

IAEA Secretariat:

Scientific Secretary: Q.Y. Shu
Symposium Coordinator: K. Morrison
Administrative Support: K. Allaf
M. Dani

Location of the Symposium:

International Atomic Energy Agency
Vienna International Centre (VIC)
Building C
IAEA Boardroom, 4th floor
UNIDO Boardroom, 4th floor
Wagramer Strasse 5
1400 Vienna, Austria

Tel.: (+43 1) 2600 21336

Fax: (+43 1) 2600 29325

Working Language: English

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

Programme Overview

Monday, 11 August 2008

15:00–18:00	Registration	Gate 1 and Ground Floor Building B
16:00–18:00	Welcome Reception	Ground Floor Buildings A+B

Tuesday, 12 August 2008

08:00	Registration	Gate 1 and Conference Desk, C04
09:00–10:15	Opening Session	IAEA Boardroom, C04 UNIDO Boardroom, C04 (via CCTV)
10:15–12:45	Plenary Session 1	Induced Mutations in Food and Agriculture IAEA Boardroom, C04 UNIDO Boardroom, C04 (via CCTV)
12:45–14:00	<i>Lunch Break</i>	
14:00–18:00	Concurrent Session 1	Mutational Enhancement of Genetic Diversity and Crop Domestication IAEA Boardroom, C04
15:40–16:10	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
14:00–18:00	Concurrent Session 2	Plant Mutagenesis – DNA Damage, Repair and Genome Stability UNIDO Boardroom, C04
15:40–16:10	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>

Wednesday, 13 August 2008

08:30–12:30	Concurrent Session 3	Biofortification of Staple Food Crops for Improved Micronutrient Status IAEA Boardroom, C04
10:30–11:00	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
08:30–12:30	Concurrent Session 4	Induced Mutations for Traits that Affect Abiotic Stress Tolerance and Adaptation to Climate Change UNIDO Boardroom, C04
10:35–11:00	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
11:00–12:30	Workshop	Breeding of Low Phytate Rice for Biofortification and Reduction of Phosphorus Pollution Meeting Room, C07IV
12:30–13:30	<i>Lunch Break</i>	
13:30–17:40	Concurrent Session 5	Induced Mutations for Enhancing Crop Quality and Nutrition IAEA Boardroom, C04
15:35–16:05	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
13:30–17:40	Concurrent Session 6	New Techniques and Systems for Mutation Induction UNIDO Boardroom, C04
15:35–16:05	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
18:00–20:00	Poster Viewing and Reception	in Ground Floor Buildings A+B

Thursday, 14 August 2008

08:30–13:00	Concurrent Session 7	High Throughput Techniques for Mutation Screening IAEA Boardroom, C04
10:30–11:00	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
08:30–13:00	Concurrent Session 8	Mutation Induction and Breeding of Ornamental and Vegetatively Propagated Plants UNIDO Boardroom, C04
10:30–11:00	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
13:00–14:00	<i>Lunch Break</i>	
14:00–17:40	Concurrent Session 9	Induced Mutations in Seed Crop Breeding (1) IAEA Boardroom, C04
15:40–16:10	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
14:00–17:40	Concurrent Session 10	Induced Mutations in Seed Crop Breeding (2) UNIDO Boardroom, C04
15:40–16:10	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>

Friday, 15 August 2008

08:30–13:00	Plenary Session 2	Induced Mutation in Genomics Era: New Opportunities and Challenges IAEA Boardroom, C04 UNIDO Boardroom, C04
10:35–11:05	<i>Coffee/Tea Break</i>	<i>Ground Floor Buildings A+B</i>
12:40–13:00	Closing remarks	

Programme in Detail

MONDAY, 11 AUGUST 2008

15:00–18:00 **Registration and Distribution of
Symposium Material**

**Poster and
Exhibition Set Up**

16:00–18:00 **Reception**

TUESDAY, 12 AUGUST 2008

08:00 **Registration**

09:00-10:15 **OPENING SESSION**

IAEA Boardroom, C04
UNIDO Boardroom, C04 (via CCTV)

Chairperson: **Q. Liang**
Director
Joint FAO/IAEA Division of Nuclear
Techniques in Food and Agriculture

W. Burkart
Deputy Director General
Head of the Department of
Nuclear Sciences and Applications, IAEA

FAO Representative

R. Phillips
University of Minnesota, USA and
Vice President, International Crop Science
Society

P.J.L. Lagoda
Head, Plant Breeding and Genetics Section,
Joint FAO/IAEA Division of Nuclear
Techniques in Food and Agriculture

10:15–12:45 **PLENARY SESSION 1:**
Induced Mutations in Food and Agriculture

IAEA Boardroom, C04
UNIDO Boardroom, C04 (via CCTV)

Chairpersons: **S.K. Banerjee** **India**
 S.-H. Lee **Korea, Rep. of**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
10:15–10:45	M.C. Kharkwal	India
10:45–11:15	U. Lundqvist	Sweden
11:15–11:45	J.N. Rutger	USA
11:45–12:15	H. Nakagawa	Japan
12:15–12:45	S.F. D'Souza	India

12:45–14:00 **Lunch Break**

Opening Remarks

Opening Remarks

Keynote presentation: Expanding the Boundaries of Gene Variation for Crop Improvement/349

Networking and Fostering of Cooperation in Plant Mutation Genetics and Breeding: Role of the FAO/IAEA Programme/409

Title/No. of Paper IAEA-CN-167

Role of Induced Mutations in World Food Security/393

Eighty Years of Scandinavian Barley Mutation Research and Breeding/172

The Induced *sd1* Mutant and Other Useful Mutant Genes in Modern Rice Varieties/343

Induced Mutations in Plant Breeding and Biological Researches in Japan/243

Mutation Breeding in Oilseeds and Grain Legumes in India: Accomplishments and Socio-economic Impact/084

TUESDAY, 12 AUGUST 2008

14:00–18:00 **CONCURRENT SESSION 1:
Mutational Enhancement of Genetic
Diversity and Crop Domestication**

IAEA Boardroom, C04

Chairpersons: **M. Gale** **UK**
 E. Frison **Bioversity International**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
14:00–14:25	E. Frison	Bioversity International
14:25–14:50	A. Druka	UK
14:50–15:15	T. Komatsuda	Japan
15:15–15:40	B. Keller	Switzerland

15:40–16:10 Coffee/Tea served on the ground floor A+B
 building

16:10–16:35	P.D. Chen	China
16:35–17:00	P. Si	Australia
17:00–17:15	E. Guimaraes	FAO
17:15–17:30	L.A. Burdenyuk- Tarasevych	Ukraine
17:30–17:45	E. Nehnevajova	Switzerland
17:45–18:00	D.Y. Yu	China

Title/No. of Paper IAEA-CN-167

Making the Most of Agrobiodiversity to Improve Livelihoods/367

Genetics of the Induced and Natural Phenotypic Variation in Cultivated Barley/394

A Mutant Homeobox Gene Created Six-rowed Spike in Barley Domestication/365

Allele-mining and Natural Diversity in Wheat Powdery Mildew Resistance Genes/344

Irradiation-induced Wheat-alien Translocation Lines and their Application in Wheat Breeding/240

Induced Mutation in Narrow-leafed Lupin Improvement: An Example of Herbicide Tolerance/363

The Global Partnership Initiative for Plant Breeding Capacity Building (GIPB)/416

Results of Utilization of Chernobyl Radio Mutant in Breeding Programs of *Triticum Aestivum* L./058

Sunflower Mutants with Improved Growth and Metal Accumulation Traits Show a Potential for Soil Decontamination/098

Construction and Characterization of Mutant Populations in Soybean/122

TUESDAY, 12 AUGUST 2008

14:00–18:00 **CONCURRENT SESSION 2:
Plant Mutagenesis – DNA Damage,
Repair and Genome Stability**

UNIDO Boardroom, C04

Chairpersons: **H. Puchta** **Germany**
 K. Riha **Austria**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
14:00–14:25	K. Riha	Austria
14:25–14:50	A. Levy	Israel
14:50–15:15	B. Hohn	Switzerland
15:15–15:40	A. Britt	USA

