**Table (3):** Effect of spraying Royal Jelly at different concentrations and frequencies on some vegetative growth characteristics of Zebda mango trees during 2015 and 2016 seasons.

| Royal jelly treatments | Shoot length (cm.) | | No. of leaves / shoot | | Leaf length (cm.) | | Leaf width (cm.) | | Leaf area $(cm)^2$ | | Shoot thickness (cm.) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 1- Control ( untreated trees) | 22.0 | 21.7 | 13.0 | 12.0 | 24.0 | 23.9 | 4.9 | 4.6 | 81.3 | 75.9 | 0.59 | 0.60 |
| 2- Royal Jelly once at 0.0125% | 23.1 | 23.0 | 14.0 | 13.1 | 24.6 | 24.7 | 5.2 | 5.1 | 88.5 | 87.1 | 0.73 | 0.74 |
| 3- Royal Jelly twice at 0.0125% | 24.0 | 23.9 | 15.0 | 14.5 | 25.3 | 25.4 | 5.5 | 5.6 | 96.3 | 98.5 | 0.77 | 0.78 |
| 4- Royal Jelly thrice at 0.0125% | 24.3 | 24.0 | 15.3 | 14.7 | 25.4 | 25.5 | 5.6 | 5.7 | 98.5 | 100.7 | 0.78 | 0.79 |
| 5- Royal Jelly once at 0.025% | 25.2 | 24.9 | 16.4 | 15.8 | 26.6 | 26.6 | 5.8 | 5.9 | 106.9 | 108.8 | 0.82 | 0.83 |
| 6- Royal Jelly twice at 0.025% | 26.3 | 26.0 | 17.5 | 17.1 | 27.7 | 27.8 | 6.1 | 6.3 | 117.2 | 121.5 | 0.86 | 0.88 |
| 7- Royal Jelly thrice at 0.025% | 26.7 | 26.1 | 17.6 | 17.3 | 28.0 | 27.9 | 6.2 | 6.4 | 120.5 | 123.0 | 0.87 | 0.89 |
| 8- Royal Jelly once at 0.05 % | 23.3 | 25.0 | 16.5 | 16.0 | 26.7 | 26.7 | 5.9 | 6.0 | 109.2 | 111.1 | 0.83 | 0.84 |
| 9- Royal Jelly twice at 0.05 % | 26.4 | 26.1 | 17.6 | 17.2 | 27.8 | 27.9 | 6.2 | 6.3 | 119.6 | 122.0 | 0.87 | 0.89 |
| 10- Royal Jelly thrice at 0.05 % | 27.8 | 26.2 | 17.7 | 17.4 | 28.1 | 28.0 | 6.3 | 6.4 | 122.9 | 124.4 | 0.89 | 0.90 |
| New L.S.D. at 5 % | 0.9 | 0.8 | 1.0 | 1.0 | 0.6 | 0.5 | 0.2 | 0.3 | 3.1 | 3.3 | 0.03 | 0.03 |

**Table (4):** Effect of spraying Royal Jelly at different concentrations and frequencies on the leaf pigments (mg/100gF.w) and percentages of N and P in the leaves of Zebda mango trees during 2015 and 2016 seasons.

