

International Atomic Energy Agency  
IAEA-CN-263  
Vienna International Centre  
PO Box 100  
Wagramer Strasse 5  
1400 Vienna, Austria  
Tel.: +43 1 2600 (0) plus extension  
Fax: +43 1 26007  
Email: official.mail@iaea.org

FAO/IAEA International Symposium on

# Plant Mutation Breeding and Biotechnology

27–31 August 2018  
Vienna, Austria

**PROGRAMME**

Organized by the



Joint FAO/IAEA Programme  
Nuclear Techniques in Food and Agriculture

CN-263

18-04168E



**FAO/IAEA Programme Committee:**

B. Forster  
A. Mukhtar Ali Ghanim  
I. Ingelbrecht  
L. Jankuloski  
C. Mba  
S. Nielen  
N. Roux  
F. Sarsu  
Q. Shu  
M. Spencer  
B. Till  
N. Warthmann

**Secretariat:**

Scientific Secretaries: L. Jankuloski  
I. Ingelbrecht

Symposium Organizer: M. Khaelss  
M. Neuhold

Scientific Support: L.M. Alfonso Godoy  
K. Allaf  
J.B. Jankowicz-Cieslak  
P. Papadimitriou

**Location of the Symposium:**

International Atomic Energy Agency  
Vienna International Center (VIC)  
**Board Room B/M1 (Main Room)**  
**Room M2 (Parallel Sessions)**  
**M Building**

Wagramer Strasse 5  
1400 Vienna, Austria  
Tel.: (+43) 1 2600 0  
E-mail: ismbb2018@iaea.org

**Working Language:** English

**Resolutions:** No resolutions may be submitted for consideration on any subject; no votes will be taken.

**TIMETABLE****Monday, 27 August 2018**

08:00	Registration	Gate 1
	Distribution of Symposium Material	M Building Entrance
10:30-11:00	Opening Session	
11:00-12:30	Plenary Session	
12:30-13:30	<i>Lunch Break</i>	
13:30-15:00	Session 1	Contribution and Impact of Mutant Varieties on Food Security
15:00-15:30	<i>Coffee/Tea Break</i>	
15:30-17:10	Session 1 (cont'd)	Contribution and Impact of Mutant Varieties on Food Security
17:10-17:40	Group Photo	
18:00-20:00	Welcome Reception (M Building, Ground Floor)	

**Tuesday, 28 August 2018**

08:30-09:15	Tuesday Plenary Talk	
09:20-10:30	Session 2	Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops
10:30-11:00	<i>Coffee/Tea Break and Poster Viewing</i>	
11:00-12:20	Session 2 (cont'd)	Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops
12:20-13:30	<i>Lunch Break</i>	
13:30-14:50	Session 2 (cont'd)	Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops
14:50-15:20	<i>Coffee/Tea Break and Poster Viewing</i>	
15:20-16:20	Session 2 (cont'd)	Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops
16:20-17:20	Poster Viewing	

**Wednesday, 29 August 2018  
(Sessions in Board Room B/M1)**

08:30-09:15	Wednesday Plenary Talk	
09:20-10:30	Session 2 (cont'd)	Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops
10:30-11:00	<i>Coffee/Tea Break and Poster Viewing</i>	
11:00-12:20	Session 2 (cont'd)	Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops
12:20-13:30	<i>Lunch Break and Poster Viewing</i>	
13:30-14:50	Session 2 (cont'd)	Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops
14:50-15:20	<i>Coffee/Tea Break and Poster Viewing</i>	
15:20-16:40	Session 3	Enhancing Agricultural Biodiversity Through New Mutation Induction Techniques
16:40-17:10	Removal of posters for session 2 and placement of posters for sessions 1, 3, 4, and 5	

**Wednesday, 29 August 2018  
(Parallel Sessions in Room M2)**

09:20-10:30	Session 4	Mutation Breeding for Ornamental and Vegetatively Propagated Crops
10:30-11:00	<i>Coffee/Tea Break and Poster Viewing</i>	
11:00-12:40	Session 4 (cont'd)	Mutation Breeding for Ornamental and Vegetatively Propagated Crops
12:40-13:30	<i>Lunch Break and Poster Viewing</i>	
16:00-17:00	Mutation Breeding Network	

**Thursday, 30 August 2018**  
**(Sessions in Board Room B/M1)**

08:30-09:15	Thursday Plenary Talk	
09:20-10:30	Session 5	New Challenges and Technologies in Plant Genomics and Breeding
10:30-11:00	<i>Coffee/Tea Break and Poster Viewing</i>	
11:00-12:20	Session 5 (cont'd)	New Challenges and Technologies in Plant Genomics and Breeding
12:20-13:30	<i>Lunch Break and Poster Viewing</i>	
13:30-14:50	Session 3 (cont'd)	Enhancing Agricultural Biodiversity Through New Mutation Induction Techniques
14:50-15:50	<i>Coffee/Tea Break and Poster Viewing</i>	
15:50-16:50	Panel Discussion	Current Challenges and Future Vision for Mutation Breeding

**Thursday, 30 August 2018**  
**(Parallel Session in Room M2)**

09:20-10:40	Session 3 (cont'd)	Enhancing Agricultural Biodiversity Through New Mutation Induction Techniques
10:40-11:00	<i>Coffee/Tea Break and Poster Viewing</i>	
11:00-12:20	Session 3 (cont'd)	Enhancing Agricultural Biodiversity Through New Mutation Induction Techniques
12:20-13:30	<i>Lunch Break and Poster Viewing</i>	

**Friday, 31 August 2018**

08:30-10:00	Session 5	New Challenges and Technologies in Plant Genomics and Breeding
10:00-11:00	<i>Coffee/Tea Break and Poster Viewing</i>	
11:00-12:40	Session 5 (cont'd)	New Challenges and Technologies in Plant Genomics and Breeding
13:00-13:15	Closing Session	
13:15	Removal of posters	

**Posters will be presented in the common area on the first floor (M1):**

Posters for Session 2 will be presented from Tuesday, 28 August to Wednesday, 29 August 2018.

Posters for Sessions 1, 3, 4 and 5 will be presented from Thursday, 30 August to Friday, 31 August 2018.

**Commercial exhibits will be displayed in the common areas on the ground floor (M0E) and the first floor (M1) from Monday to Friday, 27 to 31 August 2018.**

**MONDAY, 27 AUGUST 2018**

**08:00**            **Registration and Distribution  
of Symposium Materials**

**10:30-11:00**    **OPENING SESSION**

**Aldo Malavasi**  
Deputy Director General, IAEA

**Hans Martin Dreyer**  
Director, Plant Production and Protection  
Division (AGP), FAO

**Qu Liang**  
Director, Joint FAO/IAEA Division of  
Nuclear Techniques in Food and  
Agriculture

Welcome address and opening remarks

Welcome address

Welcome address

**11:00-12:30**    **PLENARY SESSION**

**Chair:**            **Chikelu Mba, FAO**  
**Co-Chair:**      **Sobhana Sivasankar, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
11:00-11:45	Perry Gustafson	USA	World Food Supply Improvement: Problems and Prospects
11:45-12:30	Qu Liang	FAO/IAEA	Plant Mutation Breeding – History, Challenges and Future Vision
12:30-13:30	<i>Lunch Break</i>		

**MONDAY, 27 AUGUST 2018**

**13:30-15:00**      **SESSION 1:  
Contribution and Impact of Mutant  
Varieties on Food Security (IMV)**

**Chair:**            **Chikelu Mba, FAO**

**Co-Chair:**       **Sobhana Sivasankar, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
13:30-14:00	Udda Lundqvist Keynote Speaker	Sweden	Scandinavian Mutation Research During the Last Ninety Years – A Historical Review
14:00-14:20	Hitoshi Nakagawa	Japan	History of Mutation Breeding and Molecular Research Using Induced Mutations in Japan
14:20-14:40	Ham Le Huy	Viet Nam	Impact of Mutation Breeding to Food Security in Viet Nam
14:40-15:00	Jianwei Zhang	China	Achievements and Research Progress of Mutation Breeding of Wheat in Henan Province

*15:00-15:30*      *Coffee / Tea Break and Poster Viewing*

**15:30-17:10**      **SESSION 1 (cont'd):  
Contribution and Impact of Mutant  
Varieties on Food Security (IMV)**

**Chair:**            **Chikelu Mba, FAO**

**Co-Chair:**       **Sobhana Sivasankar, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
15:30-15:50	Mirza Mofazal Islam	Bangladesh	High Yielding NERICA Mutant Rice for Upland Areas and Hope for Bangladeshi Farmers
15:50-16:10	Ruslibin Ibrahim	Malaysia	Impact of Mutant Varieties in Malaysia: Challenges and Future Perspective of Mutation Breeding
16:10-16:30	Thao Le Duc	Viet Nam	Soybean Breeding Through Induced Mutation in Viet Nam
16:30-16:50	Malathy Parasuraman	Sri Lanka	Application of Mutation Techniques in the Development of Green Crop Varieties in Sri Lanka: Way Forward
16:50-17:10	Vikash Kumar	India	Mutation Breeding in Rice for Sustainable Crop Production and Food Security in India

*17:10-17:40*      *Group Photo*

**18:00-20:00**      **Welcome Reception**

*M Building – Ground floor*

**TUESDAY, 28 AUGUST 2018****08:30-09:15 TUESDAY PLENARY TALK****Chair:** Ruslibin Ibrahim, Malaysia**Co-Chair:** Ljupcho Jankuloski, FAO/IAEA

	<i>Name</i>	<i>Designating Member State /Organization</i>	<i>Title of Paper</i>
08:30-09:15	Jacob Mignouna	CGIAR	African Perspective on the Future of Food & Agriculture Including Role of Crop Improvement