15:40–16:10 Coffee/Tea served on the ground floor A+B
 building

16:10–16:35	H. Puchta	Germany
16:35–17:00	Y.J. Hua	China
17:00–17:15	J. Juchimiuk – Kwasniewska	Poland
17:15–17:30	B. Po	China
17:30–17:45	V. Manova	Bulgaria
17:45–18:00	Discussion	

Title/No. of Paper IAEA-CN-167

Recombination, Extrachromosomal DNA and Genome Stability/392

Complex Patterns of T-DNA Integration: Homologous, Non-homologous and "Semi-homologous"/384

Influences of the Environment on Plant Genome Dynamics/352

Genetic Requirements for Resistance and Response to Photonic vs. HZE Ionizing Radiation/395

Role of Human Disease Genes for the Maintenance of Genome Stability in Plants/340

DNA Repair Mechanisms of the Extremely Radioresistant Bacterium *Deinococcus radiodurans*/404

Molecular Cytogenetics in an Assessment of DNA Damage and Repair Processes/108

The Enhanced Genomic Instability was Induced by Alpha Particle and Low-energy Ion Irradiation in Somatic Cells of *Arabidopsis thaliana*/048

Genomic and Gene-specific Induction and Repair of DNA Damage in Barley/056,046P

WEDNESDAY, 13 AUGUST 2008

08:30–12:30 **CONCURRENT SESSION 3:
Biofortification of Staple Food Crops
for Improved Micronutrient Status**

IAEA Boardroom, C04

Chairpersons: **L. Davidsson** **IAEA**
 H. Bouis **HarvestPlus**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
08:30–08:50	R. Hurrell	Switzerland
08:50–09:10	H. Bouis	HarvestPlus
09:10–09:30	L. Davidsson	IAEA
09:30–09:50	C. Hotz	HarvestPlus
09:50–10:30	Discussion	

10:30–11:00 Coffee/Tea served on the ground floor A+B
 building

11:00–11:20	P. Beyer	Germany
11:20–11:30	K.M. Jamil	Bangladesh
11:30–11:40	I. Egli	Switzerland
11:40–11:50	J. L. Rosado	Mexico
11:50–12:20	Panel Discussion	
12:20–12:30	Chairpersons	

Title/No. of Paper IAEA-CN-167

Public Health Significance of Micronutrient Deficiencies

Overview of the HarvestPlus Biofortification Programme/388

Human Nutrition at the IAEA – Applications for Evaluating Biofortification

From Harvest to Health: Evaluating the Impact of Biofortified Staple Food Crops

Application of Biotechnology for the Production of Biofortified Staple Food Crops: The Golden Rice Case/387

Efficacy of Beta-carotene Rich Sweet Potato to Improve Vitamin A Status of Bangladeshi Women – Preliminary Results/400

Effects of Bean Polyphenols on Iron Absorption in Humans/386

The Contribution of Zinc Biofortified Wheat to Meeting Zinc Requirements Among Women in Mexico/419

Closing Remarks

WEDNESDAY, 13 AUGUST 2008

08:30–12:30 **CONCURRENT SESSION 4:**
Induced Mutations for Traits that Affect
Abiotic Stress Tolerance and Adaptation
to Climate Change

UNIDO Boardroom, C04

Chairpersons: **R. Tuberosa** **Italy**
 M. Spencer **IAEA**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
08:30–08:55	R.P. Sharma	India
08:55–09:20	I. Szarejko	Poland
09:20–09:45	G. Taramino	USA
09:45–10:10	T. Kuromori	Japan
10:10–10:35	C.D. Li	Australia
10:35–11:00	Coffee/Tea served on the ground floor A+B building	
11:00–11:15	F. Bassi	Italy
11:15–11:30	T. Gechev	Bulgaria
11:30–11:45	M.C. González-Cepero	Cuba
11:45–12:00	A. Pareek	India
12:00–12:15	J.A. de Ronde	South Africa
12:15–12:30	D.S. Kim	Korea, Rep. of
12:30–13:30	Lunch Break	

Title/No. of Paper IAEA-CN-167

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Identifying Root System Genes Using Induced Mutants in Barley/391

Toward Understanding the Genetic Network Controlling Maize Root Architecture/339

Systematic Phenotype Analysis of *Arabidopsis* Ds-tagged Mutants to Unravel Gene Functions in Abiotic Stress Response as well as Growth and Development/337

Development of Acid Soil/Aluminium Tolerant Barley Variety through Marker-assisted Selection and Mutation/399

Making the Most of the Hexaploid wheat (*Triticum aestivum* L.) Genome: Usage of Gamma Ray Mutants for High Throughput Positional Cloning/361

Mutational Analysis to Dissect Oxidative and Abiotic Stress in *Arabidopsis thaliana*/063

Development of Salinity Tolerant Rice Varieties Using Biotechnological and Nuclear Techniques/270,221P,222P

Raising Mutants and Transgenic *Oryza sativa* L. for salinity Stress Tolerance Using Gamma Irradiation and RNAi Tools/033

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Antioxidant Response of an Amino Acid Analog Resistant Rice Mutants/380

WEDNESDAY, 13 AUGUST 2008

11:00–12:30 **WORKSHOP:
Breeding of Low Phytate Rice
for Biofortification and Reduction
of Phosphorus Pollution**

Meeting Room C07IV

Coordinators: **P.J. L. Lagoda** **IAEA**
 V. Raboy **USA**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
11:00–11:05	P.J.L. Lagoda	IAEA
11:05–11:20	A.A. Cheema	Pakistan
11:20–11:35	S. Taprab	Thailand
11:35–11:50	C.B. Bui	Vietnam
11:50–12:05	T.H. Tai	USA
12:05–12:20	X.H. Xu	China
12:20–12:30	V. Raboy	USA

Title/No. of Paper IAEA-CN-167

Opening Remarks

Induction and Evaluation of Low Phytic Acid Mutants in Basmati Rice/410

Breeding of Low Phytic Acid Rice in Thailand/421

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Development, Characterization and Gene Mapping of Low Phytate Mutations in Rice/417

Closing Remarks

WEDNESDAY, 13 AUGUST 2008

13:30–17:40 **CONCURRENT SESSION 5:
Induced Mutations for Enhancing
Crop Quality and Nutrition**

IAEA Boardroom, C04

Chairpersons: **J.M. Wan** **China**
 L. Munck **Denmark**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
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13:30–13:55	V. Raboy	USA
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13:55–14:20	S.K. Rasmussen	Denmark
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14:20–14:45	Y. Nakamura	Japan
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14:45–15:10	D.X. Wu	China
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15:10–15:35	D. von Wettstein	USA
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15:35–16:05 Coffee/Tea served on the ground floor A+B
 building

16: 05–16:30	Y.B. Xu	CIMMYT
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16:30–16:55	J.M. Fernández– Martínez	Spain
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16:55–17:10	L. Munck	Denmark
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17:10–17:25	N. Tomlekova	Bulgaria
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17:25–17:40	F.-J. Zhao	UK
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18:00–20:00 **Poster Viewing and Reception on the
Ground Floor A+B Building**

Authors are requested to be at their posters
from 18:00 to 20:00 for discussion with interested participants.