| Royal jelly treatments | Chlorophyll a (mg/ 100 g F.W.) | | Chlorophyll b (mg/ 100 g F.W.) | | Total chlorophylls (mg/ 100 g F.W.) | | Total carotenoides (mg/ 100 g F.W.) | | Leaf N % | | Leaf P % | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 1- Control ( untreated trees) | 4.9 | 4.4 | 1.5 | 1.6 | 6.4 | 6.0 | 1.4 | 1.5 | 1.59 | 1.60 | 0.14 | 0.13 |
| 2- Royal Jelly once at 0.0125% | 5.5 | 5.7 | 1.8 | 2.0 | 7.3 | 7.7 | 1.7 | 1.8 | 1.66 | 1.68 | 0.16 | 0.16 |
| 3- Royal Jelly twice at 0.0125% | 6.0 | 6.3 | 2.1 | 2.3 | 8.1 | 8.6 | 1.9 | 2.1 | 1.73 | 1.76 | 0.18 | 0.19 |
| 4- Royal Jelly thrice at 0.0125% | 6.1 | 6.4 | 2.2 | 2.4 | 8.3 | 8.8 | 2.0 | 2.2 | 1.74 | 1.77 | 0.19 | 0.20 |
| 5- Royal Jelly once at 0.025% | 6.6 | 6.9 | 2.6 | 2.8 | 9.2 | 9.7 | 2.3 | 2.4 | 1.82 | 1.85 | 0.21 | 0.22 |
| 6- Royal Jelly twice at 0.025% | 7.0 | 7.4 | 2.9 | 3.1 | 9.9 | 10.5 | 2.5 | 2.7 | 1.90 | 1.90 | 0.24 | 0.25 |
| 7- Royal Jelly thrice at 0.025% | 7.1 | 7.5 | 3.0 | 3.2 | 10.1 | 10.7 | 2.6 | 2.8 | 1.91 | 1.91 | 0.25 | 0.26 |
| 8- Royal Jelly once at 0.05 % | 6.7 | 7.0 | 2.7 | 2.9 | 9.4 | 9.9 | 2.4 | 2.5 | 1.83 | 1.86 | 0.22 | 0.23 |
| 9- Royal Jelly twice at 0.05 % | 7.1 | 7.5 | 3.0 | 3.2 | 10.1 | 10.7 | 2.6 | 2.8 | 1.91 | 1.91 | 0.25 | 0.26 |
| 10- Royal Jelly thrice at 0.05 % | 7.2 | 7.6 | 3.1 | 3.4 | 10.3 | 11.0 | 2.7 | 2.9 | 1.92 | 1.92 | 0.26 | 0.27 |
| New L.S.D. at 5 % | 0.3 | 0.3 | 0.2 | 0.3 | 0.4 | 0.4 | 0.2 | 0.2 | 0.05 | 0.04 | 0.02 | 0.02 |

**Table (5):** Effect of spraying Royal Jelly at different concentrations and frequencies on the leaf content of Ca, K, Mg, Mn, Fe and Zn (as ppm) of Zebda mango trees during 2015 and 2016 seasons.

| Royal jelly treatments | Leaf K % | | Leaf Ca % | | Leaf Mg % | | Leaf Mn (ppm) | | Leaf Fe (ppm) | | Leaf Zn (ppm) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 1- Control ( untreated trees) | 1.20 | 1.25 | 2.61 | 2.70 | 0.51 | 0.53 | 50.0 | 49.7 | 55.0 | 54.7 | 64.0 | 62.9 |
| 2- Royal Jelly once at 0.0125% | 1.25 | 1.29 | 2.71 | 2.80 | 0.55 | 0.57 | 52.0 | 52.5 | 57.0 | 57.0 | 65.7 | 64.0 |
| 3- Royal Jelly twice at 0.0125% | 1.28 | 1.33 | 2.82 | 2.91 | 0.59 | 0.61 | 53.4 | 53.9 | 59.0 | 58.0 | 67.0 | 65.5 |
| 4- Royal Jelly thrice at 0.0125% | 1.29 | 1.34 | 2.83 | 2.92 | 0.60 | 0.62 | 53.5 | 54.0 | 59.3 | 58.3 | 67.3 | 65.7 |
| 5- Royal Jelly once at 0.025% | 1.34 | 1.37 | 3.00 | 3.04 | 0.66 | 0.67 | 55.0 | 56.0 | 61.1 | 59.9 | 69.0 | 67.3 |
| 6- Royal Jelly twice at 0.025% | 1.37 | 1.41 | 3.11 | 3.14 | 0.71 | 0.71 | 56.7 | 58.7 | 63.3 | 62.0 | 71.2 | 69.1 |
| 7- Royal Jelly thrice at 0.025% | 1.38 | 1.42 | 3.12 | 3.15 | 0.72 | 0.72 | 57.0 | 59.0 | 63.7 | 62.2 | 71.3 | 69.3 |
| 8- Royal Jelly once at 0.05 % | 1.35 | 1.38 | 3.01 | 3.05 | 0.67 | 0.68 | 55.2 | 56.2 | 61.2 | 60.0 | 69.3 | 67.4 |
| 9- Royal Jelly twice at 0.05 % | 1.38 | 1.42 | 3.12 | 3.15 | 0.72 | 0.72 | 57.0 | 58.3 | 63.4 | 62.3 | 71.3 | 69.2 |
| 10- Royal Jelly thrice at 0.05 % | 1.39 | 1.43 | 3.13 | 3.16 | 0.73 | 0.73 | 57.2 | 59.3 | 63.8 | 62.5 | 71.5 | 69.5 |
| New L.S.D. at 5 % | 0.04 | 0.03 | 0.8 | 0.07 | 0.03 | 0.03 | 1.1 | 1.0 | 0.9 | 1.1 | 1.0 | 1.1 |

