**Table1: Hormones used with Full Ms for Callus initiation**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Medium strength** | Auxins | | | | Cytokinins | | Gibberrellin | Additive |
| Full MS | 0.25 |  | 0.05 |  |  |  |  |  |
| 0.10 |  |  |  |  |  |  |  |
| 0.05 |  | 2.50 |  |  |  |  |  |
|  |  | 2.50 | 0.05 | 0.10 |  |  |  |
|  |  | 0.50 | 2.50 |  |  |  |  |
|  |  | 0.05 | 0.05 |  |  |  |  |
|  | 0.10 |  | 0.10 |  |  |  |  |
|  |  |  |  | 0.10 | 0.05 | 1.00 |  |
|  |  |  |  | 0.10 |  | 0.10 |  |
|  |  | 0.05 |  |  | 0.05 |  |  |
|  |  |  |  |  | 0.05 | 0.05 |  |
|  |  |  |  |  | 0.10 | 0.10 | 2.00 |

**TABLE 2: Effect of various hormones on callus proliferation and relative growth**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Medium Strength**  Full MS  Explant Leaf | 2,4 D | BA | KINETIN | NAA | PEG mg/l | RGR at 30days | RGR at70 days |
| 0.5 |  | 0.5 |  | 2 | 0.00375 | 0.00285 |
| 0.5 |  |  |  |  | 0.00342 | 0.00235 |
| 0.5 | 0.5 | 0.1 |  |  | 0.0499 | 0.03970 |
| 0.5 |  | 1 |  |  | 0.00315 | 0.00305 |
|  | 0.5 | 1 | 3 |  | 0.00491 | 0.00252 |

**Table3: Effect of γ-irradiatio on andrographolide production**

|  |  |
| --- | --- |
| Dose of γ - irradiation | Andrographolide %w/w |
| Control C  Control H  Control PA | 0.0029  0  0 |
| 0.5kR C  0.5kR H  0.5kR PA | 0.0034  0.0034  0.0049 |
| 1kR C  1kR H  1kR PA | 0.001  0.005  0.0039 |
| 1.5kR C  1.5 kR H  1.5kR PA | 0.0004  0.0028  0.0042 |
| 2kR C  2kR H  2kR PA | 0  0.0027  0.0072 |

|  |  |  |
| --- | --- | --- |
| MEDIUM C | MEDIUM H | MEDIUM PA |
| 0.5mg/l 2, 4 D | 0.5mg/l2, 4 D | 50mg/l Phenyl alanine |
| 0.5mg/l BA | 1mg/l Kinetin | 1mg/l Kinetin |
| 0.1mg/l Kinetin | 20%PEG 6000 | 2mg/l NAA |

**Table4: Data of fresh weight and dry weight of calli established from leaf explants in MS medium under different hormonal regimes**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0.5kR | | 1 kR | | 1.5 kR | | 2 kR | |
|  | Fresh  Weight  (mg) | Dry  Weight | Fresh  Weight | Dry weight | Fresh  Weight  (mg) | Dry weight | Fresh  Weight  (mg) | Dry  Weight |
| C | 8535 | 589 | 8176 | 511 | 8221 | 512 | 8128 | 506 |
| H | 10878 | 777 | 8561 | 611 | 11040 | 73693 | 48 | 734 |
| PA | 10930 | 767 | 9733 | 642 | 17343 | 1012 | 19242 | 932 |

### Table5: Relationship between Biomass, Andrographolide and RGR at 70 day

|  |  |  |  |
| --- | --- | --- | --- |
| Dose of gamma irradiation | Biomass | % of Andrographolide (w/w) | RGR at 70 day |
| 0.5kR C  0.5kR H  0.5kR PA | 0.812  0.806  0.843 | 0.0034  0.0034  0.0049 | 0.14925  0.15867  0.15693 |
| 1kR C  1kR H  1kR PA | 0.735  0.806  0.792 | .001  0.005  0.0039 | 0.13632  0.13653  0.15789 |
| 1.5kR C  1.5 kR H  1.5kR PA | 0.733  0.752  0.700 | 0.0004  0.0028  0.0042 | 0.12460  0.1605  0.30732 |
| 2kR C  2kR H  2kR PA | 0.732  0.887  0.945 | 0.0027  0.0072 | 0.11835  0.14271  0.26392 |