**09:20-10:30 SESSION 2:  
Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops (SPC)****Chair:** Ruslibin Ibrahim, Malaysia**Co-Chair:** Ljupcho Jankuloski, FAO/IAEA

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
09:20-09:50	Miriam Szurman-Zubrzycka Keynote Speaker	Poland	TILLING as a Renewable Source of Mutations for Functional Genomics and Practical Breeding
09:50-10:10	José Leitão	Portugal	Mutation Breeding for Powdery Mildew Resistance in Pea ( <i>Pisum sativum</i> L.)
10:10-10:30	Diaga Diouf	Senegal	Developing New Cowpea Varieties Obtained by Using Gamma Irradiation Induction

10:30-11:00 *Coffee/Tea Break and Poster Viewing***11:00-12:20 SESSION 2 (cont'd):  
Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops (SPC)****Chair:** Ruslibin Ibrahim, Malaysia**Co-Chair:** Ljupcho Jankuloski, FAO/IAEA

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
11:00-11:20	Suman Bakshi	India	Isolation and Characterisation of Yellow Rust Resistant Mutation in Wheat
11:20-11:40	Antonio Costa De Oliveira	Brazil	Identification of Rice Mutants Tolerant to Cold Stress at the Germination Stage By Tilling
11:40-12:00	Soeranto Human	Indonesia	Mutation Breeding of Sorghum to Support Climate Smart Agriculture
12:00-12:20	Leila Bagheri	Iran, Islamic Republic of	Production of Haploid Embryos and Plants in Iranian Melon ( <i>Cucumis melo</i> L.) through Irradiated Pollen-Induced Parthenogenesis

12:20-13:30 *Lunch Break*



**TUESDAY, 28 AUGUST 2018**

**13:30-14:50**      **SESSION 2 (cont'd):**  
**Mutation Breeding for Adaptation to**  
**Climate Change in Seed Propagated**  
**Crops (SPC)**

**Chair:**            **Ashwani Pareek, India**  
**Co-Chair:**      **Fatma Sarsu, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
13:30-13:50	Zerihun Tadele	Switzerland	Application of Mutation Breeding to The Improvement of Understudied Crop Tef
13:50-14:10	Manzoor Hussain	Pakistan	Improving Sustainable Cotton Production through Enhanced Resilience to Climate Change Using Mutation Breeding
14:10-14:30	Kalaluka Munyinda	Zambia	Creating Variability in Cowpea for Adaptation and Value Addition through Induced Mutation

14:30-15:20      *Coffee / Tea Break and Poster Viewing*

**15:20-16:20**      **SESSION 2 (cont'd):**  
**Mutation Breeding for Adaptation to**  
**Climate Change in Seed Propagated**  
**Crops (SPC)**

**Chair:**            **Ashwani Pareek, India**  
**Co-Chair:**      **Fatma Sarsu, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
15:20-15:40	Vanniarajan Chockalingam	India	Isolation of Gamma Ray Induced URD Bean ( <i>Vigna mungo</i> (L.) Hepper) Mutants with Increased Batter Volume
15:40-16:00	Cuma Akinci	Turkey	A New Mutant Barley ( <i>Hordeum vulgare</i> L.) Cultivar Registered in Turkey
16:00-16:20	Lydia Ndinela Horn	Namibia	Genotype-by-environment Interaction of Elite Varieties of Cowpea Derived through Mutagenesis
16:20-17:20	<i>Poster Viewing (M Building, 1st Floor)</i>		



**WEDNESDAY, 29 AUGUST 2018****(Sessions in Board Room B/M1)****08:30-09:15 WEDNESDAY PLENARY TALK****Chair: Perry Gustafson, USA****Co-Chair: Ivan Ingelbrecht, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
08:30-09:15	Chikelu Mba	FAO	Emerging Biotechnologies and the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture

**09:20-10:30 SESSION 2 (cont'd):  
Mutation Breeding for Adaptation to  
Climate Change in Seed Propagated  
Crops (SPC)**

**Chair: Perry Gustafson, USA****Co-Chair: Ivan Ingelbrecht, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
09:20-09:50	Luxiang Liu Keynote Speaker	China	New Mutation Techniques for Crop Improvement in China
09:50-10:10	Shiqiang Chen	China	Establishment of Wheat - <i>Thinopyrum elongatum</i> 7e Chromosome Translocation Lines with Fusarium Head Blight Resistance by Radiation
10:10-10:30	Mohammad Abul Kalam Azad	Bangladesh	Development of Climate Change Adaptable/Resilient Crop Varieties through Nuclear Techniques
10:30-11:00	<i>Coffee/Tea Break and Poster Viewing</i>		

**WEDNESDAY, 29 AUGUST 2018**

**11:00-12:20**      **SESSION 2 (cont'd):**  
**Mutation Breeding for Adaptation to**  
**Climate Change in Seed Propagated**  
**Crops (SPC)**

**Chair:**            **Perry Gustafson, USA**  
**Co-Chair:**      **Ivan Ingelbrecht, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
11:00-11:20	Vichai Puripunyanich	Thailand	Anthracoze Resistance Induction in Chili by Electron Beam Irradiation
11:20-11:40	Nasya Tomlekova	Bulgaria	Induced Mutagenesis for Bean ( <i>Phaseolus vulgaris</i> L.) Production Improvement in Bulgaria
11:40-12:00	Luz Gomez - Pando	Peru	Mutation Induction in Improving Resistance to Downy Mildew in Quinoa ( <i>Chenopodium quinoa</i> )
12:00-12:20	Marzena Kurowska	Poland	Barley Mutant in HvSNAC1 (Stress-Responsive NAC 1) Generated Through TILLING Strategy Shows Increased Tolerance to Drought and Oxidative Stress

12:20-13:30      *Lunch Break and Poster Viewing*

**13:30-14:50**      **SESSION 2 (cont'd):**  
**Mutation Breeding for Adaptation to**  
**Climate Change in Seed Propagated**  
**Crops (SPC)**

**Chair:**            **Bradley J.Till, USA**  
**Co-Chair:**      **Norman Warthmann, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
13:30-13:50	Shamsun Nahar Begum	Bangladesh	Development of First Kabuli Type Chickpea Mutant Variety in Bangladesh
13:50-14:10	Mirjana Jankulovska	Macedonia, The former Yugoslav Republic of	Evaluation of Advanced Wheat Mutant Lines for Food and Feed Quality
14:10-14:30	Sarjeet Singh	India	Induced Variation for Post-Emergence Herbicide Tolerance in Lentil
14:30-14:50	Mohd Rafii Yusop	Malaysia	Application of Mutation Techniques and Genotype × Environment Interaction for Grain Yield and Yield Components of Ion Beam Induced Mutant Rice Lines Tested in Multiple Locations in Malaysia

14:50-15:20      *Coffee / Tea Break and Poster Viewing*

**WEDNESDAY, 29 AUGUST 2018**

**15:20-16:40**      **SESSION 3:**  
**Enhancing Agricultural Biodiversity**  
**Through New Mutation Induction**  
**Techniques (MTB)**

**Chair:**            **Nicolas Roux, CGIAR**

**Co-Chair:**       **Fatma Sarsu, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
15:20-15:40	Alberto Raul Prina Keynote Speaker	Argentina	The Success of IMI Tolerant Rice Varieties in Latin America
15:40-16:00	Alejandra Landau	Argentina	The Barley Chloroplast Mutator (cpm) Mutant is an Extraordinary Source of Plastome Variability
16:00-16:20	Huijun Guo	China	A Large Capacity Wheat Resource with Broad Mutation Spectrum and Novel Allele Identification by TILLING Approach
16:20-16:40	Rubens Marschalek	Brazil	Gamma Rays Application in the Development of Rice Lines Tolerant to Aryloxyphenoxypropionate Herbicides
	Removal of Posters Session 2 and placement of Posters Sessions 1, 3, 4, and 5		

**WEDNESDAY, 29 AUGUST 2018**

**(Parallel Sessions in Room M2)**

**09:20-10:30      SESSION 4:**

**Mutation Breeding for Ornamental  
and Vegetatively Propagated Crops  
(VPC)**

**Chair:            Madeleine Spencer, FAO/IAEA**

**Co-Chair:        Stephan Nielen, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
09:20-09:50	Nicolas Roux Keynote Speaker	CGIAR	Somaclonal Variation: Containing the Bad While Exploring the Good
09:50-10:10	Sunil Dalvi	India	Ems Induced <i>In Vitro</i> Mutagenesis for Abiotic and Biotic Stress Tolerance, and Isolation of Morphologically and Biochemically Distinct Phenotypes in Sugarcane
10:10-10:30	Behnam Naserian Khiabani	Iran, Islamic Republic of	<i>In Vitro</i> Mutation Breeding and Selection for Resistance to Fusarium Wilt in Banana
10:30-11:00	<i>Coffee/Tea Break and Poster Viewing</i>		

**WEDNESDAY, 29 AUGUST 2018**

**(Parallel Sessions in Room M2)**

**11:00-12:40**      **SESSION 4 (cont'd):**  
**Mutation Breeding for Ornamental**  
**and Vegetatively Propagated Crops**  
**(VPC)**

**Chair:**            **Madeleine Spencer, FAO/IAEA**

**Co-Chair:**       **Stephan Nielen, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
11:00-11:20	Subodh Kumar Datta	India	Induced Mutations - Technological Advancement for Development of New Ornamental Varieties
11:20-11:40	Ayşe Nilgun Atay	Turkey	Radiosensitivity and Preliminary Results in Mutation Breeding of 'Amasaya' Apple Cultivar
11:40-12:00	Rodrigo Rocha Latado	Brazil	Induction and Selection of Mandarin Mutants with Fruits Containing Low Number of Seeds
12:00-12:20	Dayani Karunananda	Sri Lanka	<sup>60</sup> Co Gamma Irradiation-Induced Variations in Vegetatively Propagated <i>Philodendron erubescens</i> 'Gold'
12:20-13:30	<i>Lunch Break and Poster Viewing</i>		
16:00-17:00	Mutation Breeding Network		