Title/No. of Paper IAEA-CN-167

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Revealing of Complex System of Starch Synthetic Metabolism in Higher Plants Using Rice Mutants/357

Developing Mutant Rice High in Resistant Starch Fighting for Diabetes-affected People/398

Mutants Pave the Way to Wheat and Barley for Celiac Patients and Dietary Health/318

Maize Mutant Opaque2 and the Improvement of Protein Quality through Conventional and Molecular Approaches/164

Mutation Breeding for Oil Quality Improvement in Sunflower/250

The Multiple Use of Barley Endosperm Mutants in Plant Breeding for Quality and for Revealing Functionality in Nutrition and Food Technology/301

Creation and Evaluation of Valuable Tools for Pepper Breeding through Induced Mutagenesis/161,173P

Mechanisms of Arsenite Uptake in Rice: Studies Using Rice Mutants/054

WEDNESDAY, 13 AUGUST 2008

13:30–17:40 **CONCURRENT SESSION 6:
New Techniques and Systems for
Mutation Induction**

UNIDO Boardroom, C04

Chairpersons: **D. von Wettstein** **USA**
 H. Nakagawa **Japan**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
13:30–13:55	H. Hirochika	Japan
13:55–14:20	L. Stoilov	Bulgaria
14:20–14:45	L.X. Liu	China
14:45–15:10	A. Tanaka	Japan
15:10–15:35	H.Y. Feng	China

15:35–16:05 Coffee/Tea served on the ground floor A+B
 building

16:05–16:30	S. Toki	Japan
16:30–16:55	C.Q. Cai	USA
16:55–17:10	T. Tzfira	USA
17:10–17:25	A. Lyznik	USA
17:25–17:40	A.R. Prina	Argentina

18:00–20:00 **Poster Viewing and Reception on the
Ground Floor A+B Building**

Authors are requested to be at their posters
from 18:00 to 20:00 for discussion with interested participants.

Title/No. of Paper IAEA-CN-167

Activation of Transposable Elements for Mutation Induction/359

Restriction Endonucleases as a Tool for *In Vivo* Induction of Chromosomal and DNA Damage in Barley Genome/041

Achievements and Perspectives of Crop Space Breeding in China/124

Establishment of Ion Beam Breeding Technology/342

Mutagenic Mechanism on Ion Implantation of Plants/142

Site-directed Mutagenesis in Plants via Gene Targeting/356

Zinc Finger Nuclease-mediated Gene Targeting in Plants/162

Toward Zinc Finger Nuclease-mediated Site-specific Mutagenesis in Plant Species/294

Locus-specific Mutations Induced by Homing Endonucleases in Maize/364

Genetically Unstable Mutants as Novel Sources of Genetic Variability: the Chloroplast Mutator Genotype in Barley as a Tool for Exploring the Plastid Genome/039

THURSDAY, 14 AUGUST 2008

08:30–13:00 **CONCURRENT SESSION 7:
High Throughput Techniques for
Mutation Screening**

IAEA Boardroom, C04

Chairpersons: **B.J. Till** **IAEA**
 U. Lundqvist **Sweden**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
08:30–08:50	B.J. Till	IAEA
08:50–09:10	D. Facciotti	USA
09:10–09:30	V. Talamè	Italy
09:30–09:50	S. Gottwald	Germany
09:50–10:10	T. Nishio	Japan
10:10–10:30	T. Tabone	Australia

10:30–11:00 Coffee/Tea served on the ground floor A+B
 building

11:00–11:20	L.S. Lee	Australia
11:20–11:40	T.H. Tai	USA
11:40–12:00	E. Cuppen	Netherlands
12:00–12:20	S.H. Lee	Korea, Rep. of
12:20–12:40	D. Rigola	Netherlands
12:40–13:00	T.L. Wang	UK

Title/No. of Paper IAEA-CN-167

Global TILLING Projects/353

TILLING: a New Tool in a Plant Breeders Toolkit/350

TILLING with TILLMore/376

TILLING in Two-rowed Spring Barley: Mutation Frequencies and Phenotypes/229

Application of TILLING to Gamma-ray-irradiated Rice and Use of Silent Mutations for Tracing Farm Products/165

ddSNP: A Rapid Method for Mutation Detection in Polyploid Genomes/193

EMAIL – a Highly Sensitive Tool for Specific Mutation Detection in Plant Improvement Programs/336

A TILLING Resource for Japonica Rice/358

Genome-wide TILLING: From Gene-based to Organism-based Screens/354

DNA Sequence Analysis of Induced Mutants in Soybean/351

High Throughput Mutation Discovery Using KeyPoint™ Technology/022

Driving Forward in Reverse/130

THURSDAY, 14 AUGUST 2008

08:30–13:00 **CONCURRENT SESSION 8:
Mutation Induction and Breeding of
Ornamental and Vegetatively
Propagated Plants
UNIDO Boardroom, C04**

Chairpersons: **M. Bokanga** **AATF**
 N. Roux **Bioversity International**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
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08:30–08:55	N. Roux	Bioversity International
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08:55–09:20	S.K Datta	India
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09:20–09:45	E.S. Louzada	USA
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09:45–10:10	S. Nagatomi	Japan
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10:10–10:30	C. Mba	IAEA
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10:30–11:00 Coffee/Tea served on the ground floor A+B
 building

11:00–11:15	S.Y. Kang	Korea, Rep. of
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11:15–11:30	H. Ceballos	Colombia
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11:30–11:45	B. Al-Safadi	Syrian Arab Republic
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11:45–12:00	K.E. Danso	Ghana
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12:00–12:15	A.S. Nair	India
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12:15– 12:30	R. Ibrahim	Malaysia
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12:30–12:45	L.J.C.B. Carvalho	Brazil
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12:45–13:00	S.M. Jain	Finland
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13:00–14:00 Lunch Break

Title/No. of Paper IAEA-CN-167

The Role of Mutation Techniques and Genomics for Banana and Plantain (*Musa* spp.), Major Staple Crops in the Tropics/335

A Report on 36 Years Practical Work on Crop Improvement Through Induced Mutagenesis/282

Citrus Improvement Using Mutation Techniques/368

Mutation Breeding of Chrysanthemum by Gamma Field Irradiation and *In Vitro* Culture/407

Enhancing Genetic Diversity through Induced Mutagenesis in Vegetatively Propagated Plants/402

Mutation Breeding and Characterization of the Gene Transcripts Responsible for Changes in the Flower Color of Chrysanthemum Mutated by a Gamma Irradiation and *In Vitro* Tissue Culture/138

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Induction, Isolation and Selection of Potato Mutants Resistant to Late Blight Disease and Tolerant to Salinity Using *In Vitro* and DNA Marker Techniques/107

Application of Induced Mutation Techniques in Ghana: Impact, Challenges and the Future/259

Molecular Characterization of Somatic Mutation in *Musa acuminata* 'Red'/265

Gamma Irradiation Induced Mutation for the Improvement of Josapine Pineapple Against Bacterial Heart Rot Disease and Improved Fruit Quality/151

Natural Genetic Variation in Cassava (*Manihot esculenta* Crantz) Landraces as a Tool for Gene Discovery/157

Prospects of Induced Mutations and Biotechnology in Vegetatively Propagated Crop Improvement/223

THURSDAY, 14 AUGUST 2008

14:00–17:40 **CONCURRENT SESSION 9:
Induced Mutations
in Seed Crop Breeding (1)**

IAEA Boardroom, C04

Chairpersons: **E. Guimaraes** **FAO**
 J.N. Rutger **USA**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
14:00–14:25	I. Bartkowiak–Broda	Poland
14:25–14:50	S. Tan	USA
14:50–15:15	D. Landau-Ellis	USA
15:15–15:40	H. Kitano	Japan

15:40–16:10 Coffee/Tea served on the ground floor A+B
 building

16:10–16:25	L.J. Qiu	China
16:25–16:40	E. Julio	France
16:40–16:55	D. Gruszka	Poland
16:55–17:10	Z. Sagel	Turkey
17:10–17:25	Y.Y. Barve	India
17:25–17:40	F.J. Yuan	China

Title/No. of Paper IAEA-CN-167

Mutation Techniques for Oilseed Crop Breeding in Poland
(Representative of EUCARPIA)/414

Developing Herbicide-tolerant Crops from Mutations/074

Marker Assisted Backcrossing to Incorporate Two Low
Phytate Alleles into the Tennessee Soybean Cultivar
5601T/037

Functional Analysis of Induced Semidwarf Mutations and
Application to Rice Breeding/251

A Dwarf Mutant Related to BR-deficiency in Soybean
(*Glycine max*)/227

Targeted Mutation Breeding as a Tool for Tobacco Crop
Improvement/220

Expression of Sequences Responsible For Brassinosteroid
Metabolism in Barley Mutants/067

The Improvement of TAEK-Sagel Chickpea (*Cicer arietinum*
L.) Mutant Variety in Turkey/208

