

**Variation in Fruit and Seed Traits Among Different Accessions of *Sterculia urens*****D.C. Bhuva,\* R.P. Gunaga, N.S. Thakur, M.J. Dobriyal, D. Nayak and H.T. Hegde***College of Forestry, Navsari Agricultural University, Navsari- 396 450, Gujarat, India*\*Email: [bhuva.dc1992@gmail.com](mailto:bhuva.dc1992@gmail.com)**Keywords:** *Sterculia urens*, fruit traits, seed traits**1. Introduction**

Gum Karaya (*Sterculia urens* Roxb.) is one of the commercial important NTFP tree species distributed in tropical deciduous forests of dry rocky hill lands. Tree exudates gum called Karaya gum or Indian-tragacanth. Purified gum is used in foodstuffs as emulsifiers/stabilizers, as thickeners in cosmetics and medications, and as an adhesive for dentures. Therefore, collection of gum karaya is providing income to the tribal community. Understanding variability for fruit/seed attributes and other economic traits is most important for under-domesticated tree species. Hence, a study was proposed to record variability in fruit, seed and germination of *S. urens*.

**2. Material and methods**

In the present study, total 14 trees (Accessions) distributed in the Vandsa forest, Gujarat, India, were selected and matured fruits were collected from marked trees during April to May. Various fruit and seed traits were measured in the laboratory of College of Forestry, Navsari Agricultural University, Navsari. Further, germination trial was undertaken using 14 accessions and daily germination count was recorded. Genetic parameters were worked-out for seed traits and germination (Bhuva 2016; Bhuva et al 2019).

**3. Results and discussion**

Intra-population variation for fruit/seed traits was recorded in *S. urens*. Number of fruits per inflorescence varied from 3.22 to 5.56. Significant variation ( $P < 0.05$ ) among different accessions for

**Table 1.** Intra population variation for fruit and seed traits of *Sterculia urens* in Vandsa forest of south Gujarat

Tree ID	Fruit length (mm)	Fruit thickness (mm)	Fruit weight (g)	Seed length (mm)	Seed thickness (mm)	Seed weight (g)
VNP-01	38.11	18.17	1.87	9.58	6.05	0.19
VNP-02	35.34	16.30	1.98	9.35	6.32	0.24
VNP-03	41.84	18.53	2.56	10.81	6.57	0.29
VNP-04	39.67	17.53	2.24	10.52	6.91	0.28
VNP-05	37.16	16.26	1.84	11.56	6.15	0.29
VNP-06	29.30	18.68	2.31	11.01	6.73	0.29
VNP-07	43.29	19.53	2.48	10.66	6.47	0.27
VNP-08	36.66	14.60	1.05	9.26	5.33	0.12
VNP-09	-	-	-	9.82	6.39	0.23
VNP-10	-	-	-	10.49	6.46	0.29
VNP-11	30.79	19.70	2.13	10.05	6.35	0.24
VNP-12	-	-	-	8.57	6.53	0.22
VNP-13	-	-	-	9.41	5.81	0.18
VNP-14	-	-	-	9.70	5.98	0.21
Mean	36.91	17.70	2.05	10.06	6.29	0.24
SEm (±)	2.6	0.77	0.18	0.13	0.08	0.01
CD <sub>0.05 P</sub>	7.71	2.29	0.53	0.37	0.23	0.03
CV (%)	11.78	7.56	15.25	3.25	3.29	9.78

Note: Data is not given in five trees due to insufficient collection

fruit length (29.30-43.29 mm), fruit thickness (14.60-19.70 mm) and fruit weight (1.05-2.56 g) was recorded (Table 1). The number of seeds per fruit ranged between 3.40 and 4.77. Seed traits *viz.*, length (8.57-11.56 mm), thickness (5.33-6.91 mm) and single seed weight (0.12-0.29 g), as well as seed germination (53.33 to 100%) varied significantly among accessions ( $P < 0.05$ ). Six of fourteen accessions resulted in  $> 90\%$  germination. Seed length (86%) and seed weight (81%) recorded maximum heritability values; however, seed weight (38.50%) and germination (30.86%) recorded with maximum genetic gain. Study revealed that seedlots collected from different accessions exhibited great variation in fruit & seed attributes as well as germination (%); therefore, there is a scope for further selection and improvement of this species from Vansda forest area.

### **Reference**

- Bhuva DC 2016. Stand structure and intra-population variation for seed and seedling characteristics in *Sterculia urens* Roxb. M.Sc. Thesis submitted to Navsari Agricultural University, Navsari, Gujarat.
- Bhuva D C, Gunaga R P, Thakur N S and Bhusara J B. 2019. Seed and germination attributes in *Sterculia urens* Roxb. populations in south Gujarat. *Journal of Tree Sciences*, 38(1): 23-27.