

3-i) Potential loss of unique genetic diversity in tomato landraces by genetic colonization of modern cultivars at a non-center of origin

San San Yi, S. A. Jatoi, T. Fujimura, S. Yamanaka, J. Watanabe
and K. N. Watanabe, 2008. Plant Breeding 127: 189-196.

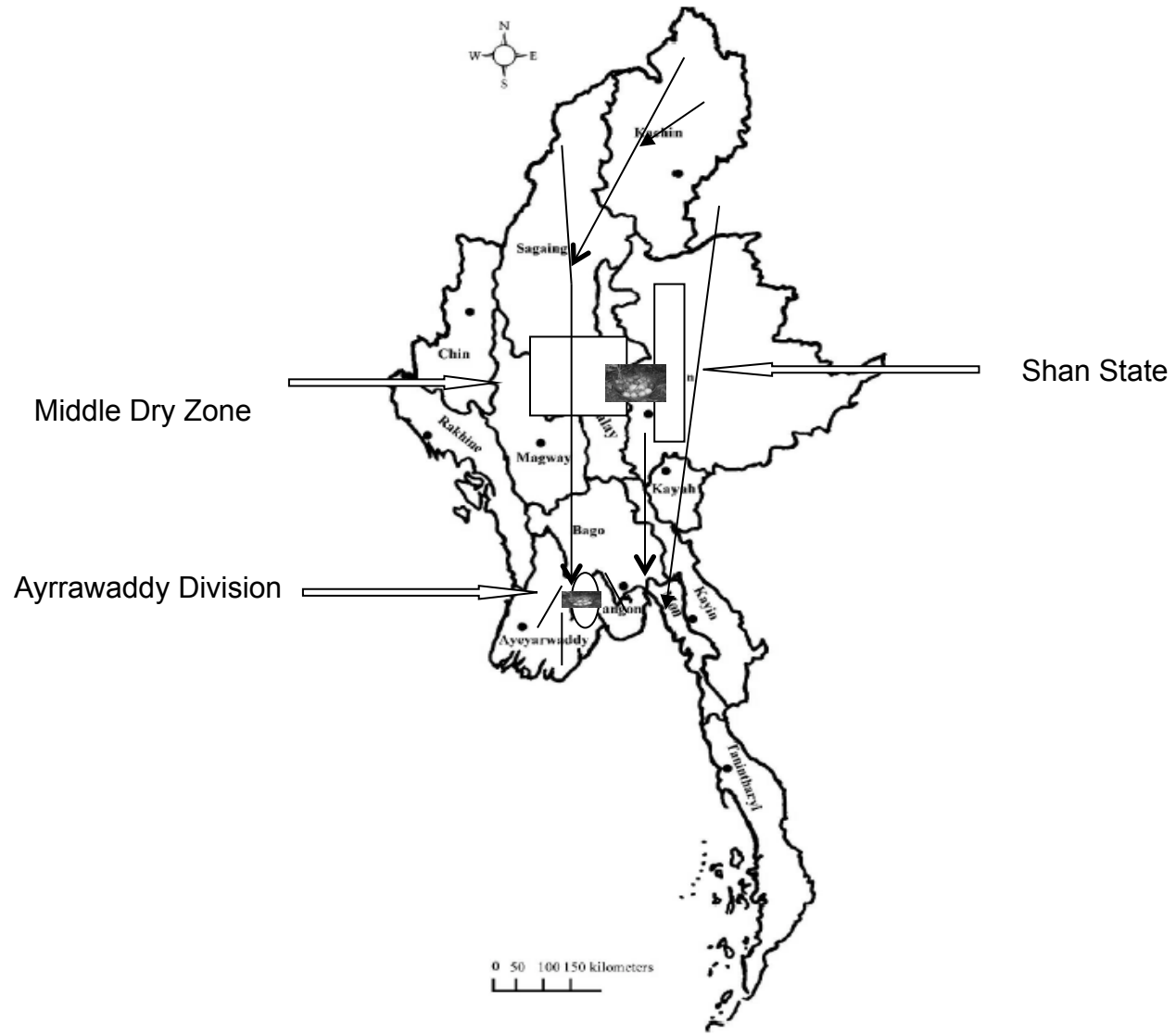
**Gene Research Center, Graduate School of Life and
Environmental Sciences, University of Tsukuba, Japan**