Development of *B. Napus* Canola Quality Varieties Suitable
for Indian Agro-climatic Conditions by Induced
Mutations/017,280P

Identification and Characterization of Two Low Phytic Acid
Soybean Mutants/328

THURSDAY, 14 AUGUST 2008

14:00–17:40 **CONCURRENT SESSION 10:**
Induced Mutations
in Seed Crop Breeding (2)

UNIDO Boardroom, C04

Chairpersons: **B. Sigurbjörnsson** **Iceland**
 M.A.J. Parry **UK**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
14:00–14:25	M.A.J. Parry	UK
14:25–14:50	H.-J. Koh	Korea, Rep. of
14:50–15:15	L. Gómez-Pando	Peru
15:15–15:40	Y.L. Jia	USA

15:40–16:10 Coffee/Tea served on the ground floor A+B
 building

16:10–16:25	S.T. Kajjidoni	India
16:25–16:40	C.W. Kang	Korea, Rep. of
16:40–16:55	J. Leitao	Portugal
16:55–17:10	P.J. White	UK
17:10–17:25	M.Q. Vinh	Vietnam
17:25–17:40	Y.J. Wu	China

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Current Status and Research Direction of Induced Mutation Application to Seed Crops Improvement in Vietnam/191

A Novel Dominant Semidwarf Mutant and its Plant Height Revertants Induced with Ion Irradiation in Rice (*Oryza sativa* L.)/049

FRIDAY, 15 AUGUST 2008

08:30–13:00 **PLENARY SESSION 2:
Induced Mutation in Genomics Era:
New Opportunities and Challenges**

**IAEA Boardroom, C04
UNIDO Boardroom, C04 (via CCTV)**

Chairpersons: **P.M. Gresshoff** **Australia**
 Q. Liang **IAEA**

<i>Time</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
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08:30–08:55	P.M. Gresshoff	Australia
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08:55–09:20	J.M. Wan	China
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09:20–09:45	B. Meyers	USA
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09:45–10:10	K.H. Engel	Germany
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10:10–10:35	M. Hansson	Sweden
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10:35–11:05 Coffee/Tea served on the ground floor A+B
 building

11:05–11:30	M. Talon	Spain
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11:30–11:55	P.J. Facchini	Canada
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11:55–12:10	L. Munck	Denmark
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12:10–12:25	G. Rowland	Canada
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12:25–12:40	Q.Y. Shu	IAEA
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Closing Remarks

12:40–12:55	T. Ishige	Japan
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12:55–13:00	A.M. Cetto	IAEA
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Title/No. of Paper IAEA-CN-167

Mutational and Functional Genomic Analysis of Systemic and Local Regulation of Legume Nodulation/415

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Mutagenesis as a Functional Genomics Platform for Pharmaceutical Alkaloid Biosynthetic Gene Discovery in Opium Poppy/314

From Discovery of High Lysine Barley Endosperm Mutants in the 1960-70ties to New Holistic Spectral Models of the Phenome and of Pleiotropy in 2008/300

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Turning Plant Mutation Breeding into a New Era: Molecular Mutation Breeding/413

Plant Mutagenesis in Genomics Era: Opportunities and the Way Forward (Summary of the Symposium)

Closing Remarks

POSTER DISPLAY AND SESSION

All posters will be displayed for the entire duration of the symposium. A poster session with refreshments is scheduled for Wednesday, 13 August 2008 from 18:00 to 20:00. Authors are requested to be present at their posters for discussion with interested participants.

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
002	A. Arzani	Iran, Islamic Rep. of
003	V.V. Radhakrishnan	India
004	A. Nirmalakumari	India
005	S.B. Kaveri	India
006	H.L. Nadaf	India
007	B.N. Motagi	India
008	K. Madhusudan	India
009	A.A. Saif	Yemen
010	D.T.T. Bang	Vietnam
011	H. Hill	Australia
012	X.L. Huang	China
013	P. Manju	India
014	S. Rangaiah	India
015	Z.S. Solanki	India
016	J.D. Barshile	India
018	M. Abraham	India

Title of Poster

Application of Somaclonal Variation and *In Vitro* Induced Mutagenesis in Crop Improvement

In Vitro Mutagenesis for Photo Insensitivity to Tuberisation in Coleus ((*Solenostemon rotundifolius*) (Poir.) J.K. Mortan)

Inducing Lodging Resistance in Littlemillet (*Panicum sumatrense*) through Gamma Irradiation

Induced Mutagenesis for Oil Quality Enhancement in Peanut (*Arachis hypogaea* L.)

Induced Genetic Variability for Yield and Yield Components in Peanut (*Arachis hypogaea* L.)

Induced Mutants to Stabilise Productivity under Foliar Disease Epidemics in Groundnut

Induced Mutants with Improved Nutraceutical Traits in Sesame (*Sesamum indicum* L.)

Induced Mutations for Crop Improvement in Yemen

Breeding New Rice Variety, DT38 selected successfully by Gamma-ray Irradiation

Identification of Novel Starch Traits in Sorghum Bicolor (*S. bicolor*): A Reverse Genetics Approach

Screening Fusarium Wilt-resistant Plants of Brazil Banana (*Musa* SPP., AAA) through EMS Induced Mutations from Micro-cross Sections Cultural System

'Anjitha' – A New Okra Variety through Induced Mutation in Inter Specific Hybrids of *Abelmoschus* spp.

Mutation Breeding in Chilli (*Capsicum Annuum* L.) through Induced Polygenic Variability

Induced Mutations in Cumin (*Cuminum cyminum* L.)

Genetic Improvement of Chickpea (*Cicer arietinum* L.) using Induced Mutation

Induced Mutations in Coleus ((*Solenostemon rotundifolius*) (Poir.) J.K. Mortan) – An Under-utilized Medicinal Tuber

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
019	M.A. Al-Hamdany	Iraq
021	M. Zalewska	Poland
023	C. Yathaputanon	Thailand
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027	S.Q. Shen	China
028	J.S. Bao	China
030	X.Y. Kong	China
031	V. Phadvibulya	Thailand
032	K. Boonsirichai	Thailand
034	C.M. Tang	China
035	M.Z. Song	China
036	C. Lekha Rani	India
038	Z.H. Wang	China
040	S.G. Auti	India
044	S. Ngampongsai	Thailand
045	S. Gvozdenovic	Serbia
046	K. Gecheff	Bulgaria
047	R.R. Latado	Brazil
050	Y. Sreelakshmi	India

Title of Poster

Improved Earliness and Productivity in Cotton by Gamma Rays

Results of Mutation Breeding Activity on Chrysanthemum in Poland

Protein Content in High Protein Soybean Mutants in Thailand

Gamma Rays Induced Mutations in Soybean [*Glycine max* L. Merrill] For Yield Contributing Traits

Rapid Pyramiding of Low Phytic Acid Mutation and Ferritin Gene for Improvement of Mineral Nutritional Quality of Rice

Isolation and Characterization of Mutants from *Indica* Rice 93-11 and Guangluai (*Oryza sativa* L.) Induced by Gamma Irradiation

Development of EMS Mutant Populations for Wheat Functional Genomics

Selection for Resistance to Yellow Vein Mosaic Virus Disease of Okra by Induced Mutation

Genetics of the Radiation-induced Yellow Vein Mosaic Disease Resistance Mutation in Okra

Effects of Gamma-irradiation-induced Mutation on Upland Cotton Pollen Grains

New Varieties Selecting and Mutagenesis Mechanism of Upland Cotton (*G. hirsutum* L.) by Space Mutation

Estimation of Induced Variability in Chillies (*Capsicum annuum* L.)

Induction and Analysis of Rice Lesion Mimic Mutant

Induced Mutagenesis in Mungbean [*Vigna radiata* (L.) Wilczek]

Current Status of Mungbean and the Use of Mutation Breeding in Thailand

Intervarietal Differences in Response of Sunflower (*Helianthus annuus* L.) to Different Mutagenic Treatments

Position-specific Effects in the Action of Mutagenic Agents on the Chromosomes of Barley (*Hordeum vulgare* L.)