**THURSDAY, 30 AUGUST 2018**

**(Sessions in Board Room B/M1)**

**08:30-09:15 THURSDAY PLENARY TALK**

**Chair: Qingyao Shu, China**

**Co-Chair: Norman Warthmann, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
08:30-09:15	Tomoko Abe	Japan	Ion-Beam Mutagenesis – An Innovative and Effective Method for Plant Breeding and Gene Discovery

**09:20-10:30 SESSION 5:  
New Challenges and Technologies in  
Plant Genomics and Breeding (CGB)**

**Chair: Qingyao Shu, China**

**Co-Chair: Norman Warthmann, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
09:20-09:50	Peter Gresshoff Keynote Speaker	Australia	Soybean Nodulation: From Gene Mutation, via Gene Isolations to Functional Circuits
09:50-10:10	Christian Wagner	Austria	High-resolution Mapping of Wheat Chromosome Arm 5AS Harbours the Fusarium Head Blight Resistance QTL Qfhs.ifa-5A
10:10-10:30	Akemi Shimizu	Japan	Whole Genome Sequencing of Rice Mutants Induced by Gamma Rays and Ion Beams
10:30–11:00	<i>Coffee/Tea Break and Poster Viewing</i>		

**THURSDAY, 30 AUGUST 2018**

**11:00-12:20**      **SESSION 5 (cont'd):**  
**New Challenges and Technologies in**  
**Plant Genomics and Breeding (CGB)**

**Chair:**            **Qingyao Shu, China**  
**Co-Chair:**      **Norman Warthmann, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
11:00-11:20	Trude Schwarzacher	UK	Exploiting Mutations in the Era of Genomics and Genome Engineering
11:20-11:40	Yanzhou Xie	China	Rapid Mapping and Cloning the Chlorina Mutant Gene (vn-A1) in Wheat by Bulked Segregant Analysis and 660K SNP Chip
11:40-12:00	Bradley J. Till	USA	Genomics Tools to Facilitate Plant Mutation Breeding
12:00-12:20	Stanislav Geras'kin	Russian Federation	Using Ionizing Radiation for Improving the Development and Yield of Agricultural Crops
12:20-13:30	<i>Lunch break &amp; Poster Viewing</i>		

**13:30-14:50**      **SESSION 3:**  
**Enhancing Agricultural Biodiversity**  
**Through New Mutation Induction**  
**Techniques (MTB)**

**Chair:**            **Liu Luxiang, China**  
**Co-Chair:**      **Abdelbagi Mukhtar Ali Ghanim, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
13:30-13:50	Chenguang Zhou	Germany	Impact of Cross-Breeding on the Metabolite Signature Resulting from the OsSULTR3;3 Mutation in Low Phytic Acid Rice Seeds
13:50-14:10	Young Dueg Cho	Korea, Republic of	Development and Screening of Genetic Variants on Radiation Mutation Techniques for Breeding and Functional Genomics Study in Pepper
14:10-14:30	Yoshihiro Hase	Japan	Mutagenic Effects of Ion Beams and Development of Efficient Mutagenesis Techniques
14:30-14:50	Yongdun Xie	China	A Featured Stem Development Pattern is Displayed in the Winter Wheat Mutant Generated by Heavy-ion Beam Mutagenesis
14:50-15:50	<i>Coffee/Tea Break and Poster Viewing</i>		



**THURSDAY, 30 AUGUST 2018**

**15:50-16:50**      **PANEL DISCUSSION:**  
**Current Challenges and Future Vision**  
**for Mutation Breeding**

**Chair:**            **Perry Gustafson, USA**

Chickelu Mba, FAO

Qingyao Shu, China

Yoshihiro Hase, Japan

Peter Gresshoff, Australia

Antonio de Oliveira, Brazil

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**THURSDAY, 30 AUGUST 2018**

**(Parallel Sessions in Room M2)**

**09:20-10:40      SESSION 3:  
Enhancing Agricultural Biodiversity  
Through New Mutation Induction  
Techniques (MTB)**

**Chair:            Hiroshi Kato, Japan  
Co-Chair:       Ivan Ingelbrecht, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
09:20-09:40	Fatemeh Maghuly	Austria	Creation and Characterization of an EMS Mutant Population of <i>Jatropha curcas</i>
09:40-10:00	Amitha C Mithra Sv	India	National Repository of Rice EMS Mutants of an Upland Rice Cultivar Nagina 22: Progress Update on Characterization and Utilization
10:00-10:20	Souframanien Jegadeesan	India	Radiation Induced Mutations in Genetic Enhancement and Development of New Crop Varieties in Black Gram [ <i>Vigna mungo</i> (L.) Hepper]
10:20-10:40	Abdulwahid Saif	Yemen	Development of New Bread Wheat Resistant Mutants for Ug99 Rust Disease ( <i>Puccinia graminis</i> f. sp. <i>tritici</i> )

10:40-11:00      *Coffee/Tea Break and Poster Viewing*

**11:00-12:20      SESSION 3 (cont'd):  
Enhancing Agricultural Biodiversity  
Through New Mutation Induction  
Techniques (MTB)**

**Chair:            Stephan Nielen, FAO/IAEA  
Co-Chair:       Madeleine Spencer, FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
11:00-11:20	Noël Arrieta	Costa Rica	Determination of Radio-sensitivity of Coffee Arabica Var. Venecia Seeds to Gamma Ray Irradiation
11:20-11:40	Andres Gatica- Arias	Costa Rica	Application of Chemically Induced Mutations Using Embryogenic Cell Suspensions and Seeds for Crop Protection of Coffee ( <i>Coffea arabica</i> L.) Varieties in Costa Rica
11:40-12:00	Yonis Alberto Morales Reyes	Honduras	Virulence Genes of New Race of Rust ( <i>Hemileia vastatrix</i> ) Affecting Variety of Lempira Coffee in Honduras, Resistant and Susceptible Varieties
12:00-12:20	Souleymane Bado	Austria	Mutagenesis of <i>In Vitro</i> Explants of <i>Coffea arabica</i> to Induce Fungal Resistance

12:20-13:30      *Coffee/Tea Break and Poster Viewing*

**FRIDAY, 31 AUGUST 2018**

**08:30-10:00**      **SESSION 5:**  
**New Challenges and Technologies in**  
**Plant Genomics and Breeding (CGB)**

**Chair:**            **Brian Forster, UK**

**Co-Chair:**       **Abdelbagi Mukhtar Ali Ghanim,**  
**FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
08:30-09:00	Qingyao Shu Keynote Speaker	China	Mutation Induction and Genome Editing in Plant Breeding: Comparative Advantages and Perspectives
09:00-09:20	Ashwani Pareek	India	'Gain-of-function' Mutants for Gene Discovery and Functional Genomics for Multiple Stress Tolerance in Rice
09:20-09:40	Libin Zhou	China	Comparative Study of Mutations Induced by Carbon-ion Beam and Gamma Ray Irradiations in <i>Arabidopsis thaliana</i> at the Genome-wide Scale
09:40-10:00	Feng Li	Japan	Identification of a Novel Locus SH2 for Seed Shattering in Rice ( <i>Oryza sativa L.</i> ) by Combining Bulked Segregant Analysis with Whole Genome Sequencing
10:00-11:00	<i>Coffee/Tea Break and Poster Viewing</i>		

**FRIDAY, 31 AUGUST 2018**

**11:00-12:40**      **SESSION 5 (cont'd):**  
**New Challenges and Technologies in**  
**Plant Genomics and Breeding (CGB)**

**Chair:**            **Brian Forster, UK**  
**Co-Chair:**      **Abdelbagi Mukhtar Ali Ghanim,**  
**FAO/IAEA**

	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Paper</i>
11:00-11:20	Hiroshi Kato	Japan	Development of New Rice Mutation Breeding Method for the Selection of Higher Yield Physiological Mutants
11:20-11:40	Sebastian Schultheiss	Germany	The Power of Next-generation Sequencing in Rapidly Identifying (epi) Genetic Causal Mutations
11:40-12:00	Shashi Choudhary	India	Gamma Ray Induced Pedigreed Mutant Population of Tossa Jute ( <i>Corchorus olitorius</i> L.): A Key Resource for Forward and Reverse Genetics
12:00-12:20	Meriem Laouar	Algeria	Early Assessment of Lentil and Chickpea Mutant and Evaluation of Low Cost Tilling on M2 Chickpea
12:20-12:40	Vasilissa Manova	Bulgaria	Effects of Light and UV-C Radiation on the Transcriptional Activity of COP1 And HY5 Gene Homologues in Barley
<b>13:00-13:15</b>	<b>CLOSING SESSION</b>		

**POSTERS RELATED TO SESSIONS:**

- (1) **Contribution and Impact of Mutant Varieties on Food Security**
- (2) **Mutation Breeding for Adaptation to Climate Change in Seed Propagated Crops**
- (3) **Enhancing Agricultural Biodiversity through New Mutation Induction Techniques**
- (4) **Mutation Breeding for Ornamental and Vegetatively Propagated Crops**
- (5) **New Challenges and Technologies in Plant Genomics and Breeding**

## POSTERS RELATED TO SESSION 1

### CONTRIBUTION AND IMPACT OF MUTANT VARIETIES ON FOOD SECURITY

These posters will be displayed from Thursday to Friday in  
the Poster Area on M1

