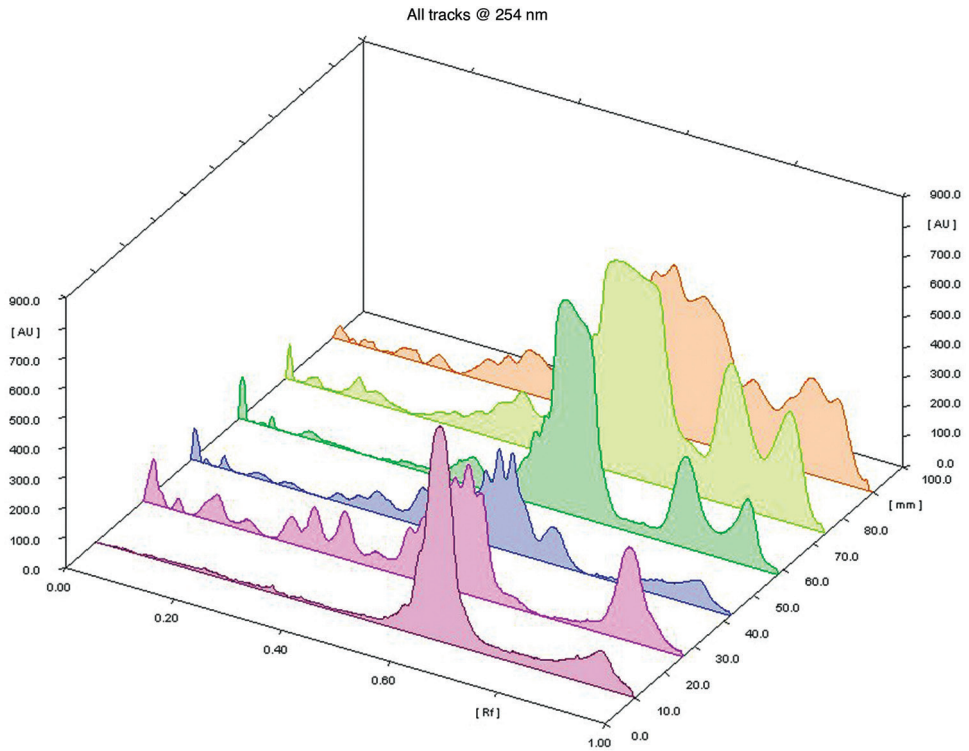
Supplementary Table 1 The impact of the plant growth regulator on pippali indirect shoot and root regeneration

Treatments MS + growth regulators (mg/l)	No of root response to shoot (%)		No of shoot initiation	No of roots regeneration after 21 days from shoot subculture	No. of root regeneration after 42 days from shoot subculture
T_1, MS + 1.0 BAP	43.34	(0.44)	2–3	3–4	7–8
T_2, MS + 2.0 BAP	46.67	(0.47)	8–9	3–4	9–10
T_3, MS + 0.5 IBA	33.33	(0.33)	1–2	1–2	4–5
T_4, MS + 1.0 BAP + 0.5 IBA	50.12	(0.52)	3–4	4–5	8–9
T_5, MS + 1.5 BAP + 0.5 IBA	54.67	(0.57)	2–3	5–6	10–12
T_6, MS + 2.0 BAP + 0.5 IBA	66.67	(0.72)	8–9	7–8	12–14
Mean	49.22	(0.51)			
CD (P=0.05)	0.07				