Resistance of Mutants of Sweet Orange Induced by Gamma-rays to Citrus Canker (*Xanthomonas citri* subsp. *Citri*) under Artificial Inoculation

Analysis of Tomato Photomorphogenic Mutants for Fruit Quality

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
053	D.S. Radha Devi	India
055	J.-Y. Liu	China
059	B. Singh	India
061	A. Kokhmetova	Kazakhstan
062	Z.S. Lei	China
065	J.M. Chen	China
066	S. Kenzhebayeva	Kazakhstan
068	B.A. Khalmanov	Uzbekistan
069	M.A. Juraev	Uzbekistan
070	Z.Q. Liu	China
071	P. Jompuk	Thailand
072	J.H. Huang	China
073	R.V. Koti	India
075	M. Georgieva	Bulgaria
076	A. Dimitrova	Bulgaria
077	A. Patnaik	India
079	M. Nazarenko	Ukraine
080	K.V. Prasad	India
081	K.V. Prasad	India

Title of Poster

Induced *Ex Vitro* Mutagenesis in Banana Variety Nendran (*Musa paradasiaca* L.)

Reviews and Prospects on Space Mutation Breeding

Enhanced Sensitivity to Mutagens – EMS, MH, SM by Pre-soaking – A Taxometric Study Based on M₁ Parameters in Finger Millet

Wheat Improvement for Drought Resistance and Yield Stability Using Mutation Techniques

Application of Space-induced Mutations for Wheat Breeding

Physical Mapping and Cloning of Genome-Specific Repetitive DNA sequences in *O. rufipogon*

Development of Drought Resistant Cultivars through Mutation Approach in Wheat

Verticillium Wilt Resistance Evaluation in Cotton (*G. Hirsutum* L.) Mutants

Yellow Rust Resistance of Winter Wheat's M₁ in Tashkent Region

Study on Dose of ⁶⁰Co-r Ray for Inducing Mutants from Willow Branches

Mutation Induction Using Acute and Chronic Gamma Irradiation on Some Vegetatively Propagated Ornamental Crops in Thailand

The Application of the Haploid Cell Culture System to Obtain the Variants with Tolerance to Biotic and Abiotic Stress in Plants

Genetic Enhancement of Phosphorus Use Efficiency by Induced Mutagenesis in Soybean

Induction of DNA Damage by Li-ions and Gamma Rays in Barley Genome

Molecular Analysis of the Ionizing Radiation Induced Genetic Variability in Barley

Genetic Enhancement of Speciality Rice through Mutation Approach - Short Grain Aromatic Rice

Role of Macro- and Micromutants in Common Winter Wheat Genetic Improvement

In Vitro Isolation, Purification, Rapid Bulking and Field Establishment of a Promising Radio-mutant Pusa Anmol from Spray Chrysanthemum cv. Ajay

Genetic Fingerprinting of Mutant Rose Cultivars

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
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085	A.M. Badigannavar	India
086	B.K. Das	India
087	S.J. Jambhulkar	India
088	H. Hussain	Malaysia
089	M.S. Uma	India
091	C. Shang	China
092	A.K. Binodh	India
093	S. Sud	India
094	J.G. Manjaya	India
095	P. Suprasanna	India
097	A. Badigannavar	India
099	S. Kundagrami	India
100	S. Srisombun	Thailand
101	A.I. Ragab	Egypt
102	Y.W. Zhang	China
103	B.M. Liu	China

Integrating Biotechnological Advancements with Induced Mutagenesis: New Opportunities for Horticulture with Special Reference to *Vitis vinifera*

A New Mutant for Yellow Mosaic Virus Resistance in Mungbean Variety SML -668 by Recurrent Gamma Rays Irradiation

Genetic Enhancement of Groundnut (*Arachis hypogaea* L.) for High Oil Content through Gamma Ray Mutagenesis

Isolation of Early Flowering Mutant Cultivar C-306 Known for its Good *Chapati*-making Quality

Development and Utilisation of Genetic Variability through Induced Mutagenesis in Sunflower (*Helianthus annuus* L.)

Mutagenesis of Genes for Starch Debranching Enzyme Isoforms in Pea by Means of Zinc-Finger Endonucleases

Induced Genetic Variability for Quantitative Traits in Cowpea (*Vigna unguiculata* L. Walp)

The Quality Study of *Medicago sativa* L. var LongMu803 Irradiated by the Mixed High-energy Particle Field and ⁶⁰Co-Gamma Ray Respectively

In Vitro Mutagenesis for *Alternaria* Resistance in Sunflower (*Helianthus annuus* L.)

Molecular Genotyping of GA₃ Insensitive Reduced Height Mutant of Emmer Wheat (*Triticum dicoccum*)

Genetic Improvement of Soybean through Induced Mutations

Mutagenesis and Selection *In Vitro* for Salinity Tolerance and Molecular Characterization in Sugarcane

Mutational Origin of Genetic Diversity in Cultivated Groundnut (*Arachis hypogaea* L.)

Development of High Productive and Low Neurotoxin Lines in Grasspea through Mutation Breeding

Achievements of Grain Legume Variety Improvement Using Induced Mutation of the IAEA/RAS/5/040 Project in Thailand

DNA Fingerprinting of Safflower Irradiation Induced Mutants by RAPD Markers

Effect of Seed Moisture Content on Satellite Carrying Mutation

Creation of Mutant Library in Rice (*Oryza sativa* L.) by Ion Beam Implantation and Gamma Rays

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
104	Z.L. Yu	China
105	S. Das (Dewanjee)	India
109	B. Kolano	Poland
112	B.J. Apparao (J.D. Barshile)	India
114	B. Khalmanov	Uzbekistan
115	F. Aurigue	Philippines
116	A. Patil	India
117	H. Wang	China
118	Y.Z. Liu	China
119	T. Guo	China
120	Z.Q. Chen	China
121	J.G. Zhang	China
123	M.C. Ichim	Romania
126	M.A.M. Salih	Sudan
127	X.M. Peng	China
129	N. Kumaravadivel	India
132	T. Dasgupta	India
133	M.J. Zamani	Iran, Islamic Rep. of

Title of Poster

Mutation Study on Plants Irradiated with Low-energy Ion Beams

Evaluation of Performance of Induced Mutants in Mungbean (*Vigna radiata* L. Wilczek)

Characterization of *Chenopodium quinoa* Chromosomes Using FISH and Repetitive Sequences

Induction of Viable Mutations in Chickpea (*Cicer arietinum* L.) Employing SA, EMS and Gamma Radiation

Development of Valuable Traits in Cotton Mutants under the Drought and Salinity Conditions

Mutation Breeding in Philippine *Spathoglottis* Orchids

Development of High Oleic Soybean Mutant and its Stability Across the Environments

Genetic Analysis and Gene Mapping of a Dwarf Mutant Rice CHA-1

Analysis of Heterosis and Combining Ability on the Major Characters of Huanghui No. 7, a Rice Wide Spectrum Restorer Line by Space Mutation

Genetic Analysis of Low Amylose Content Trait of Mutant Rice MLA-1 (Indica)

Genetic Analysis and Gene Mapping of a Mutant Dwarf Gene *iga-1* in Rice

The Wide Spectrum Restorer of Rice Breeding by Space Mutation

High-throughput Analysis for Putative Spontaneous Mutations of a T-DNA Integration Site in the Genome of *Arabidopsis thaliana*

Induced Mutation in Pearl Millet (*Pennisetum glaucum*)

Application of Space Mutation and Irradiation in the Breeding of Rice Variety

Induction of Agronomically Useful Mutants in Sorghum through Radiations and *In Vitro* Techniques

Effect of Induced Mutation in a 7×7 Half Diallel Cross Combination on the Genetic Control of Quantitative Traits and Variability in the Advance Generation at Morphological, Biochemical and Molecular Level in Sesame (*Sesamum indicum* L.)

