sharma and B. Vaid	120
29.	Correlation and Path Analysis for Yield in Horsegram under two Rainfall Regimes - R. Pandya, B. Ram, B. Vaid and L.K. Sharma	123
30.	Collection and Evaluation of Germplasm of three Arid Legumes from Rajasthan - O.P. Yadav, A. Henry and B.S. Yadav	126
31.	Genetic Variation in Phytase and Acid Phosphatase Contents of Legume Seeds - R.S. Yadav, D. Kumar, B.M. Sharma and J.C. Tarafdar	131
32.	Character Interrelationship in Grain Type Indian bean - S.B.S. Tikka, R.M. Chauhan, L.D. Parmar and S.D. Solanki	136
33.	Inheritance of some Characters in Lablab Bean - A. Bhuvaneshwari and A.R. Muthiah	140
34.	Breeding Systems in Senna - S.K. Jindal and Manjit Singh	144
35.	Performance of Senna accessions for Dry Biomass and its Related traits in Western Rajasthan under Irrigated Conditions in Canal Command Area Manjit Singh and S.K. Jindal	148
36.	Performance of Senna Genotypes for Dry Biomass and its Related Characters in Western Rajasthan under Irrigated Conditions in Canal Command Area - P.R. Kothari, S.K. Jindal and Manjit Singh	152

37.	Morphological Variability for Seed Characters in <i>Acacia senegal</i> - S.K. Jindal and Manjit Singh	155
THEME-2		
<b>CROP PRODUCTION AND CROPPING SYSTEM</b>		
38.	Crop Production Strategies for Arid Legumes with Remunerative Efforts and Cost - A. S. Faroda and Raj Singh	161
39.	Integrated Nutrient Management through Arid Legumes in Rajasthan - Pratap Narain and Praveen-Kumar	172
40.	Significance of Biofertilizers for Sustainable Production of Arid Legumes - A.V. Rao and T.K. Bhati	179
41.	Mobilization of Phosphorus Nutrition in Soil during Clusterbean Cultivation - K.P. Tripathi and Praveen-Kumar	188
42.	Response of Clusterbean to Levels of Phosphorus and Sulphur under Rainfed Conditions - I.C. Patel, M.M. Patel, A.I. Patel, A.G. Patel and S.B.S. Tikka	193
43.	Influence of N, P and S on Yield and Chemical Composition of Rainfed Clusterbean - R.R. Shakhela, K.I. Patel and J.A. Patel	196
44.	Response of Early Maturing Guar Variety to Date of Sowing and Seed Rate - B.D. Yadav, R.K. Joon and Virender Kumar	199
45.	Weed Control in Cowpea Under Rainfed Conditions - M.M. Patel, A.I. Patel, I.C. Patel and S.B.S. Tikka	203
46.	Production Potential and Economics of Clusterbean under Various Geometries and Intercropping Systems - Jagdev Singh, Anil Kumar and Bikram Singh	207
47.	Relative Performance, Evapotranspiration, Water and Nitrogen Use Efficiency and Nitrogen Metabolism of Diverse Genotypes of Clusterbean under Arid Environment - B.K. Garg, S. Kathju, S.P. Vyas and A.N. Lahiri	212
48.	Effect of Phosphorus and Sulphur on Growth and Yield of Clusterbean - Anurag Saxena, Y.V. Singh, D.V. Singh and M. Patidar	221
49.	Response of Clusterbean Varieties to Fertility Levels and Cropping Systems under Arid Conditions - Raj Singh and M.A. Khan	225
50.	Effect of Sowing Methods and Weed Management on Weeds and Yield of Clusterbean - Raj Singh and Bhagwan Singh	229
51.	Effect of Thiourea on Dew bean Grown in Low Fertile Undulating Soil of the Thar Desert - Ishwar Singh, M.S. Rathore and M.S. Chandawat	233
52.	Response of Cowpea to Levels of Phosphorus and Sulphur - M.M. Patel, A.I. Patel, I.C. Patel and S.B.S. Tikka	236

