Asia Solanaceous Round Table

- Vision and Purpose
- ASRT-1 Update
- ASRT-2 agenda & expectation
Offer a forum for the discussion of Research, Breeding and Breeding technology issues relevant to Solanaceous crops; Address issues for the benefit of farmers; and Strengthen public-private sector partnerships, all in the Asian region
What’s the Purpose

- Develop a platform where growers, public and private sector researchers discuss together
- Address specific problems of Asia with focus to solanaceous crop
- Identify and list down problem and issues
- Develop projects to address those issues
- Identify lab & Researchers/Scientist/Breeder for collaboration
What’s the Purpose

- Strengthen public-private-private sector collaboration
- Avoid duplication of work for better utilization of resources
- Train and develop young scientist for the future
- Develop brand image of Asian scientist & their work
- Be recognized and respectful
Asia Solanaceous Round Table (ASRT-1)

Organized Jointly by

[Logos of organizations involved]

(9-10 Sept. 2014, Bangalore, India)

Theme: Disease and Insect Pest Resistance in Solanaceous Vegetables: Successes and Challenges
ASRT-1 : Update

One and half day session

- The Inaugural ASRT was very successful with Very positive feedback
- 280 delegates registered and ~300 attended roundtable
- 145 from Private sector
- 77 from Public sector
- 27 from Abroad,
- 10 speakers from Abroad
- 13 Speakers from India
ASRT-1 : Update

Day-1 : Dedicated to Inaugural address & Technical presentation

- Session 1 : Advances in Breeding for Disease and Insect resistance in Tomato (7 presentations on different topics)
- Session 2 : Advances in Breeding for Disease and Insect Resistance in Pepper (8 presentations)

Day-2 : Technical session, country reporting and Group discussion

- Session 3 : TLCV and Tospovirus Resistance in Tomato (4 presentations)
- Session 4 : Country reporting on recent development and challenges in Solanaceous crop in SA, China, SEA, Japan and Korea
- Round table discussion

All presentations uploaded on APSA website under ASRT
Round table discussion: 5 Topics

• Group-1 : Discussion on TOSPO Proposals to deliver action plan
• Group-2 : Begomoviruses in Tomato and Peppers – What next?
• Group-3 : Anthracnose and Phytophthora in Peppers – Consortium?
• Group-4 : Role of ASRT in future
• Group-5 : Public-private sector Cooperation – Concrete Steps Forward
Round table group discussion on Different Themes
Update: TOSPO proposals to deliver actions plans

(Leads: Tom Burns & Krishna Reddy)

- Basic study to ascertain the tospovirus isolates and thrip species in India and their distribution;
- Identify potential collaborators, both private and public organisations;
- Identify the timeframe, but proposed to be two years;
- Crops would only include tomato;
- Subject to point #1, the scope of the project should include CaCV and PBNV;
- The protocol would be mechanical, thrips and grafting;

Update:

1. Running project with BIOTEC Thailand on TNRV and CaCV.
   - Two years project to develop robust protocol for PBNV and CaCV Screening
   - Project will end this year. Good progress achieved so far.

2. Contacted IIHR, IARI and IIVR in India to develop project on GBNV/PBNV
   - Continue our efforts to collaborate with IIHR
   - No response from IARI & IIVR
   - Opportunity to work with AVRDC at Hyderabad center
Update: Discussion on Begomoviruses of Tomato & Chillies – What next?
(Lead by: Peter Hanson and Muniyappa)

- Begomoviruses causing leaf curl disease are major issue in South and SE Asia and are highly diverse.
- Identify and characterize tomato begomoviruses in tropical Asia in different seasons at the molecular level as well as the whitefly vector.
- Tomato: 5-6 virus resistance gene available. But response of different Ty genes or combinations needs to be determined.

Update & Recommendation:
- Project Running with AVRDC (APSA consortium 24 Companies participated)
- Chance of durable TYLCV resistance could be improved by
  1. Pyramiding known Ty genes,
  2. Identification of new TY resistance
  3. Identification of whitefly resistance genes and combining TY and whitefly resistances.
- Project Finished this year and result circulated to participating companies
- More study is needed to determine any yield penalty associated with available Ty genes
Chilli leaf curl Virus:

- Very serious in India and Indonesia (50-100% crop loss)
- Lack of knowledge on whitefly transmitted begomoviruses of chilli.
- No sources of resistance identified

Recommendation: “Collaborative research involving public and private organizations for Chilli Leaf Curl Virus”

- **Phase I: Virus characterization and resistance evaluation:**
  - A survey, collection of samples and identification of begomoviruses by cloning and sequencing.
  - Production of diagnostics ELISA and PCR.
  - Standardization of whitefly transmission &,
  - Screening of all chilli genotypes for resistance in hot spots

- **Phase II: Mapping of the resistance gene locus:**

- **Phase III: Development of resistant cultivars**

No Collaborators identified till now: Request for proposal
Update: Discussion on Anthracnose & Phytophthora in Peppers – Consortium

(Lead By: Byeong Kang and Roland Schaefleitner)

- Both, Anthracnose fruit rot & Phytophthora wilt identified as most important diseases after virus diseases in most of Asia. (30 to 40 percent yield loss)
- Chemical sprays have not been very effective in controlling these diseases
- Source of resistance to anthracnose reported in C. chinense & C. acutatum.
- Transfer of this resistance to cultivated C. annuum hasn’t been very successful yet.
- For Phytophthora the best resistant accession CM 334 & successfully deployed in Korea.

