

Figure 4: Effect of different combination of hormones (NAA+ Kinetin) on callus induction of leaves and hypocotyls of *Jatropha curcas* in MS media

The texture of callus produced from leaves and hypocotyls was, friable, nodular and granule and light green in color. Fresh weight of callus was increased by the increasing of time till four weeks then decline, as shown in fig (5). These results agree with that obtained by Soomro and Memon, [17].

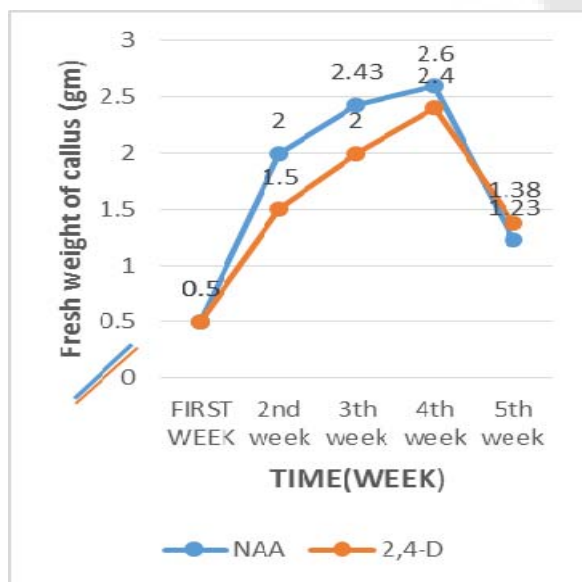


Figure 5: Fresh weight of callus of *Jatropha curcas* (hypocotyls explants) for five weeks Induced by 2, 4-D&NAA

The fresh weight of callus induced by NAA and 2, 4-D after four weeks were 2.6 and 2.4 gm respectively. Callus index produced from hypocotyls inducing by two auxins 2, 4-D (2,4and 6mg/l) and NAA (2,4and 6mg/l) Separately were increased by the increasing of time. The maximum value of callus index obtained were 3.0 and 4.0

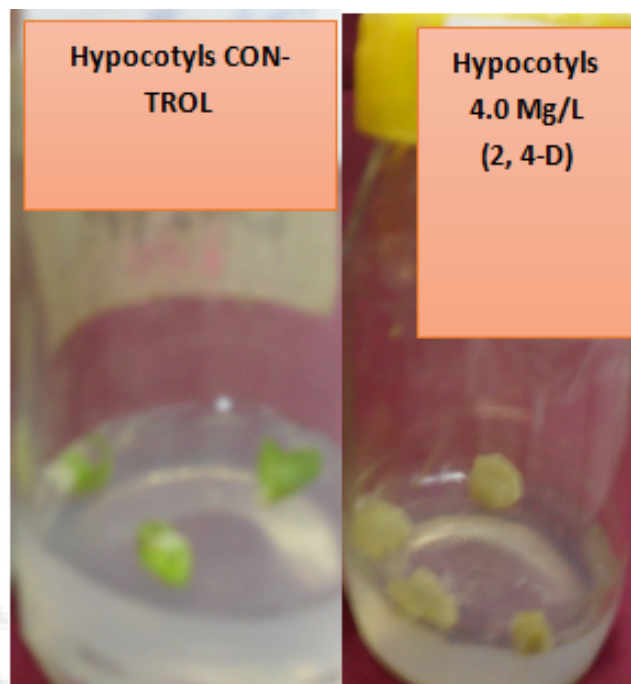
By the third week for the auxin 2, 4-D and NAA respectively as shown in (table 1& fig.6).

Table 1: Callus Index of leaves and hypocotyls of *Jatropha curcas* during three week

Explant part	hormones		Auxin concentration (µM)	Mean* ± SE	
	NAA	2,4-D			
leaves	-	-	2.0	2.5000ab ±3.00000	
	-	-	4.0	4.5000a±2.51661	
		2,4-D+kintin	4+0.05	5.0000a±.00000	
		2,4-D+kintin	4+0.5	5.0000a±.00000	
			6.0	4.0000ab±2.00000	
	NAA + kintin		6+0.05	3.0000ab±2.82843	
	NAA + kintin		6+0.5	3.0000ab±2.82843	
	hypocotyls	-	-	2.0	1.5000ab±.57735
		-	-	4.0	3.0000a±00000
			2,4-D+kintin	4+0.05	1.5000 a±.57735
		2,4-D+kintin	4+0.5	1.5000ab±.57735	

			6.0	
	NAA + kine- tin		6.0+ 0.05	4.0000ab±00000
	NAA + kine- tin		6+0.5	4.0000ab ±00000
Mean* ± SD			2.7273±1.1037 1	6.5723ab±3.294 6

*Means with different letters are significantly different at p = 0.05.



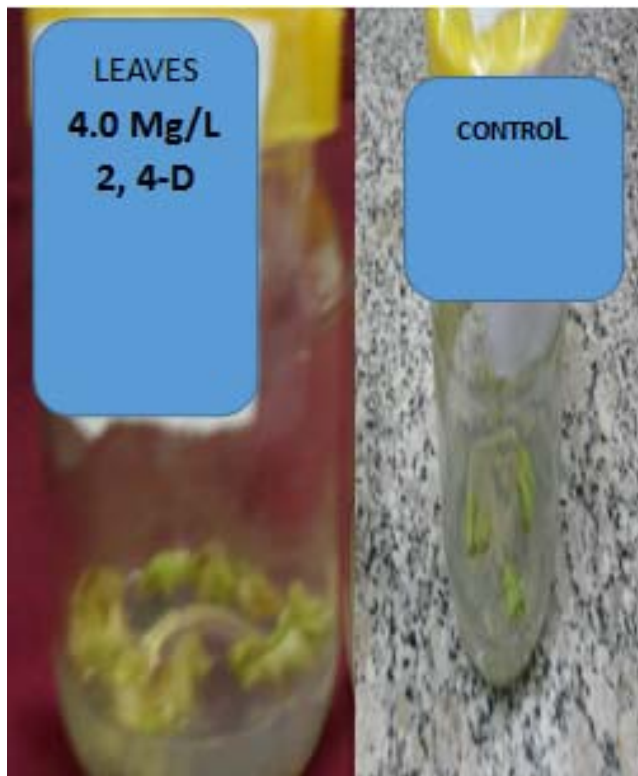
B-Callus induction from hypocotyls segments by 2,4-D concentration 4.0 mg/l + control in MS media



A - Callus induction from hypocotyls segments by NAA -concentration 2.0mg/l +-control) in MS media



C-Callus induction from leaves segments in by NAA concentration 2.0mg/l +-control in MS media



D-callus induction from leaves segments by 2, 4-D (concentration 4.0 mg/l+ control)

Figure (6): Callus Induction from Hypocotyls Segments by 2mg/l of Hormones NAA & 4mg/l 2,4D + control (A&B) and Leaves Segments by 2.0mg/l of NAA & 4mg/l 2, 4-D (C&D) in MS Media

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