Table (6): Effect of spraying Royal Jelly at different concentrations and frequencies on some flowering aspects of Zebda mango trees during 2015 and 2016 seasons.

| Royal jelly treatments | Panicle length (cm.) | | No. of panicles / tree | | Male flowers % | | Perfect flowers % | | No. of flowers / panicle | | No. of retained fruits / panicle | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 1- Control ( untreated trees) | 17.7 | 18.0 | 141.0 | 139.0 | 83.9 | 83.4 | 16.1 | 16.6 | 22.2 | 23.0 | 2.0 | 2.0 |
| 2- Royal Jelly once at 0.0125% | 18.2 | 18.5 | 145.0 | 146.0 | 83.5 | 82.9 | 16.5 | 17.1 | 24.0 | 25.5 | 2.0 | 2.0 |
| 3- Royal Jelly twice at 0.0125% | 19.0 | 18.9 | 150.0 | 152.0 | 83.1 | 82.4 | 16.9 | 17.6 | 26.0 | 27.0 | 2.0 | 2.0 |
| 4- Royal Jelly thrice at 0.0125% | 19.1 | 19.0 | 151.0 | 153.0 | 83.0 | 82.3 | 17.0 | 17.7 | 26.5 | 27.5 | 2.0 | 2.0 |
| 5- Royal Jelly once at 0.025% | 19.7 | 19.4 | 156.0 | 158.0 | 82.5 | 81.9 | 17.5 | 18.1 | 29.0 | 31.0 | 2.0 | 2.0 |
| 6- Royal Jelly twice at 0.025% | 20.5 | 19.9 | 161.0 | 163.0 | 82.0 | 81.1 | 18.0 | 18.9 | 31.0 | 32.9 | 2.0 | 2.0 |
| 7- Royal Jelly thrice at 0.025% | 20.6 | 20.0 | 162.0 | 164.0 | 81.9 | 81.0 | 18.1 | 19.0 | 31.3 | 33.0 | 2.0 | 2.0 |
| 8- Royal Jelly once at 0.05 % | 19.8 | 19.5 | 157.0 | 159.0 | 82.3 | 81.8 | 17.7 | 18.2 | 29.0 | 31.3 | 2.0 | 2.0 |
| 9- Royal Jelly twice at 0.05 % | 20.6 | 20.0 | 162.0 | 164.0 | 81.9 | 81.0 | 18.1 | 19.0 | 31.3 | 33.0 | 2.0 | 2.0 |
| 10- Royal Jelly thrice at 0.05 % | 20.7 | 20.1 | 163.0 | 165.0 | 81.8 | 80.9 | 18.2 | 19.1 | 31.7 | 33.3 | 2.0 | 2.0 |
| New L.S.D. at 5 % | 0.4 | 0.4 | 3.0 | 2.9 | 0.3 | 0.2 | 0.3 | 0.3 | 2.1 | 2.3 | NS | NS |