53.	Effect of Thiourea on Cowpea Productivity under Rainfed Conditions - B.D. Yadav, R.K. Joon and D.S. Rana	239
54.	Response of Horse gram Cultivars to Fertilizers and Spacing under Rainfed Conditions - L.K. Jain and S.N. Sodani	242
55.	Response of Horse gram to Doses of Phosphorus and Sulphur Under Rainfed Conditions - S.N. Sodani and L.K. Jain	245
56.	Influence of Micro-Environmental Changes and Water Stress on Mung bean Productivity Under Arid Zone Farming Systems - R.S. Singh and A.K. Sharma	248
57.	Effect of Agronomic Practices on Yield and Milling Quality of Green gram - N.L. Joshi, P.C. Mali and Anurag Saxena	255
58.	Response of Mung bean to Zinc and Iron on Vertisols in South-Eastern Plains of Rajasthan - P.K. Gupta, N.N. Sharma, H.K. Acharya, S.K. Gupta and G.C. Mali	259
59.	Effect of K and S Fertilization on Mung bean Productivity Grown on Vertisols in Hadoti Region of Rajasthan - G.C. Mali, S.K. Gupta, P.K. Gupta, H.K. Acharya and N.N. Sharma	263
60.	Response of Pigeonpea to S and Zn Fertilization on Vertisols in South-Eastern Plain of Rajasthan - G.C. Mali, N.N. Sharma, H.K. Acharya, S.K. Gupta and P.K. Gupta	267
61.	Competitive Relationship of Arid Legumes and Pearl millet Inter Cropping System Under Rainfed Conditions of Western Rajasthan - N.D. Yadav and R.K. Beniwal	272
62.	Influence of Khejri on Yield of Arid Legumes and Soil Fertility - S.N. Jaimini, S.B.S. Tikka and J.M. Patel	275
63.	Productivity of Grain Legumes in Agri-Silviculture Systems under Hot Arid Conditions - B.M. Sharma	279

## THEME-3

**QUALITY IMPROVEMENT AND VALUE ADDITION**

64.	The Industrial Potential of Arid Legumes Processing Industry in India in the Post Gatt Scenario-Problems and Opportunities - D.B. Wankhede	287
65.	Fatty Acid Profile of Horse gram Seeds - U.N. Joshi and Y.P. Luthra	298
66.	Studies on Effect of Processing on the Functional Properties of Moth bean, Horse gram and Cowpea - D.B. Wankhede, H.M. Syed and K.A. Syed	301
67.	Composite Flour in Cookie Making - A.B. Rodge and D.B. Wankhede	307

68.	The Effect of Germination on the Changes in Protein, Free Amino Acid and <i>in-vitro</i> Protein Digestibility of Moth bean and Horse gram - S. Ismail, D.B. Wankhede, H.M. Syed, A.S. Kulkarni and M. Fayazuddin	315
69.	Studies on Isolation and Characterization of Starch from two Varieties of Moth bean - A.S. Kulkarni, D.B. Wankhede, H.M. Syed, S. Ismail, B.M. Kajalwad and A.R. Sawate	318
70.	Studies on Sensory and Nutritional Qualities of Breads Supplemented with Native and Germinated Horse gram and Cowpea Flours - H.W. Deshpande, D.B. Wankhede, H.M. Syed, J.L. Shekapure and H.H. Bhadarge	324
71.	Studies on Isolation, Purification, Physico-Chemical and Pasting Behaviour of Starch from two Varieties of Horse gram - P.M. Ganorkar, D.B. Wankhede, S.K. Arifuddin, M. Fayazuddin and P.N. Satwadhar	328
THEME-4		
<b>MANAGEMENT OF ABIOTIC STRESSES</b>		
72.	Management of Abiotic Stresses through Resistnace Breeding - D. Kumar	337
73.	Physiological Aspects of Abiotic Stress Tolerance in Arid Legumes - B.K. Garg	347
74.	Chromium Induced Changes in Carbon and Nitrogen Metabolism in Guar - U.N. Joshi, S.S. Rathore and S.K. Arora	355
75.	Effect of Drought Ameliorative Chemicals on Clusterbean Grown on Light Textured Soil under Rainfed Conditions - Virender Kumar, B.D. Yadav and J.S. Yadav	361
76.	Stability of Local Genotypes of Clusterbean in Semi-Arid Region - R.C. Singh	364
77.	Stability of Yield and Quality Traits in Guar - Anita D'almeida and S.B.S. Tikka	367
78.	<i>In-vitro</i> Screening for Drought Tolerance in Cowpea - P. Dhanasekar and R.N. Pandey	372
79.	Stability Analysis for Test Weight in Cowpea - R.S. Khatri, R. Kavitha and R.S. Sangwan	376
80.	Stability Analysis for Grain Yield in Cowpea - R. Kavitha, R.S. Khatri and R.S. Sangwan	379
81.	Stability of Cowpea Lines under Weather Conditions of Semi Arid Region - R.C. Singh	383
82.	Genotypes x Environment Interactions for Seed Yield in Cowpea - A. Henry	387
83.	Water Use Efficiency and Yield Performance of Summer Cowpea under Varying Moisture Stress Situations - S. Anitha, Gracy Mathew, E. Sreenivasan and S.M. Purushothaman	390