Selection of Wheat Mutant Genotypes Carrying HMW Glutenin Alleles Related to Baking Quality by Using PCR (STS Method)

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134	E.A. Moscone	Argentina
136	R.S. Nandanwar	India
137	P. Huzar Fatty Beejan	Mauritius
139	S.-Y. Kang	Korea, Rep. of
140	S.-Y. Kang	Korea, Rep. of
141	S.-Y. Kang	Korea, Rep. of
143	S.S. Solanki	India
144	O. Coto	Cuba
145	A.R. Muthiah	India
146	S. Singh	India
148	A. Labocha- Pawlowska	Poland
149	M. Kurowska	Poland
154	G. Bonchev	Bulgaria
156	H.R. Cui	China
158	M. Velmurugan	India
159	M. Velmurugan	India
160	S. Nielsen	Brazil

Title of Poster

Analysis of a Valuable Chromosome Rearrangement Induced by Ionizing Radiations in a Cultivated Chili Pepper Line (*Capsicum baccatum* var. *pendulum* – Solanaceae)

Gamma Rays Induced Mutation in Soybean (*Glycine max* L.) Merr.) for Resistance to Moisture Stress, Root Rot and Collar Rot

Use of Irradiation for the Induction of Mutation in Oyster Mushrooms for Improvement of Strains

Selection and Physiological Response of Glyphosate Resistant Zoysiagrass Mutants Derived from a Radiation Breeding Technique

Genome-wide Transcriptome Profiling According to Seed Developmental Stages in a High Amino Acid Accumulating Rice Mutant

Characterization of Salt Tolerant Rice Mutants Induced by *In Vitro* Mutagenesis with Gamma-rays

Induced Genetic Variability for Seed Yield and other Traits in Clusterbean (*Cymopsis tetragonoloba* L.)

Avocado Breeding in Cuba. State of the Art Biotechnologies

Drought Tolerant M₄ Segregants of Soybean Cv. JS 335 and CO(Soy)³

Induction and Evaluation of DEB-Induced Mutants in Barley (*Hordeum vulgare* L.)

Application of the Tilling Strategy for Analysis of Mutation Types and Frequencies Induced by MNU and Gamma Rays in *Hordeum vulgare* and *Arabidopsis thaliana*

Whole Genome Scanning for Mutations Induced by Chemical and Physical Mutagenesis in Barley

Development of Reprotransposon Based Molecular Markers for Fingerprinting Analysis of Hexaploid Wheat and *Triticale sphaerococcum* Mutant Forms

Discovery of Single-nucleotide Mutations in Genes Related to Rice Starch Synthesis and Herbicide Resistance by using Self-made CEL I Extracts

Induction of Variation in *Coleus forskohlii* Briq., through *In Vitro* Mutation Technique

Effect of Slow Irradiation of Gamma Rays on Growth, Yield and Quality of *Coleus forskohlii* Briq.

Isolation and Characterization of Retrotransposons in Wild and Cultivated Peanut Species

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
163	R.A.K. Moustafa	Egypt
166	S. Shiokai	Japan
168	A.A. Nurzhanova	Kazakhstan
173	N. Tomlekova	Bulgaria
175	J.P. Lal	India
176	S. Imanishi	Japan
177	B.-G. Zhu	China
178	B.-G. Zhu	China
179	E.V. Divakara Sastry	India
180	V.L. Sheela	India
181	A. Agnihotri	India
185	A.K. Mehta	India
186	R.S. Nandanwar	India
187	M.T. Kanakamany	India
188	S. Agarwal	India
189	E.J.U. Tongson	Philippines
190	K.S. Shylaraj	India
192	X.Y. Hou	China
194	K. Sharma	India
195	I. Czyczylo-Mysza	Poland

Title of Poster

Development of Salt Tolerant High Yielding Barley Lines via Crossing between a Mutant Induced by EMS and a Local Cultivar

Fine Mapping of the Mutated Gene of a Genic-male-sterile Mutant in Rice

Genotoxicity of Chlororganic Pesticides

Study of Tomato Lines with High Nutritive Quality

Genetic Enhancement of Lentil (*Lens culinaris* Medikus) for Drought Tolerance through Induced Mutations

Analysis of Libraries of 'Micro-Tom' Tomato Mutations Induced by Heavy-ion Bombardment

Responses of EMS-Induced Dwarf/Semi-dwarf Soybean Mutants to Exogenous GA₃

Soybean Varieties Bred with Induced Mutation and their Application in China

Gamma Ray Induced Variation in Cumin (*Cuminum cyminum* L.)

In Vitro Mutagenesis in *DENDROBIUM* CV SONIA

Induction of Novel Genetic Recombinants through Chemical Mutagenesis of Microspores in Indian Mustard *B. juncea*

Gamma Rays Induced Mutations in Oat (*Avena sativa* L.)

Impact Analysis of Newly Developed Mutant Soybean Variety TAM5-98-21

Induction of Genetic Variability in Kacholam, *Kaempferia galanga* L.

Induced Mutations in Bread Wheat Variety VL404 and their Characterization

Establishment of Large Mutant Families of Tomato for Gene Knockouts and other Important Traits

High Yielding Semidwarf *Pokkali* Rice Mutants Tolerant to Abiotic Stresses of Coastal Saline Ecosystem

The Breeding of *Arthrospira platensis* Mutants with Good Quality and High Yield Induced by Space Flight

Induction of double mutations in urdbean (*Vigna mungo* L. Hepper) using combined treatment of EMS and Gamma rays

The Influence of the Treatment of Winter Wheat with Ionizing Radiation on the Growth and Development of Plants

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196	V. Maunkee-Cantiah	Mauritius
198	T.L. Nguyen	Vietnam
200	T.S. Raveendran	India
201	J.W. Zhang	China
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204	P.C. Sharma	India
206	B. Kunter	Turkey
207	K.Y. Kantoglu	Turkey
210	K. Ramkrishna	India
211	L. Fereol	France
213	Yuliasti	Indonesia
214	S. Harzalli Jebara	Tunisia
215	M. Pandiyan	India
216	N. Ramamoorthi	India
218	C. Lavanya	India
221	M.C. González- Cepero	Cuba
222	M.C. González- Cepero	Cuba
224	K. Ramkrishna	India

Title of Poster

Improvement of Taro (*Colocasia esculenta* var *esculenta*) through *In Vitro* Mutagenesis

Induction of Salt Tolerance in High Yielding Rice Varieties through Mutagenesis and Somaclonal Variation

Induction of Temperature Sensitive Male Sterility in Rice using Gamma Irradiation

A Bentazon and Sulfonylurea Sensitive Mutant and its Application in Hybrid Rice

Development of Early Maturing and Semi-Dwarf in Rice by Induced Mutations

Improving Salt Tolerance and Seed Yield in Indian Mustard (*Brassica juncea* L.) through Radiation Induced Mutagenesis

Preliminary Results of Mutation Breeding on High Quality Turkish Sweet Cherry Cultivar "0900 Ziraat"

Researches about Selecting Resistant Melon Types to *Fusarium oxysporium* f. sp. *Melonis* race 1,2 by Using Tissue Culture and Mutation Techniques

Mutation Breeding in Seed Spices

Creation of a White Inflorescence Colour Cultivar of *Alpinia purpurata* through the Combination of Intergeneric Hybridization and Mutagenesis

In Vitro and *In Vivo* Selection of Soybean Mutant Lines on Medium Containing Aluminium

Effect of Salt Stress and Phosphorus Deficiency in Mutants of *Rhizobium* Obtained by Gamma Irradiation

Broadening the Genetic Base and Introgression of MYMV Resistance and Yield Improvement through Unexplored Genes from Wild Relatives in Mungbean

Development of Ideotypes in Urd Bean: Present and Future Research Strategies in Improving Livelihood of Farmers

Use of Gamma Rays for Development of Leaf Hopper Resistant Pistillate Lines in Castor (*Ricinus communis* L.)