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
18	<b>Reza Mohammad Emon</b> Md. Abdul Malek	Bangladesh	Selection of Promising Soybean Mutants Through Multi-Location Trials
57	<b>Shubiao Zhang</b>	China	The Breeding of Glutinous Hybrid Rice
69	<b>Andres Gatica-Arias</b> Griselda Arrieta-Espinoza Mónica Villalobos-Flores William Watson-Guido	Costa Rica	Genetic Variability Induction in Rice Through Mutagenesis: An Alternative to Mitigate Climate Change and Promote Food Security in Costa Rica
101	<b>Xuzhen Cheng</b> Lixia Wang Suhua Wang	China	Development of New Varieties Using Space Induced Mutation
159	<b>Fernando Aurigue</b>	Philippines	Mutant Varieties Developed in the Philippines
170	<b>Dhanasekar Punniyamoorthy</b> Sreenivasulu Kandali Reddy	India	Development of Trombay Cowpea Variety 'Tc-901' Amenable for Summer Cultivation by Induced Mutagenesis
190	<b>Ulrike Gartner</b> Vivian Blok	UK	Irradiation of the Potato <i>Solanum tuberosum</i> Cv. Desirée to Investigate Resistance to the Potato Cyst Nematode <i>Globodera pallida</i>
267	<b>Mirjana Jankulovska</b> Sonja Ivanovska Biljana Kuzmanovska Dane Boshev Ljupcho Jankuloski Mile Markoski	Macedonia, Former Yugoslav Republic of	Agronomic Performance of Wheat Mutant Lines for Food and Feed Quality on Farmer's Fields

## POSTERS RELATED TO SESSION 2

### MUTATION BREEDING FOR ADAPTATION TO CLIMATE CHANGE IN SEED PROPAGATED CROPS

These posters will be displayed from Tuesday to Wednesday  
In the Poster Area on M1

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
5	<b>Sonia Mejri</b> Mouldi Saidi Omrane Belhadj Yassine Mabrouk	Tunisia	Improving Faba Bean Crop for Biotic Stress Resistance through Mutation Breeding Using Gamma Irradiation Technique
8	<b>Ishak Ishak</b> Aryanti Aryanti	Indonesia	Genetic Diversity and Molecular Characterization of Xa-5 and Xa-21 in Aromatic Rice Mutant Lines Derived from Irradiated Gamma Rays
9	<b>Mohammad Reza Rahemi</b> Ahad Yamchi Hasan Soltanloo Peter Roepstorff Saeid Navabpour	Iran, Islamic Republic of	Baking Quality Improvement in Wheat Flour by Physical Mutagenesis
10	<b>Yassine Mabrouk</b> Kamel Charaabi Mouldi Saidi Omrane Belhadj	Tunisia	Induced Mutation Through Gamma Radiation in Pea ( <i>Pisum Sativum</i> L.): Developmental Changes and Improved Resistance to Broomrape ( <i>Orobanche crenata</i> )
11	<b>Yassine Mabrouk</b> Kamel Charaabi Martina Rickauer Mahiout Djamel Omrane Belhadj	Tunisia	Creating New Mutants of Chickpea Resistant to <i>Ascochyta rabiei</i> Using Gamma Radiation.
12	Md. Farid Uddin Dana Jawdat Khin Myat Lwin Ljupcho Jankuloski Malek Massoud Manzoor Hussain <b>Md. Kamrul Islam</b> Mohammad Reza Rahemi Tianzhen Zhang	Bangladesh	Adaptation of Mutation Breeding for Enhancing Cotton Resilience to Climate Change in Bangladesh
14	<b>Reza Mohammad Emon</b>	Bangladesh	Morpho-Genetic Screening of the Promising Rice Genotypes Under Salinity Stress



No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
17	<b>Kanchana Klakhaeng</b> Fatma Sarsu Udompan Promnart	Thailand	Improving Submergence Tolerance in Thai Rice Using Electron Beam Induced Mutations
21	<b>Leila Bagheri</b> Ali Eskandari Alireza Nabipour Allahyar Fallah Azam Borzouei Ebrahim Moghiseh Hossein Elyasi	Iran, Islamic Republic of	Improvement of Iranian Rice Varieties for Salinity Tolerance Through Mutation Approach
25	<b>R.M.N.H. Senanayake</b> A.A.P.G. Amarasingha D.G.K.P. Wijerathna H.M.V.G. Herath I.P. Wickramesinghe U.A.K.S. Udawela	Sri Lanka	Assessment of Allelic Variation Among Newly Improved Rice Varieties at Saltol Region in Sri Lanka
29	<b>Aryanti Aryanti</b> Ishak Ishak	Indonesia	Evaluation of Drought Tolerance Rice Mutant Lines and Identification Using SSR Markers
35	<b>Khin Myat Lwin</b> Aye Aye Thwe San Thandar Than Than Nu	Myanmar	Agronomic Morphological Study of Selected Irradiated Cotton Variety During M <sub>3</sub> Generation
44	<b>S. Muniswamy</b> Rachappa Haveri	India	Improvement of Resistance to Killer Wilt Disease Through Induced Mutations in Land Races of Pigeonpea ( <i>Cajanus cajan</i> (L.) Millsp.)
45	<b>Adel Elmaghrabi</b> Abdulmunam Fellah Elmundr Abughnia	Libya	Evaluation of the SERKs Family Genes and Yield of Some Barley Induced Lines Using Gamma Rays for Drought Tolerance
53	<b>Kumuduni Senarathne Menike</b> Dhammika Wickrama Arachchige Rohini	Sri Lanka	Genetic Diversity of Selected Capsicum Accessions Derived Through Morphological and Molecular Characterization
59	<b>Linshu Zhao</b> Huijun Guo Jiayu Gu Yongdun Xie Junhui Li Luxiang Liu Shirong Zhao Yuping Ding Ziwei He	China	Establishment of a High Efficiency Anther Culture System in Winter Wheat

<i>No. of Poster IAEA-CN-263</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
62	<b>Chengxi Jiang</b> Yashu Fu	China	Development of a Novel Soybean Cultivar Suinong 44
72	<b>Akemi Shimizu</b> Feng Li Hiroshi Kato Sayaka Niwa	Japan	Gamma-Ray Induced Mutation Breeding for Speedy Rice Improvements
77	<b>Nizar Mir Ali</b> Bassam Al-Safadi Dana Jawdat Hussam Al-Faouri Ola Moustafa	Syria	Testing M <sub>8</sub> Advanced Barley Mutant Lines for Maturity, Lodging Resistance and Yield Improvement
79	<b>Mehran Enayati Shariatpanahi</b> Samira Tajedini Abdelbagi Mukhtar Ali Ghanim Baratali Fakheri Mahnaz Oroojloo Nafiseh Mahdinejad	Iran, Islamic Republic of	Haploidy in Rice ( <i>Oryza sativa</i> L.) Mutation Breeding for Striga Resistance
81	Bindeshwar Prasad Sah Binesh Man Sakha <b>Dil Raj Yadav</b> Rajib Kumar Yadav	Nepal	Improvement of Popular Nepalese Rice Varieties Through Mutation Breeding
82	<b>Mehran Enayati Shariatpanahi</b> Samira Tajedini Mukhtar Ali Ghanim Baratali Fakheri Mahnaz Oroojloo Nafiseh Mahdinejad	Iran, Islamic Republic of	Enhancing Efficiency of Mutation Breeding for Striga Resistance in Sorghum by Haploid Technology
83	<b>Dana Jawdat</b> Aghyad Saleh Khin Myat Lwin Ljupcho Jankuloski Manzoor Hussain Massoud Malek Md. Kamrul Islam Mohammad Al-Ali Nowrez Taheir Tianzhen Zhang	Syria	Evaluation of Two Advanced Cotton Mutant Lines in a Different Climatic Area from Their Geographic Origin

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
91	<b>M. Ilhan Cagirgan</b>	Turkey	Close Sesame: Merely Magic or an Efficient Scientific Technique?
93	Mehran Enayati Shariatpanahi <b>Hamed Ebrahimzadeh</b> Ali Eskandari Behzad Ahmadi Mohsen Niazian	Iran, Islamic Republic of	Amino Acids and Cycocel Application to Enhance Cucumber Haploid Embryogenesis with Gamma Irradiated Pollen
95	<b>Shatha Yousif</b> Maha Taeen Nora Abid Tagreed Abduljabar	Iraq	Growth of Wheat Mutants Under Drought Stress
96	<b>Faiz Ahmad</b> Abdul Rahim Harun Affrida Abu Hassan Ahmad Nazrul Abd Wahid Mohd Noor Hidayat Adenan Mohd Zulmadi Sani Mustapha Akil Zaiton Ahmad	Malaysia	Improvement of Kenaf ( <i>Hibiscus cannabinus</i> L.) Through Gamma Ray Induced Mutation
97	<b>Yulianti Yulianti</b> Reflinur Reflinur	Indonesia	Genetic Diversity Fourteen Soybean Mutant Lines Using SSR Markers and Yield Performance Under Dry Land Condition
99	<b>Ali Eskandari</b> Azam Borzouie Saeed Soufizadeh Sorayya Navid	Iran, Islamic Republic of	Investigating Yield and Yield Components of 14 Control and Gamma-Irradiated Barley ( <i>Hordeum vulgare</i> L.) Cultivars in the Temperate Zone in Iran
105	<b>Habibah Al- Menai</b> Merlena Babu Nisha Aneesh Ouhoud Al-Ragam	Kuwait	Implementation of Mutation Induction to Improve Barley Production
107	<b>Abdullah Al- Shatti</b> Habibah Al-Menai Ouhoud Al-Ragam	Kuwait	Evaluation of Some Barley Mutant Lines in Kuwait
109	<b>Ravi Seewoogoolam</b> Rita Devi Nowbuth	Mauritius	Determination of 50% Growth Reduction Dose (GR50) of Gamma Irradiation for Local Landraces of Cauliflower ( <i>Brassica oleracea</i> Var. Botrytis) and Cabbage ( <i>Brassica oleracea</i> Var. Capitata) in Mauritius