**Table (7):** Effect of spraying Royal Jelly at different concentrations and frequencies on the percentage of fruit retention, yield/tree and per fed (ton)(160 trees/fed) of Zebda mango trees during 2015 and 2016 seasons.

| Royal jelly treatments | Initial fruit setting % | | No. of fruit ./ tree | | Yield/ tree (kg.) | | Yield/ feddan (tons) | |
|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 1- Control ( untreated trees) | 39.9 | 41.1 | 282 | 278 | 91.7 | 92.1 | 14.7 | 14.7 |
| 2- Royal Jelly once at 0.0125% | 41.1 | 43.0 | 290 | 292 | 95.4 | 99.6 | 15.3 | 15.9 |
| 3- Royal Jelly twice at 0.0125% | 42.9 | 45.0 | 300.0 | 304 | 100.5 | 103.7 | 16.1 | 16.5 |
| 4- Royal Jelly thrice at 0.0125% | 43.0 | 45.6 | 302 | 306 | 101.5 | 104.5 | 16.2 | 16.7 |
| 5- Royal Jelly once at 0.025% | 46.0 | 47.9 | 312 | 316 | 106.5 | 109.3 | 17.0 | 17.5 |
| 6- Royal Jelly twice at 0.025% | 48.0 | 50.0 | 322 | 326 | 111.4 | 114.4 | 17.8 | 18.3 |
| 7- Royal Jelly thrice at 0.025% | 48.4 | 50.3 | 326 | 328 | 113.1 | 115.2 | 18.1 | 18.4 |
| 8- Royal Jelly once at 0.05 % | 46.3 | 48.0 | 314 | 318 | 107.3 | 110.3 | 17.2 | 17.6 |
| 9- Royal Jelly twice at 0.05 % | 48.4 | 50.5 | 324 | 328 | 112.4 | 115.5 | 18.0 | 18.5 |
| 10- Royal Jelly thrice at 0.05 % | 48.7 | 50.9 | 326 | 330 | 113.4 | 116.5 | 18.1 | 18.6 |
| New L.S.D. at 5 % | 1.0 | 1.1 | 3.0 | 3.0 | 4.1 | 4.3 | 0.5 | 0.6 |

**Table (8):** Effect of spraying Royal Jelly at different concentrations and frequencies on some physical characteristics of the fruits of Zebda mango trees during 2015 and 2016 seasons.

| Royal jelly treatments | Fruit weight (g.) | | Fruit height (cm.) | | Fruit diameter (cm.) | | Fruit thickness (cm.) | | Flesh % | | Edible to non-edible portion | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 1- Control ( untreated trees) | 325.0 | 331.3 | 11.9 | 12.1 | 6.9 | 7.0 | 5.9 | 6.1 | 70.0 | 69.9 | 2.33 | 2.32 |
| 2- Royal Jelly once at 0.0125% | 329.0 | 336 | 12.5 | 12.7 | 7.1 | 7.3 | 6.2 | 6.3 | 70.5 | 70.6 | 2.38 | 2.40 |
| 3- Royal Jelly twice at 0.0125% | 335 | 341 | 13.1 | 13.3 | 7.3 | 7.6 | 6.5 | 6.6 | 71.1 | 71.3 | 2.46 | 2.48 |
| 4- Royal Jelly thrice at 0.0125% | 336 | 341.5 | 13.3 | 13.4 | 7.4 | 7.7 | 6.6 | 6.7 | 71.2 | 71.4 | 2.47 | 2.50 |
| 5- Royal Jelly once at 0.025% | 341.5 | 346 | 14.3 | 14.5 | 7.7 | 8.1 | 6.9 | 7.1 | 73.0 | 73.2 | 2.70 | 2.73 |
| 6- Royal Jelly twice at 0.025% | 346 | 351 | 15.1 | 15.4 | 8.0 | 8.3 | 7.1 | 7.3 | 74.9 | 75.5 | 2.98 | 2.96 |
| 7- Royal Jelly thrice at 0.025% | 347 | 352 | 15.2 | 15.5 | 8.1 | 8.4 | 7.2 | 7.4 | 75.0 | 75.6 | 3.00 | 3.10 |
| 8- Royal Jelly once at 0.05 % | 342 | 347 | 14.4 | 14.6 | 7.8 | 8.2 | 7.0 | 7.2 | 73.1 | 73.4 | 2.72 | 2.76 |
| 9- Royal Jelly twice at 0.05 % | 347 | 352 | 15.2 | 15.5 | 8.1 | 8.4 | 7.2 | 7.4 | 75.0 | 75.6 | 3.00 | 3.10 |
| 10- Royal Jelly thrice at 0.05 % | 348 | 353.0 | 15.3 | 15.6 | 8.2 | 8.5 | 7.3 | 7.5 | 75.2 | 75.7 | 3.03 | 3.12 |
| New L.S.D. at 5 % | 3.7 | 4.0 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.04 | 0.05 |