Salinity Tolerant Mutant Obtained from Protons Radiations

Development of Drought Tolerant Tomato Varieties through Induced Mutation in Cuba

Mutation Breeding in Arid Legumes in India

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225	R.N.G. Miller	Brazil
226	L. Yang	China
228	H.C. Wang	China
230	D.T. Bang	Vietnam
231	X.B. Xie	China
232	K. Anamthawat- Jonsson	Iceland
234	H. Peskircioglu	Turkey
239	X.E. Wang	China
242	L. Coretchi	Moldova
245	P. Suprasanna	India
246	J.S. Bao	China
252	H. Saika	Japan
253	M. Endo	Japan
254	N. Luyindula	Dem. Rep. of the Congo
255	P.M. Matova	Zimbabwe
257	M. Ouédraogo	Burkina Faso
258	X. Ndzana	Cameroon
260	M.G. Kinyua	Kenya

Title of Poster

Characterization of Resistance Gene Analogs in *Musa acuminata* Cultivars Contrasting in Resistance to Biotic Stresses

Dwarf Male-sterile Wheat: A New Revolutionary Breeding Approach in Wheat

Generation of new Rice Cultivars from Mature Pollens Treated with Gamma Radiation

The Results of *In Vitro* Mutagenesis Breeding in Chrysanthemum

Development of Microsatellite Markers in *Myrica rubra* - A Subtropical Fruit Tree Special in China

Molecular Cytogenetics of Lymegrass and Wheat X Lymegrass Hybrids

Research on Mutant Barley Population under Biotic and Abiotic Stress Condition

Mutagenesis of Two Chinese Wheat Varieties with Scab Resistance

Creation of Mutant Soybean Initial Materials Tolerant to Biotic Stress

Gamma Irradiated Variants of Banana Cultivar Giant Cavendish (AAA) and their Characterization using RAPD Markers

Unlocking Naturally Occurring Variation for Starch Quality by Gene-tagged Markers in Rice

Approach for Metabolic Engineering of Amino Acid Production by T-DNA Mediated Gene Targeting

Creation of the Herbicide Tolerant Rice Plants via T-DNA Mediated Gene Targeting

In Vitro Mutation Techniques and *Phyllanthus niruri* L. Tissue Culture for Secondary Metabolites Improvement having an Antiplasmodial Activity

Status of Cowpea Mutation Breeding in Zimbabwe

Development and Dissemination of Bambara Groundnut Varieties Using Mutation Induction and Biotechnology Techniques

Preliminary Study on Radiation Sensitivity of *In Vitro* Culture of *Xanthosoma* (Macabo) in Cameroon

Development of Wheat Varieties for the Marginal Areas of Kenya through Mutation and Double Haploid Techniques

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261	A. Andrianjaka	Madagascar
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269	E.Y. Parkes	Ghana
271	C. Al Faiz	Morocco
273	R. Arshad	Pakistan
274	K. Masmoudi	Tunisia
275	O. Slama Ayed	Tunisia
276	M. Rahman	Pakistan
277	A.V. Zlatska	Ukraine
278	K. Datta	India
279	K.G. Parmeshwarapa	India
280	Y.Y. Barve	India

Title of Poster

Inducing Cold Tolerance in Malagasy Rice Varieties IR 58614, Malady and Rojofotsy through *In Vitro* Mutagenesis

Improvement of Barley for Drought Tolerance by Induced Mutation

Production of Doubled Haploids in Banana

Development of a Methodology for the Propagation of 'Calcutta 4' (AA) and Plantain Genotypes from Embryogenic Cell Suspensions and its Interface with Mutation Breeding

Development of Cassava Germplasm Resources for the Improvement of High Value Root Quality Traits through Induced Mutation and Marker Aided Breeding in Nigeria

Mutation Induction in Philippine Bananas c.v. 'Lakatan' thru Gamma Ray Irradiation

Molecular Genetic Tools to Modulate Post-Harvest Physiology in Cassava

Induced Mutation Breeding as a Tool for the Genetic Improvement of Cassava Landraces for High Starch and Delayed Post harvest deterioration (PPD) in Ghana

The Use of Induced Mutation in the Development of New Cultivars in Morocco: Achievement and Prospects

Salinity and Water Deficiency Tolerance in Rice: the Role of Rhizobacteria

Enhancing Drought and Salinity Tolerance in Wheat Crop Grown in the Mediterranean Region

Production of Doubled Haploids in Tunisian Durum Wheat (*Triticum durum* Desf.) Cultivars through Unpollinated Ovary Culture

Marker Assisted Selection for Fiber Quality Improvement in Mutation Breeding Programme of Cotton

Storage Protein Mutations Identified in Common Wheat and Barley Accessions and Utilization of those Mutants in Studies of Crop Properties

Cyto-Palynological, Biochemical and Molecular Characterization of Original and Induced Mutants of Garden Chrysanthemum

Induced Variability for Pod Yield, Pod Traits and Foliar Disease Resistance in Groundnut (*A. hypogaea* L.)

Induced Mutations for Development of *B. juncea* Canola Quality Varieties Suitable for Indian Agro-climatic Conditions

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
283	S.K. Datta	India
284	S.K. Datta	India
285	A.S. Syed	Pakistan
286	M.A. Haq	Pakistan
287	S.A. Desai	India
289	I.N. Mamuya	Tanzania, United Rep. of
290	M. Compier	Netherlands
291	R. Peiris	Sri Lanka
293	I. Sutarto	Indonesia
296	N. Benslimani	Algeria
298	E. Sudarmonowati	Indonesia
302	N. Barboza	Costa Rica
303	Z.C. Liu	China
304	C.H. Shi	China
305	J.O. Park	Korea, Rep. of
306	J.O. Park	Korea, Rep. of
308	W.B. Han	China
311	G.L. Bao	China

Role of Classical Mutagenesis for Development of New Ornamental Varieties

Management of Chimera and *In Vitro* Mutagenesis for Development of New Flower Color/Shape and Chlorophyll Variegated Mutants in Chrysanthemum

Development of Improved Varieties of Rapeseed and Mustard through *In Vivo* Mutagenesis and Hybridization in Pakistan

Development of Mutant Varieties of Crop Plants at NIAB and the Impact on Agricultural Production in Pakistan

Hybridization Followed by Mutagenesis is a Novel Method of isolation of Rare Free-threshable Mutants of Dicotyledonous Wheat (*Triticum dicoccum* (Schrank.) Schubl.)

Earliness in Maturity and Semi-dwarfness in Barley Induced through Mutation

Gene and Protein Targeting Technologies Create Novel Opportunities in Plant Biotechnology

M 127 – A Promising Tomato Variety Developed through Induced Mutation Technique

Seedless Citrus Derived from Selected Promising Mutant Lines

Induction of Dormancy in Spanish Groundnut Seeds (*Arachis hypogaea* L.) Using Cobalt-60 Gamma Irradiation

Altering Amylose Content in Indonesian Cassava Through Irradiation: Role of Genotypes, Dosage and Planting Materials

Generation of Promising Lines of Bean (*Phaseolus vulgaris* L.) Induced by Mutations to Increase Competitiveness of Costa Rica

Induction of Mutants With Useful Traits in a Chinese Cassava Genotype via Irradiation Combined with Tissue Culture and Molecular Characterization of Induced Mutants

The Screening and Identification of Mutants from *Indica* Variety 9311 and *Japonica* Variety Nipponbare of Rice (*Oryza sativa* L.)