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
111	<b>Banumaty Saraye</b> Bradley J. Till Joanna Beata Jankowicz-Cieslak Rita Devi Nowbuth Sabinaz Peerboccus	Mauritius	Induced Genetic Variability for Yield and Heat Tolerance in Tomato ( <i>Solanum lycopersicum</i> L.)
113	<b>Prince M. Matova</b> Collis Mukunguritse Dumisani kutywayo Edmore Gasura Fatma Sarsu Hussein Shimelis Onismus Chipfunde	Mauritius	A Decade of Progress in Cowpea Genetic Improvement Using Mutation Breeding in Zimbabwe
114	<b>Marco Sinche-Serra</b> José Velásquez Juan Aguilar-Aguilar Trajano Ramirez	Ecuador	Promising Lines of <i>Lupinus mutabilis</i> Sweet Derived from Mutation Induction with Ionizing Radiations
115	<b>Annah Indetie</b> Stephan Nielen	Kenya	Evaluation of <i>Brachiaria ruziziensis</i> and <i>Brachiaria brizantha</i> Mutants on Field Establishment, Diversity and Performance
116	<b>Parmeshwar Sahu</b> <b>Parmeshwar</b> Ashish Kumar Tiwari Ashish B.K. Das Bikram Deepak Sharma Deepak Samrath Baghel Samrath Satyapal Singh Satyapal Vikash Kumar Vikash	India	Radiation Based Induced Mutagenesis for Developing Nutritionally Enriched Rice Varieties
118	<b>Manika Noi-lam</b> Boonsirichai Kanokporn Kanchana Klakhaeng Vararas Khamvarn	Thailand	Induce Mutation for Early Maturity in Pathumthani 1 (Ptt1) Rice Variety

<i>No. of Poster IAEA-CN-263</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
120	<b>Myat Myat Minn</b> Khine Khine Zar Linn	Myanmar	Development of Drought Tolerant Mutant Lines from Rice Variety Manawthukha Using Mutation Breeding Technique
121	<b>Rita Devi Nowbuth</b> Nema Cahoolessur Priya Huzar Fatty Beejan Ravi Seewoogoolam	Mauritius	Application of Gamma Irradiation for the Improvement of Cauliflower, Cabbage and Carrot in Mauritius
122	<b>Thanh Pham</b> Hoan Nguyen	Viet Nam	Introgression of Blast Resistance Gene into Rice Cultivar BC15 Through Marker-Assisted Selection
132	<b>Azri Kusuma Dewi</b> Ita Dwimahyani Reflinur Basyirin	Indonesia	Yield Variation and Genetic Diversity Among Kewal Local Rice Mutant Lines from Indonesia Based on STS Markers
134	<b>Sherly Rahayu</b> Desta Wirnas Hajrial Aswidinnoor	Indonesia	Genetic Analysis and Correlation of Growth and Yield Components of Rice Mutant Lines Under Three Different Altitudes.
139	<b>Freddy Bulubulu Otono</b> Aimé Diamuini Ndofunsu	Congo, Dem.Rep.of	Increasing the Genetic Variability for the Improvement of Maize for Enhanced Tolerance to Drought and Nitrogen Stresses
141	<b>Luz Gomez- Pando</b>	Peru	Evaluation of Barley Mutant Varieties and Advanced Lines for Food and Forage Production for the Highlands of Peru
143	<b>Carmenza Munoz Florez</b> Daniel Deobouck Idupulapati Rao Sarsu Fatma	Colombia	Developing Stress Tolerant Tepary Bean Through Mutation Breeding
144	<b>Ayse Sen</b> Necmi Beser	Turkey	Developing Mutant Rice Germplasm Combining Gamma Ray Mutagenesis with Doubled Haploidy in National and International Rice Breeding Programmes
146	<b>Kelvin Kamfwa</b> Kalaluka Munyinda	Zambia	Genetic Improvement of Common Bean ( <i>Phaseolus vulgaris</i> ) in Zambia

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
147	Sergio Ahumada Flores Cesiah de la Torre Amavizca Eulogio de la Cruz Torres Fannie Isela Parra Cota Luz Rayda Gómez Pando	Mexico	Improving Yield and Commercial Potential of Wheat for Heat Tolerance by Mutation Induction Techniques
148	<b>Harimalimalala</b> <b>Jhonny Rabefiraisana</b> Abdelbagi Mukhtar Ali Ghanim Alice Andrianjaka Berthe Rasoamampionona Ljupcho Jankuloski Mbolatiana Alina Razafindrasoa Nirina Hanitriniaina Ravelonjanahar Noronirina Victorine Rakotoarisoa	Madagascar	Impact of Mulch-Based Cropping Systems Using Green Mulch and Residues on the Performance of Advanced Mutants Lines of Maize ( <i>Zea mays</i> (L.)) Under Infested Field with the Parasitic Weed <i>Striga asiatica</i> (L.) Kuntze in Madagascar

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
151	<b>Noronirina Victorine Rakotoarisoa</b> Abdelbagi Mukhtar Ali Ghanim Alice Andrianjaka Berthe Rasoamampionona Harimialimalala Jhonny Rabefiraisana Ljupcho Jankuloski Xavier Roland Theophile Rakotonjanahary	Madagascar	Induced Mutation for Developing Mutant Rice Lines Tolerant to the Parasitic Weed <i>Striga asiatica</i> (L.) Kuntze
160	<b>Nikhil Gaikwad</b> Akash Ramtake Shitalkumar Desai Vinod Dhole	India	Gamma Rays, EMS and Sodium Azide Induced Genetic Variability for Quantitative Traits in Ajara Ghansal Non-Basmati Aromatic Rice
165	<b>Dolgor Tsognamjil</b> Myagmarsuren Yadamsuren	Mongolia	Mutation Breeding of Wheat for Food and Feed Purpose
167	<b>Dalila Ramla</b> Mohand-Said Yakhou Nassima Bilek	Algeria	High Yielding and Early Maturity Barley Mutant Line Obtained through <i>In Vitro</i> Radio-mutagenesis
171	<b>Archana Joshi Saha</b> Golu Misra Sreenivasulu Kandali Reddy	India	Mutation Breeding in Chickpea ( <i>Cicer arietinum</i> L.) for Increased Genetic Variability, Improved Quality and Agronomic Traits
174	<b>Aziz Salameh</b> Ismail Hroub Ljupcho Jankuloski Rezq Basheer-Salimia Yamen Hamdan	Palestine	Induced Mutations in Durum Wheat ( <i>Triticum durum</i> ) for Improve Productivity Components Traits
177	<b>Sruba Saha</b> Amitava Paul Sanjay Jambhulkar	India	Spectrum Frequency and Segregating Pattern of Some Useful Macro Mutants in Sesame ( <i>Sesamum indicum</i> L.) through Induced Mutation



No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
188	<b>Shamsun Nahar Begum</b> Mirza Mofazzal Islam Rigyan Gupta	Bangladesh	Induced Mutagenesis for The Improvement of Green Shiny Colour Mungbean Variety
191	<b>Tan Phuong Tran</b> Quang Cua Ho Thi Thu Huong Nguyen	Viet Nam	Combination of Induced Mutation and Hybridization Methods for Rice Breeding
193	<b>Shitalkumar Desai</b> Akash Ramteke Nikhil Gaikwad Vinod Dhole	India	Effect of Gamma Rays, EMS and Sodium Azide on Quantitative Characters in Kala Jirga Non-Basmati Aromatic Rice ( <i>Oryza sativa</i> L.) Cultivar from Kolhapur India
197	<b>Shivram Khadke</b> Vijay Kothekar	India	Effect of EMS and SA on Trypsin Inhibitor Content in Moth Bean ( <i>Vigna aconitifolia</i> (Jacq.) Marechal)
200	<b>Mohammad Reza Rahemi</b> Ali Eskandari Ebrahim Moghiseh Kamran Mozaffari Ljupcho Jankuloski Manzoor Hussain Masoud Rahimi Massoud Malek Mohammad Amiripari Omran Alishah	Iran, Islamic Republic of	Evaluation of New Cotton Mutant Cultivars for Adaptation to Climate Change in Iran
203	<b>Yanina Arnaoudova</b> Elena Topalova Valentina Valentina Velichka Todorova Veselina Nikolova	Bulgaria	High Temperature Effect on the Male Gametophyte and the Photosynthetic Activity of Two <i>Capsicum annum</i> L. Cultivars
204	<b>Djibril Yonli</b> Hamidou Traore Nofou Ouedraogo Philippe Nikiema	Burkina Faso	Mutation Breeding for Resistance to <i>Striga hermonthica</i> (Del.) Benth. In Sorghum for Food Security in Burkina Faso

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
207	<b>Ferhat Kızılgeçi</b> Behiye Tuba Biçer Cuma Akıncı Mehmet Yıldırım Onder Albayrak	Turkey	Responses of Chickpea ( <i>Cicer arietinum</i> L.) Genotypes Induced by <i>Ethyl methanesulphonate</i> (EMS)
213	Agata Daszkowska- Golec Anna Skubacz <b>Iwona Szarejko</b> Krzysztof Sitko Marek Marzec Marzena Kurowska Miriam Szurman- Zubrzycka Miroslaw Maluszynski Patrycja Gajewska	Poland	Barley Mutant Resources for Functional Analysis of Genes Involved in Response to Drought Stress
215	<b>Mehmet Yıldırım</b> Cuma Akıncı Ferhat Kızılgeçi Nafiz Sonmez Onder Albayrak Behiye Tuba Bicer	Turkey	Effect of Gamma Irradiation on Some Characteristics of Durum Wheat ( <i>Triticum durum</i> L.)
221	<b>Kenneth Danso</b> Abdelbagi Mukhtar Ali Ghanim Daniel Dwarko Ljupcho Jankuloski Wonder Nunekpeku	Ghana	Dose Optimisation for Pollen and Embryos Irradiation Mutation Induction in Oil Palm
230	<b>Faten Raad</b>	Lebanon	Developing Wheat and Barley Local Landraces that are Resistant to Lodging with Reduced Stature and Longer Spike Using Nuclear Techniques in Lebanon
231	<b>Siviengkhek Phommalath</b> Chanthakhone Buoalaphanh Laer Homsengchan Phatsalakone Manivong Sontaya Phethavone	Lao PDR	Achievement of Rice Mutation Breeding in Lao PDR