Recommendation:

- Develop a consortium across public & private sector and take these two important diseases on project mode. (Anthracnose as priority-1)
- 16 seed companies willing to cooperate on anthracnose, 4 on Phytophthora & two Public sector institutes on both.
- Interspecific breeding, study of genetics, developing better protocols for screening & molecular markers were the recommendations

No progress till now: Hence more focus on Anthracnose in ASRT-2
Update : Future of ASRT
(Lead By. Naren Singh, Chandra Pathak & Sadashiva)

- Frequency of ASRT meetings: Bi-annual (Once in Two years)
- Place for next meeting: Thailand
  - Timing of the next meeting: Month of October
  - Membership fee: One time membership Fee (Amount to be decided later)
- Formation of steering committee: to be elected each time

- More Presentations/ discussions on eggplant
  - A theme for the next ASRT to be informed timely
  - Should focus on following areas (Abiotic stresses, Seed production, Crop Agronomy)
  - Launching a web-site for better communication
  - Identifying the areas for training for group members in selected areas
- Enlarging the multilocation trialing of genetic materials at different locations
- Giving recognition awards for best work/presentations etc (Three numbers)
- H.Q. of the ASRT at APSA office at Thailand
  - Develop similar platform for other crop species
Update: Discussion on Private Public Cooperation – concrete steps forward
(Lead by Dani Zamir & Suren Tikoo)

- Creating centres of excellence in PPP mode (co-funded) that will serve as pre-breeding platforms
- Focus on technology (DH, MM development)

- Create hot spots with full facilities to screen germplasm & breeding materials against diseases and other new traits. How and where no such platform
  - Identify new source of resistance
  - Trait elucidation (Tilling)
  - Create unfinished genotypes carrying new traits

- Dani Zamir (Hebrew University, Israel): Willing to share his large Tomato germplasm
  - Hence creation of consortiums in PPP mode like AVRDC/APSA; Cornell University
  - Develop team from Public and Private. ICAR should take the lead for India.

How to create such Center: Need to work out
Very difficult to find collaborators: Several attempts made with Univ/Instt.

Proposal: Creation of APSA research Foundation
- For Basic research
- Manage Collaboration (Private- Public & Private- Private)
- Training young breeders and researchers
Token of appreciation given to Sponsors
Asian Solanaceous Round Table 2017 (ASRT-2)

February 23-25, 2017. Venue: Kasetsart University, Bangkok, Thailand

Organised by:

Asia and Pacific Seed Association (APSA)
P.O. Box 1030, Kasetsart, Bangkok 10903, Thailand
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Theme of ASRT-2

“Challenges and Future Trends in R & D for Solanaceous Crops in Asia”

(”Achieve More and Better from Less”)
Agenda : ASRT-2
3 days Session
Day-1 (23rd Feb 2017)

- Inaugural session
- Session –I : Technical session on advances in Solanaceous crop breeding
- Session-II : Country reports
- Session-II : Round table discussion on 4 different Topics
  - TOSPO Virus in Tomato Lead by: Arvind Kapur ; Co lead : Bikash Mandal
  - Abiotic Stress Breeding Peter Hanson and Co Lead : Arun Joshi
  - Multi Location Trials in Solanaceous crops Introduction by Kriangsak Lead : Surinder K Tikoo and Co Lead : Supat Mekiyanon
  - APSA Research Foundation Lead : N. Anand ; Co Lead : Naren Singh
- TOSPO Virus project Review (BIOTEC): 18.00 to 19.30 hours
  - Kindly attend who are part of this project

Dinner (with Cultural Evening): 19.30 hours
Agenda:  ASRT-2
Day-2 (24th Feb 2017)

- Session –I : Insect Resistance
- Session-II : Advances in Solanaceous crop breeding
- Session-III : Pepper Breeding for Anthracnose & Chilli Leaf Curl
- Session-IV : Public – Private Partnerships
- Session-V : Round table discussion on 5 different Topics
  - Strengthen Public- Private Collaboration Lead by: **Peter Hanson**; Co Lead : **Frederic Perefarres**
  - Chilli Leaf Curl Virus Lead by: **M. Krishna Reddy**; Co Lead : **S.K Kataria**
  - Chilli Anthracnose: Lead by : **J. B. Yoon**  Co Lead : **Naren Singh**
  - Insect Resistance : Lead by: **Chandra Pathak**, Co Lead : **Shashikant Nahire**
  - ASRT 3 : Lead : **Simon de Hoop** :  Co Lead : **Narendra Dadlani**
Agenda : ASRT-2
(Day-3 : 25th Feb2017)

Field Day : Arranged by APSA at Kamphaeng Saen Campus of Kaset Sart University. (1.30 hour drive)

- Field Day event is supported by East West
- Arranged and managed by : Prof. Julapark and his team & World Veg Center Thailand
- Field trial : 100 entries of hot pepper and Tomato planted on 20 Dec & 16th Jan.
- Being screened for different disease resistance
- World Veg. Center also screening Capsicum baccatum accessions for Anthracnose

- Transportation arranged by APSA :
  - Bus will Leave from Hotel Rama Garden at 8AM sharp & return by 3 PM at the Hotel
  - Lunch has been arranged at Field trial site in the Campus.
Round table discussion: ASRT-2

- 20-30 participants in each group
- 45 minutes group discussion and prepare for summary presentation
- 5-10 minutes presentation by each group
- Each group had a leader & Co-leader to felicitate discussion
- Nominate a person for Time keeper

Expectation:

- Identify projects, Objectives and Deliverables
- Identify company, institute/university for Collaboration
- Nominate a person to follow up (Public and Private sector)
- Basic/pre breeding research project (tilling)
Thanks