

Table 4: Analysis of molecular variance and pair wise population Nei's genetic distance estimates within and among populations.

ANALYSIS OF MOLECULAR VARIANCE						NEI GENETIC DISTANCE		
source	df	SS	MS	Estimate variance	Percent variance	Pop 1	Pop 2	Genetic distance
Among Pops	2	12.087	6.044	0.221	5%	Mandalay(17)	Shan(10)	0.496
Within Pops	29	114.194	3.938	3.938	95%	Mandalay(17)	Others(5)	0.429
Total	31	126.281	9.981	4.159		Shan(10)	Others(5)	0.387

Higher molecular variance (95%) was observed among landraces within groups than among groups.

The pairwise Nei genetic distance observed between tomato landraces from Mandalay & Shan was 0.496, followed by Mandalay & other states/divisions (0.429), and Shan & other states/divisions (0.387).

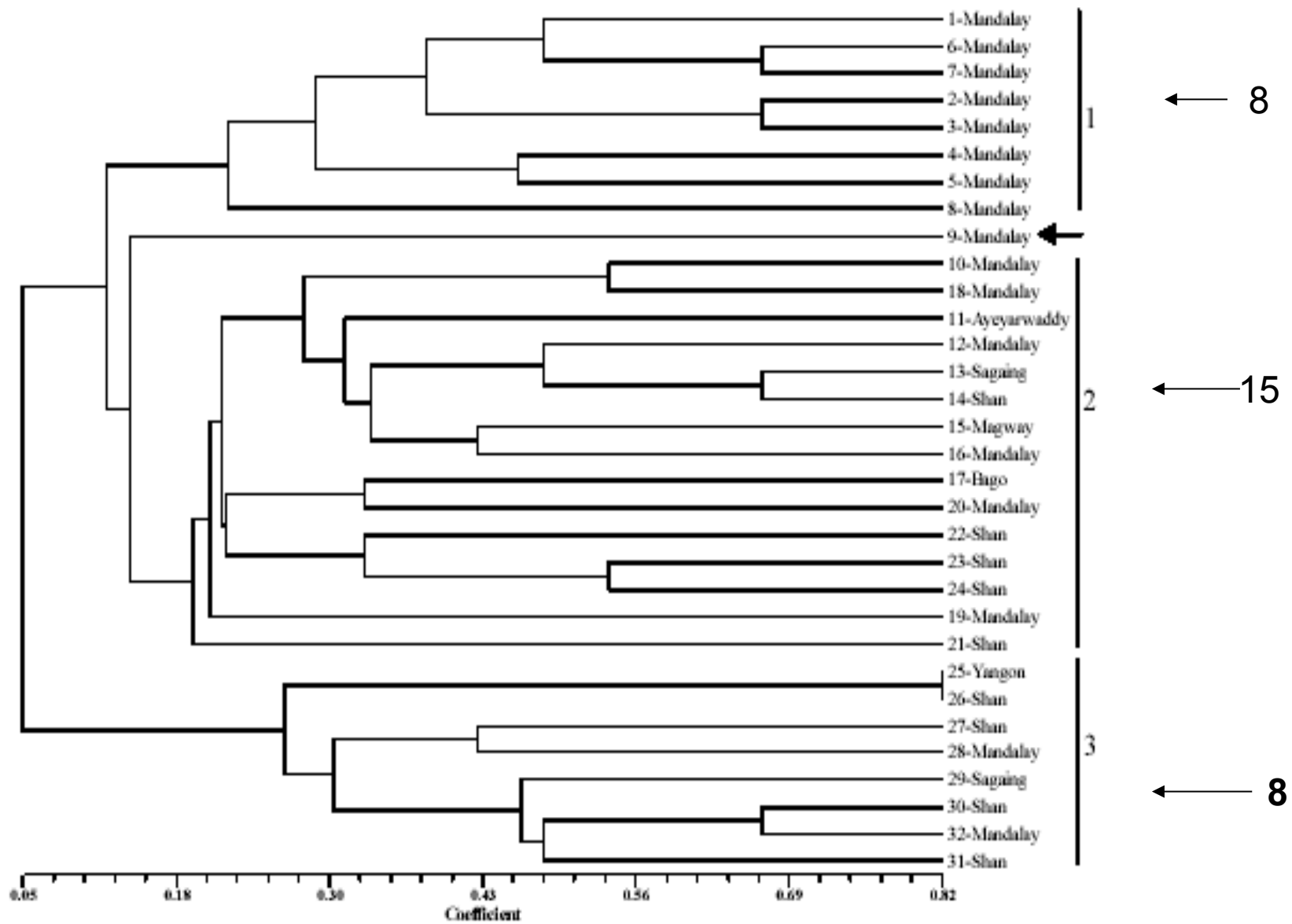


Fig. 5: Dendrogram showing the association and clustering pattern of different 32 tomato landraces from Myanmar

- **The accessions in each group were relatively close; however, they were genetically distant from members of other groups.**
- **The relative closeness of accessions from different areas within a group can be explained that there is no cross-boundary check among different divisions or states in country and that seed exchanges between growers and then broadcasted from one region to another.**

Conclusion

- **The different statistical approaches showed the genetic structure of Myanmar landraces highlighted the considerable variability and diverse background of the germplasm investigated.**
- **The long history of tomato cultivation with different production systems by numerous ethnic groups in Myanmar may have resulted in the genetic divergence among landraces.**
- **The tomato landraces from Myanmar are thought to be the results of natural selection and of artificial selection after domestication.**
- **Consequently, a large number of desirable genes and a unique combination of useful genes have accumulated in these landraces due to long term cultivation.**

- **Our study demonstrates the usefulness of SSR markers, which enabled us to show genetic variability at different levels.**
- **The high allelic and gene diversity provide also show the diverse genetic structure of the germplasm studied.**

- **The tomato landraces from Myanmar appear divergent, showing more variability within than among states/divisions.**
- **Germplasm collections are an important of crop improvement programs because they provide breeders with sources of useful traits (Cordeiro et al. 2003).**

- **The growing trend of local farmers, driven by market demands, to grow improved and hybrids cultivars is a serious problem, as it will likely result in the gradual loss of local landraces.**
- **So Myanma Agriculture Service is emphasizing in evaluation, utilization, and conservation of these landraces for tomato improvement by doing short and long term plans in a MAS project.**

- **Thank you!**

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