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
234	<b>Inderjit Singh</b> KS Reddy Manpreet Kaur	India	Induction of New Genetic Variation Through Mutagenesis in Pigeon Pea
235	<b>Lavanya Cherukupalli</b> P. Duraimurugan P. Lakshamma T. Manjunatha K.T. Ramya M. Santhalakshmi Prasad Senthilvel Senapathy A. Vishnuvardhan Reddy	India	Development of Leafhopper and Wilt Resistant Pistillate Line in Castor through Mutation Breeding
236	<b>Andrew Sarkodie Appiah</b> Fidelis Ocloo Joyce Agyei- Amponsah Kenneth Danso Kwamina Banson Mavis OwurekuAsare Wisdom Agbemavor	Ghana	Mutation Induction in <i>Dioscorea esculenta</i> (Lour) Burk for Improved Nutritional and Functional Quality
237	<b>Deepthika Kekulandara</b> Nadeeka Sharmila Thilakarathne	Sri Lanka	Yield and Grain Quality Improvement of Rice through Induced Mutation
239	<b>Chahine Karmous</b> Mokhtar Baraket Sawsen Ayadi	Tunisia	Cereals Mutation Breeding in Tunisia
248	<b>Sufian Suliman</b> Abdelbagi Mukhtar Ali Ghanim	Sudan	Mutation-Induced Variability for Improved Yield in Spring Wheat Under Hot Irrigated Environments

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
252	<b>Udompan Promnart</b> Fatma Sarsu Kanchana Klakhaeng Peera Doungsoongnern Ruenruedee Kaewchuenchai	Thailand	Thai Rice Breeding for Flood Tolerance Through Electron Beam-Induced Mutation
254	<b>Banumaty Saraye</b> Bradley J. Till Joanna Jankowicz-Cieslak	Mauritius	A Pre-Screening Methodology for the Identification of Heat Tolerant Mutants in Tomato ( <i>Solanum lycopersicum</i> L.)
257	Omar Hassan <b>Abdelbagi Mukhtar Ali Ghanim</b> Ivan Ingelbrecht	Sudan	Mutation Induction in Pearl Millet ( <i>Pennisetum glaucum</i> ) and Finger Millet ( <i>Eleusine coracana</i> ) for Dry Lands in Sudan
262	<b>Andrea Hricová</b> Alena Gajdošová Gabriela Libiaková Jozef Fejér	Slovakia	First Slovak Amaranth Varieties Generated through Radiation Mutagenesis
268	<b>Arun Kumar</b> Binay Kumar Agarwal Rajesh Kumar Sanjay J. Jambhulkar Varsha Rani Z.A. Haider	India	Induction of Variability for Yield Components in Indian Mustard ( <i>Brassica juncea</i> L. (Czern & Coss.) Under Acidic Soil Regime of Jharkhand, India
270	<b>Sang-Nag Ahn</b> Hyun-Sook Lee Kyu-Chan Shim Sun-ha Kim Yun-A Jeon	Korea, Republic of	Characterization of a New Gene Controlling Leaf Senescence Using Progeny from an Interspecific Cross in Rice

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
273	<b>Fatma Sarsu</b> Abdelbagi Mukhtar Ali Ghanim Ashwani Pareek Brian P. Forster Ivan Ingelbrecht Muhammed Ashraf Paul Mbogo Kusolwa Priyanka Das Rajeev N. Bahuguna Sneh Lata Singla- Pareek	IAEA	Screening Protocols for Heat Tolerant Mutants in Rice
274	<b>Lindy Rose</b> Altus Viljoen Brad Flett Christell Van der Veyver Kobus Slabbert	South Africa	The Use of Gamma Radiation to Generate Resistance to <i>Fusarium verticillioides</i> in Maize Inbred Lines
276	<b>Heinrich Grausgruber</b> Christian Emsenhuber Fenja Klevenhusen Florian Hochhauser Ljupcho Jankuloski Qendrim Zebeli	Austria	Evaluation of Hooded (Kap1), Awnless (Lks1) and Orange Lemma (Rob1) Mutants of Barley ( <i>Hordeum vulgare</i> L.) for Their Use as Forage Crop
282	<b>Ariungerel Mandakh</b> Ariuntuya Batchuluun Myagmarsuren Yadamsuren Odontungalag Tseeren	Mongolia	Rice Breeding in New Extreme Asian Region, Mongolia
283	<b>Elias Peloewetse</b> Lekgari Lekgari Lekgari Tidimalo Coetzee	Botswana	Broadening the Genetic Base and Nutritional Attributes of Cowpea through Mutation Induction

<i>No. of Poster IAEA-CN-263</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
291	<b>Abdelbagi Mukhtar Ali Ghanim</b> Ljupcho Jankuloski Ivan Ingelbrecht	IAEA	Pre-Field Phenotyping of Lentil Mutants for Drought Tolerance Using Polyethylene Glycol
292	<b>Abdelbagi Mukhtar Ali Ghanim Ljupcho Jankuloski</b> Ivan Ingelbrecht	IAEA	Optimization of Doubled Haploid Production for Enhancing Efficiency of Wheat Mutation Breeding
293	<b>Abdelbagi Mukhtar Ali Ghanim Ljupcho Jankuloski Ivan Ingelbrecht</b>	IAEA	Rapid Cycling Techniques to Accelerate Plant Mutation Breeding in Cereals
294	<b>Abdelbagi Mukhtar Ali Ghanim Ljupcho Jankuloski</b> Ivan Ingelbrecht	IAEA	Optimization of Screening for Salt Tolerance in Soybean for Mutation Breeding
295	<b>Abdelbagi Mukhtar Ali Ghanim</b> Ivan Ingelbrecht	IAEA	Irradiation-Dose Optimization for Mutation Induction in Coffee
296	<b>Abdelbagi Mukhtar Ali Ghanim</b> Adel Ali Ljupcho Jankuloski Ivan Ingelbrecht	IAEA	Mutation Breeding for Resistance to the Parasitic Weed Striga in Major Cereal Crops for Sustainable Food Security

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
301	<b>Miriam Szurman-Zubrzycka</b> Agata Daszkowska- Golec Beata Chmielewska Elena Todorovska Iwona Szarejko Izabela Bedkowska Janusz Jelonek Malgorzata Nawrot	Poland	Development of Barley Tilling Mutants Tolerant to Aluminium Stress
303	<b>Maria Caridad Gonzalez Cepero</b> , Rodolfo Guillama Alonso, Dayne Horta Fernandez, Alba Alvarez Gonzalez, Armando Chavez Ardanza, Novisel Veitia Rodriguez, Mayra Rodriguez Rodriguez		Main Results of Plant Mutation Induction for Abiotic Stress in Cuba



### POSTERS RELATED TO SESSION 3

#### ENHANCING AGRICULTURAL BIODIVERSITY THROUGH NEW MUTATION INDUCTION TECHNIQUES

*These posters will be displayed from Thursday to Friday  
in the Poster Area on M1*

<i>No. of Poster IAEA-CN-263</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
19	<b>Kamani Wijesena</b> Amitha P. Bentota Anoma Nawarathne	Sri Lanka	Effect of Gamma Rays on Seed Germination and Plant Growth Parameters of Three Rice Varieties Cultivated in Sri Lanka
20	Ali Eskandari <b>Azam Borzouei</b> S. Sanaz Ramezanpour	Iran, Islamic Republic of, Islamic Republic of	Effective Selection Criteria for Assessing Salt Stress Tolerance in Beard Wheat Lines Induced by Gamma Radiation
26	<b>Mahesh Kharde</b>	India	Effect of EMS on Seed Germination in Chickpea
27	<b>Anil Wabale</b>	India	Consequences of Sodium Azide on Percent Seed Germination and Peroxidase Isozyme Patterns in Cowpea
28	<b>Ramdas Borse</b>	India	Ascendancy of Physical Mutagen on Calcium Content in <i>Medicago sativa</i> L.
60	<b>Jiayu Gu</b> Hongchun Xiong Huijun Guo Junhui Li Kui Shi Luxiang Liu Yongdun Xie Yuping Ding Linshu Zhao	China	Analysis of Multiple Differences Associated with Chloroplast in the Spaceflight-Induced Wheat Leaf Colour Mutants