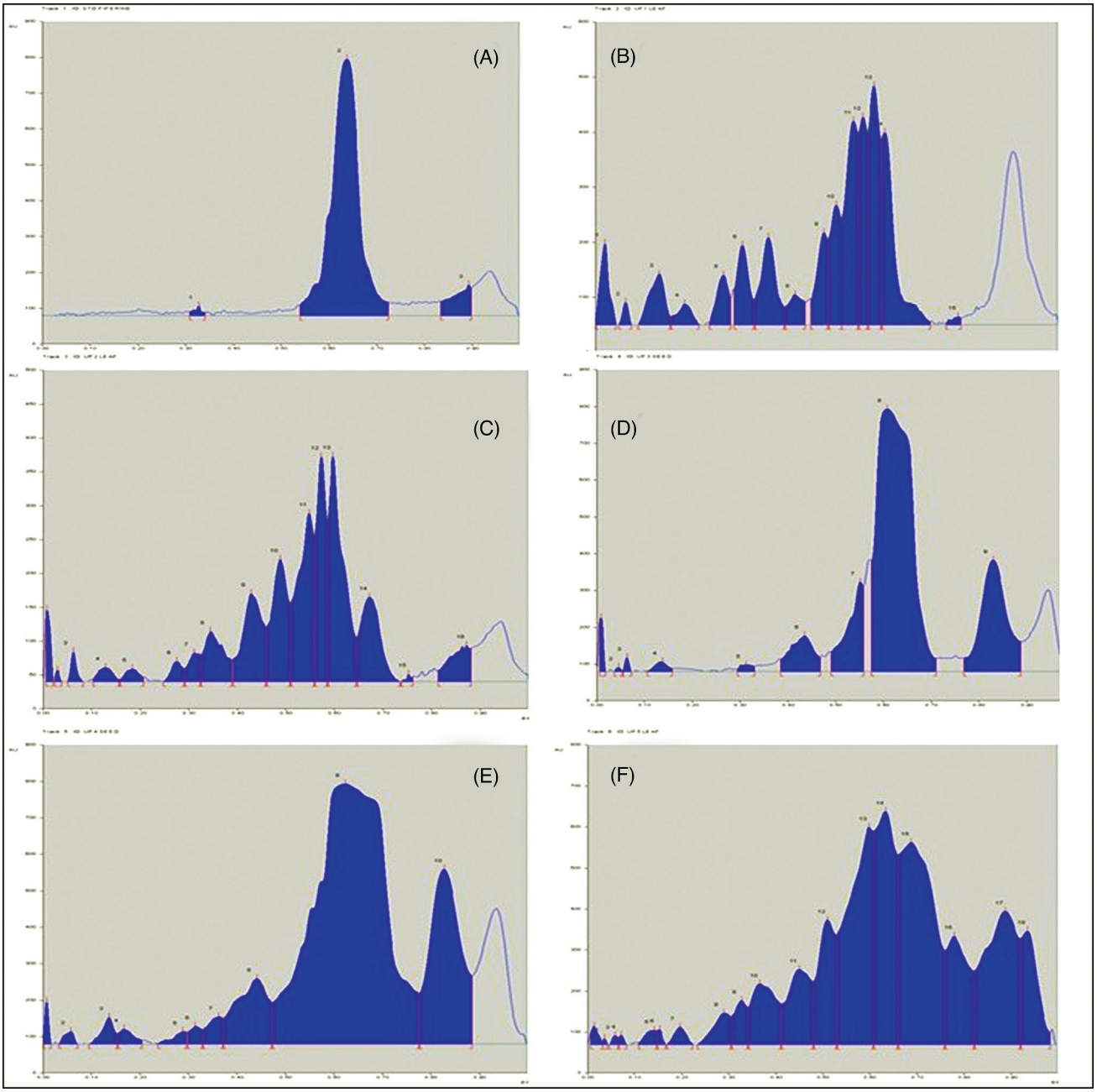
MS, Murashige and Skoog medium; BAP, 6-Benzylaminopurine; IBA, Indole butyric acid.

Supplementary Table 2 Morphological characteristics and biochemical analysis of pippali varieties

Variety	Plant height (cm)		No. of leaves		No. of fruits		Sample	Protein content (mg/100 mg)	Glycine content (mg/1000 mg)	Phenol content (mg/1000 mg)
	After 30 days	After 90 days	After 30 days	After 90 days	After 30 days	After 90 days				
Creeper (UP1)	37.5	58.7	12	47	2	9	Fruit	7.85	1.71	0.95
							Leaf	15.15	2.02	1.04
Climber (UP2)	24.3	67.2	9	51	0	14	Fruit	8.01	1.58	0.92
							Leaf	16.22	1.85	1.01



Supplementary Fig. 1 HTPLC fingerprints of plant extract of *Piper longum*.



Supplementary Fig. 2 Individual peak scanned for piperine detection at 254 nm. (A) Standard; (B) Climber variety in methanol; (C) Creeper variety in methanol; (D) Fruit of creeper variety in methanol; (E) Fruit of creeper variety in ethanol; (F) Climber variety in ethanol.