**Table (9):** Effect of spraying Royal Jelly at different concentrations and frequencies on some chemical characteristics of the fruits of Zebda mango trees during 2015 and 2016 seasons.

| Royal jelly treatments | T.S.S. % | | Titratable acidity % | | Total saugars % | | Reducing sugars % | | Vitamin C (mg/ 100 ml/ juice) | | Total fibre % | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 1- Control ( untreated trees) | 15.9 | 16.0 | 0.415 | 0.422 | 13.0 | 13.3 | 3.7 | 3.6 | 47.3 | 48.0 | 0.25 | 0.23 |
| 2- Royal Jelly once at 0.0125% | 16.2 | 16.3 | 0.392 | 0.400 | 13.3 | 13.6 | 3.9 | 3.9 | 48.1 | 48.7 | 0.22 | 0.20 |
| 3- Royal Jelly twice at 0.0125% | 16.6 | 16.7 | 0.371 | 0.378 | 13.6 | 14.0 | 4.2 | 4.1 | 49.0 | 49.7 | 0.19 | 0.17 |
| 4- Royal Jelly thrice at 0.0125% | 16.7 | 16.8 | 0.369 | 0.376 | 13.7 | 14.1 | 4.3 | 4.2 | 49.1 | 50.0 | 0.18 | 0.16 |
| 5- Royal Jelly once at 0.025% | 17.1 | 17.2 | 0.350 | 0.355 | 14.1 | 14.4 | 4.5 | 4.5 | 50.9 | 51.3 | 0.15 | 0.13 |
| 6- Royal Jelly twice at 0.025% | 17.5 | 17.6 | 0.320 | 0.318 | 14.4 | 14.8 | 4.7 | 4.8 | 52.1 | 53.0 | 0.12 | 0.10 |
| 7- Royal Jelly thrice at 0.025% | 17.6 | 17.7 | 0.318 | 0.316 | 14.5 | 14.9 | 4.8 | 4.9 | 52.2 | 53.1 | 0.11 | 0.09 |
| 8- Royal Jelly once at 0.05 % | 17.2 | 17.3 | 0.348 | 0.354 | 14.2 | 14.5 | 4.6 | 4.6 | 51.0 | 51.4 | 0.14 | 0.12 |
| 9- Royal Jelly twice at 0.05 % | 17.6 | 17.7 | 0.318 | 0.317 | 14.5 | 14.9 | 4.8 | 4.9 | 52.2 | 53.3 | 0.11 | 0.09 |
| 10- Royal Jelly thrice at 0.05 % | 17.8 | 17.8 | 0.316 | 0.315 | 14.6 | 15.0 | 4.9 | 5.0 | 52.3 | 53.4 | 0.10 | 0.08 |
| New L.S.D. at 5 % | 0.3 | 0.3 | 0.016 | 0.014 | 0.3 | 0.3 | 0.2 | 0.2 | 0.6 | 0.6 | 0.02 | 0.02 |