**Table No. S1 Methods used for analysis of Biochemical parametersof fruits of *Phoebe cooperiana* collected from 14 sites in Arunachal Pradesh, India**

|  |  |  |
| --- | --- | --- |
| **Sl No.**  | **Biochemical Parameter** | **Method used** |
| 1 | Total Carbohydrate (g/100 g) | Hedge and Hofreiter (1962a) [15] |
| 2 | Starch (mg/100 g) | Hedge and Hofreiter (1962b) [16] |
| 3 | Cellulose (mg/100 g) | Updegroff (1969) [17] |
| 4 | Pectic Substance (%) | Rangana (1979) [18] |
| 5 | Crude Protein estimation (%) | Lowryet al. ( 1951) [19] |
| 6 | Vitamin C (mg/100g) | Jagota and Dani (1982) [20] |
| 7 | Vitamin E (mg/100g) | Rosenberg (1992) [21] |
| 8 | Vitamin A (mg/100g) | Bayfield and Cole (1980) [22] |
| 9 | Cyanogen (mg/100 g) | Hogg and Ahlgren (1942) [23] |
| 10 | Phytic Acid (mg/100 g) | Wheeler and Ferrel (1971) [24] |
| 11 | Phenols (mg/100 g) | Malick and Singh (1980) [25] |
| 12 | DPPH Free Radical Scavenging Activity (%): | Aoshima et al(2014) [26] |

**Table S2: Pearson simple correlation coefficient (r) among morphological and biochemical traits and location across 14 populations of *Phoebe cooperiana* in Arunachal Pradesh**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Characters** | **FL** | **FD** | **SW** | **SL** | **SD** | **PW** | **PT** | **PFR** | **CHO** | **ST** | **CEL** | **PE** | **CP** | **VC** | **VE** | **VA** | **CY** | **PA** | **Ph** | **DPPH** | **Lat** | **Lon** | **EL** |
| Fruit Weight | 0.93# | 0.94# | 0.80# | 0.80# | 0.63\* | 0.78# | 0.66# | 0.31 | -0.13 | 0.54\* | -0.26 | -0.18 | -0.26 | -0.02 | -0.26 | -0.17 | -0.25 | -0.00 | -0.20 | 0.23 | -0.01 | -0.15 | 0.34 |
| Fruit Length | 1 | 0.95# | 0.81# | 0.84# | 0.72# | 0.73# | 0.60\* | -0.34 | 0.04 | 0.28 | -0.16 | -0.20 | -0.21 | -0.13 | -0.41 | -0.32 | -0.26 | 0.08 | -0.25 | 0.15 | -0.01 | -0.07 | 0.22 |
| Fruit Diameter |  | 1 | 0.76# | 0.79# | 0.67# | 0.79# | 0.70# | 0.29 | 0.28 | 0.41 | 0.27 | 0.11 | 0.11 | -0.10 | -0.20 | -0.00 | -0.09 | 0.04 | 0.04 | -0.07 | -0.25 | -0.15 | 0.02 |
| Seed Weight |  |  | 1 | 0.96# | 0.91# | 0.33 | 0.15 | -0.75# | -0.02 | 0.60\* | -0.36 | 0.03 | -0.14 | 0.23 | -0.16 | -0.25 | -0.06 | -0.15 | -0.04 | 0.08 | -0.08 | -0.58\* | 0.61# |
| Seed Length  |  |  |  | 1 | 0.91# | 0.36 | 0.20 | -0.71# | -0.02 | -0.16 | -0.10 | -0.07 | -0.05 | -0.03 | -0.01 | -0.25 | -0.11 | 0.36 | -0.06 | 0.08 | 0.29 | 0.07 | 0.61\* |
| Seed Diameter |  |  |  |  | 1 | 0.16 | -0.04 | -0.76# | 0.46\* | 0.04 | 0.38 | 0.42 | 0.27 | -0.09 | 0.20 | -0.26 | -0.09 | -0.02 | 0.35 | -0.29 | -0.36 | -0.65 | 0.71# |
| Pulp Weight |  |  |  |  |  | 1 | 0.91# | 0.25 | -0.07 | 0.41 | -0.04 | -0.33 | -0.18 | -0.19 | -0.43 | -0.13 | -0.25 | 0.09 | -0.28 | 0.13 | 0.04 | -0.02 | -0.00 |
| Pulp Thickness  |  |  |  |  |  |  | 1 | 0.33 | -0.04 | 0.26 | -0.13 | -0.28 | -0.18 | -0.02 | -0.46\* | 0.05 | -0.17 | 0.01 | -0.37 | 0.32 | 0.09 | 0.03 | 0.02 |
| Pulp/Frt Ratio |  |  |  |  |  |  |  | 1 | -0.10 | -0.22 | 0.35 | -0.14 | 0.02 | -0.28 | -0.06 | 0.28 | 0.07 | 0.31 | -0.17 | -0.04 | 0.25 | 0.07 | -0.61\* |
| Total CHO  |  |  |  |  |  |  |  |  | 1 | 0.11 | -0.07 | 0.27 | 0.60\* | 0.34 | 0.08 | -0.22 | 0.27 | 0.21 | 0.72# | -0.41 | -0.04 | 0.05 | -0.38 |
| Starch  |  |  |  |  |  |  |  |  |  | 1 | -0.10 | 0.01 | 0.17 | 0.18 | -0.21 | 0.24 | 0.22 | 0.07 | 0.19 | -0.30 | -0.16 | -0.25 | 0.12 |
| Cellulose  |  |  |  |  |  |  |  |  |  |  | 1 | 0.28 | -0.27 | -0.59\* | -0.03 | 0.23 | 0.01 | -0.26 | -0.10 | 0.14 | -0.36 | -0.09 | -0.17 |
| Pectin  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.28 | 0.34 | 0.47\* | 0.21 | 0.53\* | 0.08 | 0.24 | -0.24 | -0.28 | -0.13 | 0.17 |
| Crude Protein  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.46\* | 0.49\* | 0.00 | 0.44 | 0.61# | 0.70# | -0.76# | 0.03 | 0.00 | -0.32 |
| Ascorbic Acid  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.06 | 0.07 | 0.64# | 0.01 | 0.17 | -0.21 | 0.20 | 0.01 | 0.04 |
| Vitamin E |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.06 | 0.10 | 0.50\* | 0.44 | -0.31 | -0.12 | -0.01 | -0.12 |
| Vitamin A  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.33 | 0.04 | -0.09 | 0.09 | -0.11 | 0.01 | -0.28 |
| Cyanogen  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | -0.00 | 0.15 | -0.24 | 0.01 | 0.00 | -0.23 |
| Pytic acid  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.40 | -0.63# | 0.14 | 0.06 | -0.29 |
| Phenols  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.61\* | -0.02 | 0.02 | -0.32 |
| DPPH  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.03 | 0.08 | 0.03 |
| Latitude |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 0.09 | -0.15 |
| Longitude |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | -0.24 |
| Elevation  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |

**\*, # Significant at 5% and 1% respectively**

**FL: Fruit Length: FD: Fruit Diameter; SW: Seed Weight; SL: Seed Length; SD: Seed Diameter; PW: Pulp Weight; PT: Pulp Thickness; PFR: Pulp Fruit Ratio; CHO: Total Carbohydrates; ST: Starch; CEL: Cellulose; PE: Pectin; CP: Crude Protein; VC: Vitamin C; VE: Vitamin E; VA: Vitamin A; CY: Cyanogen; PA: Phytic Acid; Ph: Phenol; Lat: Latitude; Lon: Longitude; EL: Elevation**