

CONTENT

Page No.

GENETICS AND BREEDING

Molecular markers and genomic resources for disease resistance in peanut-A review

Divya Choudhary, Gaurav Agarwal, Hui Wang, Manish K. Pandey, Albert K. Culbreath,

Rajeev K. Varshney and Baozhu Guo.....137

Assessment of genetic diversity in advanced breeding lines derived from intraspecific crosses of garden pea (*Pisum sativum* L.)

Bhallan Singh Sekhon, Akhilesh Sharma, Viveka Katoch, Rakesh K. Kapila and V.K. Sood.....145

Heterosis and combining ability studies for economic traits in garden pea (*Pisum sativum* L.)

Viveka Katoch, Akanksha Bharti, Akhilesh Sharma, Neha Rathore and Vedna Kumari.....153

Determination of morphological variability of different *pisum* genotypes using principal component analysis

Fatih Hanci and Esra Cebeci.....162

Evaluation of diverse cowpea [*Vigna unguiculata* (L.) Walp.] germplasm accessions for drought tolerance

K.D. Nkoana, Abe Shegro Gerrano and E.T. Gwata.....168

BIOTECHNOLOGY

Biochemical responses of sainfoin shoot and root tissues to drought stress in

***In vitro* Culture**

Ramazan Beyaz.....173

An efficient *in vitro* shoot regeneration protocol from embryo explants of chickpea (*Cicer arietinum* L.)

T. Raghavendra, V. Jayalakshmi and Y. Padmalatha.....178

AGRONOMY

Impact of Long-term fertilizer application on soil fertility, nutrient uptake, growth and productivity of soybean under soybean-safflower cropping sequence in Vertisol

N.A. Meshram, Syed Ismail, S.T. Shirale and V.D. Patil.....182

On farm abiotic stress management in pigeon pea (*Cajanus cajan*) and its impact on yield, economics and soil properties

Y. P. Singh, Sudhir Singh and Anil Kumar Singh.....190

Optimization of operational parameters for mechanised harvesting of pigeon-pea (<i>Cajanus cajan</i>) with combine harvester	
Dinesh Kumar, Baldev Dogra, Ritu Dogra, Inderjit Singh and G.S. Manes.....	198
Seed bio-priming of green gram with <i>Rhizobium</i> and levels of nitrogen and sulphur fertilization under sustainable agriculture	
Mahipal Choudhary, B.A. Patel, Vijay Singh Meena, R.P. Yadav and Prakash Chand Ghasal.....	205
Influence of land configuration on rain water use efficiency, yield and economics of cowpea (<i>Vigna unguiculata</i> L.) in maize-cowpea sequence cropping under rainfed condition of Northern Transitional Zone	
Hanamant M. Halli and S.S. Angadi.....	211
Optimization of operational parameters for mechanized harvesting of mung-bean [<i>Vignaradiata</i> (L.) Wilczek] with combine harvester	
Dinesh Kumar, Baldev Dogra, Ritu Dogra, T.S. Bains and G.S. Manes.....	216
Effect of tillage practices and fertilizer management on the growth and nitrogen efficiency in soybean	
Swapan Kumar Roy, Seong-Woo Cho, Soo Jeong Kwon, Jong-Ho Yang, Yeong-Ju Bae, Hyun-Jin Jung, Sook-Jin Kim, Keun-Yook Chung and Sun-Hee Woo.....	222
Time series change in pulse scenario in India with special reference to Haryana	
Vijay Kumar and Ishwar Dutt.....	228
Study on the effect of different levels of organic and inorganic fertilizers on microbial enzymes and soil mesofauna in soybean ecosystem	
Golive Prasanthi, N.G. Kumar, S. Raghu, N. Srinivasa and H Gurumurthy.....	233
Production and nitrogen, phosphorus and calcium absorption of sword bean leaf (<i>Canavalia gladiata</i>) in application of rock phosphate and VAM inoculation	
Nyimas Popi Indriani, Heryawan Kemal Mustafa, Budi Ayuningsih, Mansyur and Ana Rochana.....	238
Standardization of fertigation technology for transplanted pigeonpea [<i>Cajanus cajan</i> (L.) Millsp.]	
H. Vanishree, N. Anand, B.M. Chittapur, M.R. Umesh and S.N. Bhat.....	243
Effect of phosphorus on the performance of greengram (<i>Vigna radiata</i> L) varieties during summer	
Vikram Singh, S.K. Sharma, S.K. Thakral and M.K. Sharma.....	247
<u>SEED SCIENCE & TECHNOLOGY</u>	
Seed storability of summer-planting soybeans under natural and artificial aging conditions	
Xi Zhang, Mengge Xu, Aiman Hina, Jiejie Kong, Junyi Gai, Xiaohong He and Tuanjie Zhao.....	250

Efficient application of *Trichoderma viride* on soybean [*Glycine max* (L.) Merrill] seed using thin layer polymer coating

P. Kuchlan, M.K. Kuchlan and M.M. Ansari.....260

Effect of chitosan polymer and inoculated with *B. japonicum* on soybean germination survival of seedling, nodulation and bacteria viability on seeds

Costales, Daimy, Nápoles, M.C., Falcón-Rodríguez, Alejandro, González-Anta, Gustavo, Petit, Cecilia, Solá, Susana Perrig and Diego.....265

PLANT PROTECTION

The frequency of occurrence of pathogenic and saprotrophic fungi in pea seeds in different regions of Poland

Agnieszka Pszczó³kowska, Adam Okorski, Gabriel Fordoński, Agnieszka Faligowska, Ewa Kaszkowiak, Jacek Olszewski and Alina Chareńska.....270

Pathogenic and morphological variability among *Fusarium oxysporum* f. sp. *ciceri* isolates causing wilt in chickpea

H.R. Chaithra, H. Manjunatha, M. Saifulla and Pagala Deepthi.....277

Biochemical basis of resistance in chickpea varieties against *Callosobruchus chinensis* Linn. (Coleoptera: Bruchidae)

Mohammad Abbas Ahmad, Meena Agnihotri, M.S. Khan, Ashutosh Dubey, Bhawna Tyagi, Rajesh Kumar and Nilmani Prakash.....282

Esteemed reviewers of this issue.....287

Author index of this issue.....287-288

Key words index of this issue.....289-290