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
67	<b>Deepak Sharma</b> <b>Deepak</b> Ashish Tiwari Ashish Bikram Kishore Das Bikram Parmeshwar Sahu Parmeshwar Samrath Baghel Samrath Satyapal Singh Satyapal Vikash Kumar Vikash	India	Improvement of Traditional Rice Landraces of Chhattisgarh (India) Through Radiation Induced Mutagenesis
100	<b>Munasingha</b> <b>Jayasundara</b> <b>Mudiyanselage</b> <b>Priyanthi</b> <b>Kumararathna</b> Abdelbagi Mukhtar Ali Ghanim	Sri Lanka	Mungbean Radiosensitivity Test to Gamma Irradiation for Mutation Breeding in Mungbean
103	<b>Priya Huzar Futty</b> <b>Beejan</b> Rita Nowbuth	Mauritius	Study to Determine the Growth Reduction Dose 50 (GR50) For Gamma Rays Induced Mutagenesis in Carrot ( <i>Daucus carota</i> L.)
110	<b>Hong-II Choi</b> Sang Hoon Kim Si-Yong Kang Sung-Min Han Sungil Lee Yeong Deuk Cho	Korea, Republic of	Evaluation of the Effects of Proton Beam Irradiation on Germination and Growth in Rice Seeds
126	<b>Eben Von Well</b> Annabel Fossey Marde Booyse	South Africa	The Relationship Between the Presence of Branched Ears, Fertility, Seeding Growth and Energy Conversion after Gamma Irradiation of Kernels in <i>Triticum aestivum</i> L.
129	<b>Noel Arrieta</b> <b>Reina Cespedes</b> Miguel Barquero	Costa Rica	Radiosensitivity Test on Gamma Irradiated <i>Coffea arabica</i> Var. Venecia <i>In Vitro</i> Zygotic Embryos
133	<b>Arjana Ylli</b> Ilirjana Stamo	Albania	Induced Chlorophyll Content and Morphological Mutations in <i>Phaseolus vulgaris</i>
161	<b>Mohammad Abul</b> <b>Kalam Azad</b> Ara Begum Md. Hassanuzzaman Rani Mirza Mofazzal Islam	Bangladesh	Carbon Ion Beam Irradiation Technique Shortens Breeding Cycle and Induces Novel Mutants in Rice

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
172	<b>Vinod Dhole</b> Sreenivasulu Kandali Reddy	India	Comparative Efficacy of Electron Beam Over Gamma Rays to Induce Novel Mutations in Mungbean ( <i>Vigna radiata</i> L. Wilczek)
173	<b>Vikash Kumar</b> Anjali Chauhan Avinash K. Shinde Bikram K. Das Deepak Sharma Ramesh L. Kunkerkar	India	Gamma Ray Induced Mutagenesis for Developing New Mutant Genotypes with Higher Yield Potential in Red Kernel Rice Variety 'Surak'
182	<b>Suvendu Mondal</b> Anand Badigannavar Poonam Bhad	India	Development of High Yielding and Large Seed Mutants of Trombay Groundnut ( <i>Arachis hypogaea</i> L.). Using Electron Beam Irradiation
189	<b>Regina C. Oliveira</b> Stephan Nielen	Brazil	Characterization of Remarkable Mutants and Ecotypes of Brachiaria ( <i>Urochloa</i> Spp.) and New Collections of Forage Grasses from Kenya.
201	<b>Elsayed Elazazi</b> Aisha Al-Kuwari Maryam Al-Qahtani Nafeesath Shahsil	Qatar	Enriching Genetic Diversity and Conserving Plant Genetic Resources Using Nuclear Techniques and Related Technologies in the State of Qatar
210	<b>Busiso Mavankeni</b> Shylet Tsekenedza	Zimbabwe	Creation of Variability in Bambara Groundnut Using Mutation Breeding
243	<b>Sophia Gofner</b> Chenguang Zhou Fengjie Yuan Karl-Heinz Engel Qingyao Shu Yuanyuan Tan	Germany	Influence of Cross-Breeding on The Phytic Acid Contents of Low Phytic Acid Rice and Soybean Mutants
246	<b>Anh Vu Nguyen</b> Ham Le Huy	Viet Nam	Application of Ion-Beam Irradiation on Cassava Seeds
251	<b>Al-Ghaliya Humaid Khamis AL-Mamari</b> Abdelbagi Mukhtar Ali Ghanim	Oman	Mutation Induction for Sorghum and Rice Using Gamma and X-Ray Radiations
258	<b>Amina Aly</b> Rabab Maraai Sayed Mohamed Youssef Trifa	Egypt	Evaluation of Gamma Ray Induced Mutant Populations of Two Egyptian Bread Wheat Varieties ( <i>Triticum aestivum vulgare</i> L.) for Proline Gene Expression in Two Cultivars Under Salt Stress

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
260	Gulina Doktyrbay <b>Saule</b> <b>Kenzhebeyeva</b> Alfya Abekova Dauren Tashenev Fatma Sarsu Nargul Omirbekova	Kazakhstan	Improvement of Spring Wheat Grain Micronutrients Concentrations Through Mutation Breeding
264	<b>Vanniarajan</b> <b>Chockalingam</b> Priyadharshni Sambath Kumar Selva Kumar Thangaraju J. Souframanien	India	Gamma Ray Induced Black Gram ( <i>Vigna mungo</i> L. Hepper) Mutant Differing in Floral Characters
278	<b>Kimberly Ureña</b> <b>Noel Arrieta</b> <b>Espinoza</b>	Costa Rica	An Approach to Obtain the Optimal Dose of Seed Irradiation for Mutagenesis in <i>Coffea arabica</i>

## POSTERS RELATED TO SESSION 4

### MUTATION BREEDING FOR ORNAMENTAL AND VEGETATIVELY PROPAGATED CROPS

These posters will be displayed from Thursday to Friday in the Poster Area on M1

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
30	<b>Dariusz Kulus</b>	Poland	Can Cryotreatment Be a Tool Useful in Mutation Breeding?
32	<b>Ramon Scherer</b> Alexander De Andrade Augusto Tulmann Neto Giuliano Rigo	Brazil	Banana Mutagenesis <i>In Vitro</i> : Sensitivity of Shoots to Gamma Radiation
36	<b>Kalyani Datta</b> Subodh Kumar Datta	India	Pollen Grain Characters – A Useful Parameter for Testing Radio-Sensitivity and Characterization of Mutants
71	<b>Nobuko Mase</b> Toshihiro Saito	Japan	Genetic Characterization of a Novel Pollen-Part Self-Compatible Mutant of Japanese Pear in Progeny of a Cross Using Pollen from a Chronically Gamma-Irradiated Tree
73	<b>Hiroaki Yamanouchi</b>	Japan	Chimerism in Mutant Woody Crops
75	<b>Hamid Reza Sabaghi</b> Gholamreza Sharifi Sirchi Pejman Azadi	Iran, Islamic Republic of	<i>In Vitro</i> Mutation Breeding of Carnation by Gamma Radiation
88	<b>Murat Seker</b> Engin Gur Mehmet Ali Gundogdu Neslihan Ekinci Nilufer Kaleci	Turkey	Development of Polyploids of Some Citrus Species by <i>In Vitro</i> Colchicine Treatments and Early Selection by Flow Cytometry
104	Mohammed Jawhar Altos Viljoen Mohammed Arabi <b>Nizar MirAli</b> Bradley J. Till	Syrian Arab Republic	High-Throughput Genotyping of VCGs <i>Fusarium oxysporum</i> Pathotypes for Potential Selection of Banana Resistant Mutants

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
119	<b>Norazlina Noordin</b> Mohd Fajri Osman Nashimatul Adadiah Yahya Norellia Bahari Norhafiz Talib Nurhayati Irwan Saw Peng Chong	Malaysia	Improvement of <i>Stevia rebaudiana</i> Bertoni Through Gamma Irradiation and Micropropagation
138	<b>Ethel Velasquez</b> Adriana Nario Oscar Duran Paulina Aguirre	Chile	Chilean First Steps in Plant Mutation Breeding
149	<b>Murat Seker</b> Engin Gur Mehmet Ali Gundogdu Neslihan Ekinci Nilufer Kaleci	Turkey	Phenological and Pomological Differences in Gamma Irradiated '0900 Ziraat' Sweet Cherry Mutants
156	<b>Aime Diamuini Ndotsunsi</b> Freddy Bulubulu Otono	Democratic Republic of the Congo,	<i>In Vitro</i> Mutagenesis in Congolese Cassava Accession, Boma and Reverse Genetics Strategies (Tilling) Studies
217	Viktor Kozhevnikov <b>Aleksander Pavlov</b> Anton Kozhevnikov Rena Mikailova	Russian Federation	Mutation Breeding of Ornamental Crops
227	<b>Guillermo del Carmen Reyes-Castro</b> Donald Juárez-Gómez Heeidy Corea-Narváez Rosario García-Loáisiga Stephan Nielen	Nicaragua	Broadening the Genetic Variation of Vegetatively Propagated Crops Using Nuclear Techniques in Nicaragua
228	<b>Julius Baguma</b> Robert Kawuki Settuba B. Mukasa	Uganda	Exploring Induction of Doubled Haploids in Cassava Through Wide Crossing with Castor Bean
245	<b>Damian Ndubuisi Njoku</b>	Nigeria	Reducing Post-Harvest Physiological Deterioration in Cassava Roots: The Nigerian Experience
249	<b>Babita Dussoruth</b> Vivian Vally	Mauritius	Improvement of Local Dessert-Type Banana for Disease Tolerance and Agronomic Traits Through Nuclear Technique Application

<i>No. of Poster IAEA-CN-263</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
255	<b>Babita Dussoruth</b> Joanna Jankowicz-Cieslak	Mauritius	Irradiation as Means for Increasing Genetic Diversity in Banana: The Need to Carry Out Radiosensitivity Tests on <i>In Vitro</i> Cultures at Appropriate Stage of Growth
263	<b>Emmanuel Ogwok</b> Titus Titus Alicai	Uganda	Developing Disease Resistant High Yielding Farmer-Preferred Cassava Varieties in Uganda Through Induced Mutation Breeding
275	Sasanti Widiarsih Ita Dwimahyani <b>(poster presented by A.K. Dewi)</b>	Indonesia	The Presence of Stem Splitting and Fasciation in Chrysanthemum as Response to Gamma Irradiation and Photoperiod