Acquisition of *Hemerocallis fulva* Mutants by γ -Ray Treatment

Characteristics of *Hosta plantaginea* Mutants Derived from γ -Ray Treatment

Biological Study of *Medicago sativa* L. carried by Chinese Returnable Satellite Shijian 8

Induction and Evaluation of Umbrella-type Panicle Mutant in Japonica Rice

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
312	W.Q. Le	China
315	T. Garcia-Libreros	Colombia
317	F. Mora Umana	Costa Rica
319	D.F. Pan	China
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321	J.A. da Costa Nunes	Portugal
322	A. Luzi-Kihupi	Tanzania, United Rep. of
324	J. Hagel	Canada
325	R. Pathirana	New Zealand
326	A.M. Ali	Sudan
327	M.A. Ali	Sudan
330	T.K. Do	Vietnam
331	M. Kumar	India
332	Y.Y. Wu	China
333	G. Murin	Slovakia
334	I.D. Volotovski	Belarus
338	R.N. Arora	India
341	L. Velasco	Spain

Title of Poster

Induced Mutation Effects on Economic Traits Radiated by γ -⁶⁰Co in Pears

Detecting Mutations in the Dihydrochalcon 2 – Glycosyltransferase and Kunitz Protease Inhibitor Gene amongst a Segregating Apple Population as a SNPs-Based Genome Mapping Strategy

In Vitro Selection of Beans (*Phaseolus vulgaris*) from Costa Rica for Resistance to Fungal Pathogen *Thanatephorus cucumeris* (*Rhizoctonia solani*)

Study on the Space Mutagenic Effects of *Leymus chinensis*

The Development of New Genotypes of the White Yam by Mutation Induction

An Approach to Screen and Identify Novel Meiotic Mutants in an EMS Mutant Population

Mutation Breeding for Rice Improvement in Tanzania

Quantitative ¹H NMR Metabolite Profiling as a Functional Genomics Platform to Investigate Alkaloid Biosynthesis in Natural Mutants of Opium Poppy

Use of Induced Mutations to Adopt Aromatic Rice to Low Country Conditions of Sri Lanka

Overview of Mutation Breeding in Sudan

A Clone of Irradiated Banana Cultivar “Williams” with High Yield Potential

Socio-Economic Impacts of Mutant Rice Varieties in Southern Vietnam

Induction of Mutation in *Acalypha* (*Acalypha tricolor* L.) through Gamma-rays

Assessment and Utilization of Spontaneous Sport Mutant of Grape

Response of Native Flora to Induceable Genotoxic Damage from Increased Radioactivity around NPP Jaslovské Bohunice, Slovakia

A Comparison of Research on Plant-induced Mutagenesis and Transgenesis in Belarus

Mutagenesis in Guar [*Cyamopsis tetragonoloba* (L.) Taub.]

The Role of Induced Mutations for Improving Seed Oil Quality in *Brassica carinata*

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
346	V. Kumar	India
347	K.J. Van	Korea, Rep. of
360	M.T. Hallajian	Iran, Islamic Rep. of
362	O. Calderini	Italy
366	E. de la Cruz Torres	Mexico
369	R.H. Escobar-Perez	CIAT
372	S. Dere	Turkey
374	T. Winzer	UK
375	B. Naserian Khiabani	Iran, Islamic Rep. of
377	M. Ghaffari	Iran, Islamic Rep. of
379	V. Says-Lesage	France
381	S. Jaeger	Germany
382	P. Martinek	Czech Republic
383	Y. Mabrouk	Tunisia
389	V.K. Gour	India
401	Z. Tadele	Switzerland
403	Y. Al-Shayji	Kuwait
405	L.S. Zhao	China
406	H.J. Guo	China

Title of Poster

Characterization of Pre-breeding Genetic Stocks of Urdbean (*Vigna mungo* L. Hepper) Induced through Mutagenesis

Analysis of EMS Mutagenized Soybean by Combination of DOP-PCR and GS-FLX

Designing Polymorphic ISSR Primers in Order to Study Gene Sequences x and y Types Glutenin Subunits in 1D Locus Controlling Favorable Baking Quality in Elite Mutant Lines of Bread Wheat

Italian Mutant Collections of *Medicago truncatula*

The Role of Mutation Breeding on Plant Improvement in Mexico

Towards the Development of a Chimera-free *In Vitro* Induced Mutagenesis System in Cassava (*Manihot esculenta*, Crantz)

Selection Studies on Mutant Durum Wheat (*Triticum durum* Desf.) Populations in Turkey

Heteroduplex Mapping in the Medicinal Plant *Artemisia annua*

Improvement of Mutant Wheat for Baking Quality Using Marker Assisted Selection

Evaluation of Effect of Different Gamma Ray Doses on Anther Culture Response in Two Iranian Wheat Landraces

Development and Molecular Characterization of a Gamma-irradiated Hexaploid Wheat Population

γ -Irradiation of Wild Beet Translocation Lines and Monosomic Addition Lines in Sugar Beet Carrying Nematode Resistance Genes

The Three Pistils Mutation Enables to Produce Three Kernels in a Floret in Bread Wheat (*Triticum aestivum* L.)

Creating Mutations in Plant Resistance Genes to Parasitic Weed

Induced Mutations in *Jatropha curcas*

Applications of Tilling to the Understudied Crops from Africa: the Case of Tef

Induction of Variant in Potato Cultivar Spunta for Stress Tolerance via Tissue Culture Method

Production of Mutants with High Inorganic Phosphorus Content in Seeds by Germplasm Reselection and Mutation Technique in Wheat

Sequence Variations of *In Vitro* pUC18 Plasmid DNA Induced by High Energy ^7Li Ion Beams Implantation

<i>No. of Paper IAEA-CN-167</i>	<i>Name</i>	<i>Designating Member State/Organization</i>
408	C.B. Bui	Vietnam
411	B. Nakhoda	IRRI
412	B. Nakhoda	IRRI
418	S. Taprab	Thailand
420	R. Sjahril	Indonesia

Title of Poster

Development of Rice (*Oryza sativa* L.) with Salt Tolerance

Novel IR64 Mutant Lines with Contrasting Phenotypes under Salt Stress

Field Evaluation of IR64 Mutants with Altered Responses to Salt Stress under Saline and Normal Conditions

Rice Breeding for Salinity Tolerance through Irradiated Mutation in Thailand

Somaclonal Variation of Sugarcane for Salinity Resistant Using Sodiumchloride as Selection Agent

Display of Posters:

All posters will be displayed in the ground floor, Buildings A+B throughout the symposium.

Display of Commercial Exhibits:

Commercial exhibits will be located in the ground floor Building A throughout the symposium. The following companies will be exhibiting:

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Participants in the International Symposium on Induced Mutations in Plants (ISIM) will find an INIS thematic CD in their conference folder. It includes selected references, abstracts and full-text documents from the INIS Database and NCL collection related to induced mutations in plants and the topics covered by the Symposium, in particular mutation breeding for crop and plant improvement by developing radiation-induced mutants, the use of nuclear techniques in plant growth and cultivation, including plant nutrition, metabolism, fertilizer utilization, and irrigation studies and assessment of seed quality by nuclear or radiographic techniques.

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PUBLICATIONS

Proceedings

It is planned to publish the symposium proceedings shortly after the symposium. Instructions on ordering the proceedings will be posted on the symposium web site:

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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 listed in this programme should request information from the governmental authorities of their own countries, in most cases the Ministry of Foreign Affairs, national atomic energy authority or Ministry of Agriculture.

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2008

22nd IAEA Fusion Energy Conference
13-18 October, Geneva, Switzerland

International Conference on Topical Issues in Nuclear Installation
Safety, Ensuring Safety for Sustainable Nuclear Development
17-21 November, Mumbai, India

2009

International Symposium on Nuclear Security
30 March – 3 April, Vienna, Austria

International Ministerial Conference on Nuclear Energy in the 21st
Century
20-21 April, Beijing, China

International Conference on Advances in Radiation Oncology
(ICARO)
27-29 April, Vienna, Austria

9th International Topical Meeting on Nuclear Applications and
Utilization of Accelerators (AccApp09)
4-8 May, Vienna, Austria

International Conference on Remediation of Land Contaminated
by Radioactive Material/Residues
18-22 May, Astana, Kazakhstan

FAO/IAEA Symposium on Sustainable Improvement of Animal
Production and Health
8-11 June 2009, Vienna, Austria

International Symposium on Uranium Raw Material for Nuclear
Fuel Cycle: Exploration, Mining, Production, Supply and Demand,
Economics and Environmental Issues (URAM-2009)
22-26 June?, Vienna, Austria

International Conference on Opportunities and Challenges for
Water Cooled NPPs in the 21st Century
27-30 October, Vienna, Austria

International Conference on Fast Reactors and Closed Fuel
Cycle – Challenges and Opportunities
7-11 December, Kyoto, Japan?

International Conference on Effective Nuclear Regulatory System
October?

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