84.	Relative Drought Tolerance of Moth Bean Genotypes - S.P. Vyas, B.K. Garg, S.Kathju and A.N. Lahiri	393
85.	Seed Germination, Seedling Growth and Nitrogen Metabolism of Clusterbean Genotypes as Affected by Hyperthermia - Saroj Nein and S.P. Vyas	398
THEME-5 <b>INTEGRATED PLANT PROTECTION MEASURES</b>		
86.	Biochemical Parameters Involved for resistance against Root rot in Clusterbean - U.N. Joshi, P.P. Gupta and J.V. Singh	405
87.	Management of Charcoal Rot of Clusterbean - K. Chitale and S.K. Tak	412
88.	Screening of Clusterbean Germplasm against Root Rot & Bacterial Leaf Blight - P.P. Gupta, Vivek Gupta, J.V. Singh, Anita Punia and Richa Kapoor	415
89.	Evaluation of Different Methods to Detect <i>Xanthomonas axonopodis</i> Pv. <i>cyamopsidis</i> in Clusterbean Seed - Anil Gupta, P.P. Gupta and R.D. Parashar	419
90.	Evaluation of Phytoncides against <i>Xanthomonas axonopodis</i> Pv. <i>cyamopsidis</i> - Sunil Kumar, Vijai Pal, Indu Jalali and J.V. Singh	426
91.	Extent of Yellow Mosaic Virus Disease of Moth Bean in Bikaner Region - N.K. Khatri, U.S. Nanda and R.K. Kakani	432
92.	Screening of Moth bean Germplasm against Yellow Mosaic Virus - N.K. Khatri, R.C. Shrama, R.K. Kakani, U.S. Nandu and R.K. Rathore	435
93.	Effect of Extracts of <i>Trigonella Foenum</i> – <i>Graceum</i> on the Growth of <i>Aspergillus flavus</i> and <i>Fusarium oxysporum</i> - Leena Daswani, Pradeep Parihar and A. Bohra	438
94.	<i>In-vitro</i> Study of Antifungal Activity of <i>Tamarindus indica</i> against <i>Aspergillus flavus</i> and <i>Fusarium oxysporum</i> - Neetu Tyagi and A. Bohra	442
95.	Relative Bio-Efficacy of Different Insecticides against Sucking Pests of Guar - D.A. Dodia, B.G. Prajapati and S.B.S. Tikka	445
96.	Insect Pest Management in Cowpea and Clusterbean Crops - S.P. Singh	448
97.	Screening of Cowpea and Clusterbean Varieties against <i>Acaudaleyrodes citri</i> in Arid Regions - S.K. Verma and A. Henry	453
98.	Relative Incidence of Black Weevil ( <i>Cyrtosemia cognata</i> ) in Early and Normal Maturing Varieties of Clusterbean and Mung bean - S.K. Verma and A. Henry	457
99.	Studies on Bio-Efficacy of Synthetic and Botanical Insecticides against Major Pests of Cowpea - B.G. Prajapati, D.A. Dodia and S.B.S. Tikka	462
100.	Evaluation of Different Insecticides against Major Pests of Mung bean - B.G. Prajapati, D.A. Dodia and S.B.S. Tikka	467

- 
101. Incidence and Intensity of *Clavigralla scutellaris* on Pigeonpea Varieties in Western Rajasthan 470

- S.K. Verma and A. Henry

THEME-6

**PRODUCTS DEVELOPMENT AND EXPORT**

102. Guar Gum Export - Retrospect and Prospects 477

- B.K.Mathur and A. Henry

THEME-7

**SOCIO-ECONOMIC CONSTRAINTS IN TECHNOLOGY ADOPTION**

103. ITK Relating to Plant Protection for Grain Legumes in Western Rajasthan 487

- S.K. Verma

104. Socio-Economic Constraints In Technology Transfer of Arid Legumes 497

H.D. Yadav and Virender Kumar

105. Socio-Economic and Technological Constraints in Legume Production in Arid Region of Bikaner District (Rajasthan) 501

Preeti Nauriyal and Bharat Singh

106. Performance of Clusterbean Varieties in Frontline Demonstration in Arid Regions 506

M.C. Bhandari, P.D. Bhagat and A. Henry

107. Adoption and Constraints of Moth bean Production Technology in Arid Zone of Rajasthan 510

Bhagwan Singh, Raj Singh and K.N.K. Chauhan

108. Arid Legume Crops- Its Improved Practices in Some Arid Areas of Western Rajasthan – A Case Study 515

- D.K. Saha