## POSTERS RELATED TO SESSION 5

### NEW CHALLENGES AND TECHNOLOGIES IN PLANT GENOMICS AND BREEDING

These Posters will be displayed from Thursday to Friday in the Poster Area on M1

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
1	<b>Roman Churyukin</b> Polina Volkova Stanislav Geras'kin	Russia	Radiation Exposure of Barley Seeds Can Improve Plants' Development
39	<b>Sang Nag Ahn</b> Hyun-Sook Lee Kyu-Chan Shim Yeo-Tae Yun Yun-Joo Kang	Republic of Korea	Fine Mapping and Candidate Gene Analysis of The Quantitative Trait Locus Gw8. 1 Associated with Grain Weight in Rice
46	<b>Tao Guo</b> Hui Wang Wenlong Luo Zhiqiang Chen	China	Analysing the Spectrum of Spaceflight-Induced Mutagenesis Via High Throughput Sequencing
47	<b>Li Zhu</b> Guiying Li Xiaoduo Lu Yubin Li	China	Characterization of Novel Sorghum Mutants from an EMS-Mutagenized Population
48	Li Zhang Xuanming Peng <b>Zhen Yang</b>	China	Genomic Variation Characteristics of Gamma Radiation-Induced Mutations in M <sub>1</sub> Population of the Rice Japonica Variety Gaogengnuo
55	<b>Hongchun Xiong</b> Huijun Guo, Linshu Zhao, Luxiang Liu, Yongdun Xie	China	RNA-Seq-Based Transcriptome Analysis of Molecular Variations in Common Wheat Mutants Derived from Gamma-Rays and EMS
63	<b>Xinmei Guo</b> Xinxin Sun Xiyun Song	China	The Proteomics Research in Maize Mutant Seeds By <sup>60</sup> CO-Gamma Ray Radiation
76	<b>Dana Jawdat</b> Bernhard Hofinger Nizar Mir Ali Ola Moustafa	Syrian Arab Republic	High-Resolution Melting Analysis for the Identification of SNP Mutations in the bZIP Domain of Hvwrk38 Gene Among Barley Genotypes
85	<b>Noraishah Hasan</b> Abdul Rahim Harun Norida Mazlan Nusaibah Syed Ali Rafii Mohd Yusoff Shamsiah Abdullah	Malaysia	Marker-Assisted Backcrossing for Recovery of Recurrent Parent Genome from a Cross Between Mr264 and Pongsu Siribu 2 Rice Varieties



No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
123	<b>Vasilissa Manova</b> Christopher West Lubomir Stoilov Wanda Waterworth	Bulgaria	DNA Damage Response During Early Germination in Relation to Seed Aging and Radio-Sensitivity in Barley
124	<b>Vasilissa Manova</b> , Irina Boycheva, Lubomir Stoilov, Ralitsa Georgieva	Bulgaria	Barley Act7 Homologue is Up-Regulated in Response to UC-C Radiation
127	Elena Todorovska Atanas Atanassov Georgi Boncheva Gergana Mihailova Goritz Rakleova Irina Boycheva Katya Georgieva <b>Lubomir Stoilov</b> Lyudmila Simova- Stoilova Rossitza Rodeva Stefan Tsonev Svetlana Misheva Tanya Karceva Valya Vassileva Vasilissa Manova Zlatina Uhr Zornitsa Stoyanova	Bulgaria	Evaluation of Wheat and Barley Germplasm Stress Response by Nuclear, Omics and Physiological Approaches
137	<b>Ayse Sen</b> Irfan Ozturk	Turkey	Association Mapping Study of Agronomic Traits in Backcrossed Mutant Wheat Germplasms Under Drought Stress and Non-Stressed Conditions
145	Andrew Peter, <b>Arumugam Pillai</b> , S. Ramchander, J. Souframanien	India	Association Mapping for Morphological and Grain Quality Traits in Rice White Ponni Mutants
176	<b>Arumugam Pillai</b> K. K. Kumar Yasin Jeshima Khan	India	Modification of Unmethylated Cytosine into Thymine in Sd1 Causes Semi Dwarfing in White Ponni Rice Mutant
179	<b>Poonam Bhad</b> Anand Badigannavar, Suvendu Mondal	India	Association Mapping of Ascorbic Acid Contents, Antioxidant Activity and Seed Weight in Peanut ( <i>Arachis hypogaea</i> L.) Mutants.
183	<b>Fatemeh Maghuly</b> Margit Laimer Markus Freudhofmaier Wayne Parrott	Austria	Establishment of CRISPR/Cas9-Mediated Gene Editing Approaches in <i>Jatropha curcas</i>

<i>No. of Poster IAEA-CN-263</i>	<i>Name</i>	<i>Designating Member State/Organization</i>	<i>Title of Poster</i>
218	<b>Suhua Wang,</b> Xuzhen Cheng	China	A New Variety Zhonglyu No.8 from Space Mutation Induction
219	<b>Lixia Wang</b> Xuzhen Cheng	China	A New Variety Zhonglyu No.12 from Space Mutation
229	<b>Deepika Weerasinghe</b> Akila Amarathunga Darsha Withanawasam Dimanthi Jayatilake Kapikasiri Udawela Mihirini Gunasinghe Pradeepa De Silva	Sri Lanka	Improving Rice Line Ld 99-12-38 For Bacterial Leaf Blight Resistance Through Marker Assisted Selection (MAS)
265	<b>Liuba Coretchi</b> Dinu Cliciuc Ecaterina Bondarencu	Moldova	Molecular and Genetic Aspects of the Resistance of Leguminous Plants to Biotic Stress Factors
286	Andrea Tramontano Luka Jarc <b>Joanna Jankowicz-Cieslak</b> Bernhard J. Hofinger Katarzyna Gajek Miriam Szurman-Zubrzycka Iwona Szarejko Ivan Ingelbrecht Bradley J. Till	IAEA	Fragmentation of pooled PCR products for deep amplicon sequencing
287	Joanna Jankowicz-Ciesla <b>Florian Goessnitzer</b> Chih-Ping Chao Shih-Hung Huang Sneha Datta Ivan Ingelbrecht Bradley J. Till	IAEA	Induced mutagenesis for generating bananas resistant to Fusarium wilt TR4

No. of Poster IAEA-CN-263	Name	Designating Member State/Organization	Title of Poster
288	<b>Joanna Jankowicz-Cieslak</b> Binita Saraye Sini Junntila Attila Gyenesei Ivan Ingelbrecht Bradley J. Till	IAEA	Mapping the Landscape of Gamma and X-ray-induced Mutations in Rice
289	Joanna Jankowicz-Cieslak Binita Saraye Sini Junntila Attila Gyenesei Ivan Ingelbrecht <b>Bradley J. Till</b>	IAEA	Whole Genome Sequencing of Advanced Mutant Lines of Heat Tolerant Tomato Induced by Gamma Irradiation
298	<b>Ivan Ingelbrecht</b> Bernhard Hofinger Eda Akgun Mirta Matijevic Adel Ali Joanna Jankowicz-Cieslak Luka Jarc Ljupcho Jankuloski Abdelbagi Mukhtar Ali Ghanim Heinrich Gausgruber	IAEA	Development of a Functional Marker for Marker-Assisted Selection of 'Orange Lemma' Mutants to Improve Feed Quality in Barley
299	<b>Norman Warthmann</b> Abdelbagi Mukhtar Ali Ghanim Adel Ali Mirta Matijevic Joanna Jankowicz-Cieslak Ivan Ingelbrecht	IAEA	Creating Desired Traits for African Sorghum, Semi-Dwarf and Early Maturing, and Molecular Characterisation of their Genetic Architecture

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Governments of Member States and those organizations whose activities are relevant to the meeting subject matter are invited to designate participants in IAEA scientific conferences and symposia. In addition, the IAEA itself may invite a limited number of scientists as invited speakers. Only participants designated or invited in this way are entitled to present papers and take part in the discussions.

Representatives of the press, radio, television or other information media and members of the public, the latter as 'observers', may also be authorized to attend, but without the right to take part in the proceedings.

Scientists interested in participating in any of the IAEA meetings should request information from the Government authorities of their own countries, in most cases the Ministry of Foreign Affairs or national atomic energy authority.

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A book containing scientific papers based on presentations and selected posters will be published with an external publisher after the Conference.

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Many of the App features can be accessed without logging in. However to enjoy all the features of the App you will need to log in with your individual event code. This code was emailed to all registered participants approximately one week before the conference.

### App Features

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- View an up-to-date programme
- Receive announcements via push notifications

## FORTHCOMING SCIENTIFIC MEETINGS SCHEDULED BY THE IAEA

### 2018

International Symposium on Communicating Nuclear and Radiological Emergencies to the Public  
1-5 October 2018 Vienna, Austria

International Conference on Challenges Faced by Technical and Scientific Support Organizations (TSOs) in Enhancing Nuclear Safety and Security  
15-18 October 2018, Brussels, Belgium

27th IAEA Fusion Energy Conference (FEC-2018),  
22-27 October 2018, Ahmedabad, India

Symposium on International Safeguards,  
5-8 November 2018, Vienna, Austria

Ministerial Conference on Nuclear Science, Technology and Applications for Peaceful Uses  
28-30 November 2018, Vienna, Austria

International Conference on Global Radioactive Material Security Governance  
3-7 December 2018, Vienna, Austria

International Symposium on Understanding the Double Burden of Malnutrition for Effective Interventions  
10-13 December, Vienna, Austria

### 2019

International Symposium on Isotope Hydrology  
20–24 May, Vienna Austria

International Symposium on Standards, Applications and Quality Assurance in Medical Radiation Dosimetry (IDOS-2019)  
18–21 June, Vienna, Austria

International Conference on the Management of Spent Fuel from Nuclear Power Reactors: Learning from the Past, Enabling the Future  
24–28 June, Vienna, Austria

International Conference on Climate Change and the Role of Nuclear Power  
7–11 October, Vienna, Austria

International Symposium on Trends in Radiopharmaceuticals (ISTR-2019)  
28 October–1 November, Vienna, Austria

International Conference on Effective Regulatory Systems for Nuclear and Radiation Safety  
November, Amsterdam, Netherlands

International Conference on Research Reactors: Addressing Challenges and Opportunities to Ensure Effectiveness and Sustainability  
25–29 November, Buenos Aires, Argentina

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