Tomato Origin and disperse to Myanmar

- The origin of tomato it is generally regarded the Vera Cruz and Puebla areas of Mexico as centers of domestication, whereas the tomato progenitor is thought to have originated in the tropical, coastal areas of Ecuador, Peru and some areas of northern Chile (Rubatzky and Yamaguchi 1996).
- The earliest document of the tomato in Myanmar is for herbal medicine written in 1758 by U Gyi Taw – *King Alongpaya* was powerful time-(reigned 1753-1782).
- Myanmar was part of overland trade route from China to India (Mg Mg Gyi, 1912). It was unclear when tomato imported to the country. Myanmar probably began to use tomato last 400 yrs ago .

IMPORTANCE OF TOMATO IN MYANMAR

- **Tomato is one of the most important vegetables in Myanmar**
- Total Vegetable Grown Area: 1.8 million acres (MAS, 2005)
- Tomato Grown Area 0.3 millions acres (22 %)
- Tomato constitutes in daily diets as it contains in every curries and used as salad, jams, juices and some used as medicines.
- Production of tomato is increasing steadily from year to year.
- Three main regions of Tomato
 - Inlay Lake, Shan State floating island like hydro phonic
 - Central dry zone
 - Delta region



Myanmar Map for Tomato Area





Objectives

- ❖ To examine the genetic structure of Myanmar tomato accessions**
- ❖ To compare the diversity pattern of Myanmar tomato with world (CORE) collections**

Materials & Methods

Plant Materials

Tomato Accessions used in this study

Original	Strains
Myanmar	40
Australia	1
Bangladesh	1
Canada	1
China	4
France	1
Germany	1
India	1
Italy	2
Japan	5
Mexico	1
Netherland	1
Russia	2
South Africa	1
Spain	1
USA	13
Unknown	<u>2</u>
Total	87

Myanmar Local

-32-from VFRDC

-8- introduce from AVRDC

-47 Varieties- supported by GeneBank-NIVT- J

-47 are collected from various countries around the world.

Plants were sown in GR-GRC.

Microsatellite markers, sequence information, repeat motifs, and allele size used for the genetic diversity analysis in tomato.

Locus	Orig. Acc.	Size	Motif	Primer pairs
TSR1	AF220603	306	TA26	F ¹ ATCGTGGCGATAATTTG R TCCTTGATTTCTTTTCATC
TSR 2	AQ367308	229	AT15	F TCAAGTGAGTTTATCTGCCAC R GCTCATCCTACACATTCATGCTC
TSR 5	AQ367719	180	AG11	F CTTGACGGGGTTAGAGTTTTTC R GGACAGGTGAATGGGTCAAAGAC
TSR 6	AQ367720	314	ATT18	F ACGACCCACTATTAGTTTC R TTGGACACAGAGAAAAAAC
TSR 10	BH014932	197	TA8 CA13	F GGTTGTCGGTTAGATAATCTCCCAC R TTTTGGCTCTGCTAACAAAGC
TSR 14	BH015910	241	GTA23	F CTCTGATGGAAGAAAAAATAGGTCGG R AGGAGGGGAGTTAGAGTTTGATG
TSR 15	BH016043	212	ATT(ATG)7	F GCACTAAGCATCTCTCTTCTAAC R ACTTCGCATTTGTGCTCATC
TSR 18	LEU63117	246	TA15	F TGCATGGACAAATCTTGAGG R CGGCACATCAAATTATTATATCTCG
TSR 20	LSTPRPF1	158	CCA7	F TAATACCACCACCCTACGTGCC R CACCTAGCTTGAGAGCATCAATGG
TSR 23	AQ367511	222	AT30	F TGGCTCTCGCTAACTCAAGAACTAC R GGTTTTCGGTTAGAGAATCTCCCAC

Initially, 27 SSR markers were constructed based on tomato sequence information from GeneBank (National Center for Biotechnology Information, USA).

Ten microsatellite markers were selected based on amplification and reproducibility in all accessions.