

Table 1. Effect of gamma radiation, mint oil and PP333 on weight loss % of Spunta potato tubers during storage at room temperature in 2014/2015 seasons

Treatments	Storage periods (weeks) at 25 ± 2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	0.00 a	0.00 a	1.97 a	2.55 b	3.49 a	4.49 a	5.20 a	0.00a	0.00a	3.14 b	2.73 b	3.52 a	4.62 b	5.06 a
Radiation	0.00 a	0.00 a	1.37 de	1.48 g	2.59 c	3.53 e	4.20 f	0.00a	0.00a	1.29 g	1.56 f	2.67 bc	3.58 g	4.30 c
Mint oil	0.00 a	0.00 a	1.20 e	1.59 f	2.52 cd	3.67 de	4.41 e	0.00a	0.00a	1.26 g	1.61 f	2.53 bc	3.83 e	4.63 b
Pp333	0.00 a	0.00 a	1.35 de	1.90 d	2.74 bc	3.64 de	4.18 f	0.00a	0.00a	1.50 f	1.89 e	2.83 bc	3.66 f	4.12 c
Radiation + mint oil	0.00 a	0.00 a	1.69 c	1.95 d	2.23 e	3.77 d	4.64 d	0.00a	0.00a	1.93 c	2.90d	3.14b	4.11 d	4.95 ab
Radiation + pp333	0.00 a	0.00 a	2.27 a	2.83 a	2.95 b	3.93 c	4.84 c	0.00a	0.00a	2.35 a	2.88 a	3.59 a	4.14 d	4.63 b
Mint oil + pp333	0.00 a	0.00 a	2.05 ab	2.12 c	2.68 c	4.52 a	5.14 a	0.00a	0.00a	1.85 d	2.28 c	2.80 bc	4.70 a	5.09 a
Radiation + mint oil + pp333	0.00 a	0.00 a	1.50 cd	1.78 e	3.31 de	4.16 b	4.95 b	0.00a	0.00a	1.62 e	1.93 e	2.51 c	4.19 c	4.69 b

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.

Table 2. Effect of gamma radiation, mint oil and PP333 on sprouting % of Spunta potato tubers during storage at room temperature in 2014/2015 seasons

Treatments	Storage periods (weeks) at 25 ± 2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	0.00 a	0.00 a	0.00 a	0.00 a	19.05 a	29.96b	52.78 e	0.00 a	0.00 a	0.00 a	0.00 a	14.40 d	29.13 d	54.40 d
Radiation	0.00 a	0.00 a	0.00 a	0.00 a	0.00 d	0.00 d	8.77 f	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	0.00 e	8.25 f
Mint oil	0.00 a	0.00 a	0.00 a	0.00 a	17.40 b	28.40 b	64.09 c	0.00 a	0.00 a	0.00 a	0.00 a	16.05 b	30.10 c	57.63 c
Pp333	0.00 a	0.00 a	0.00 a	0.00 a	0.00 d	0.00 d	4.49 f	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	0.00 e	7.90 f
Radiation + mint oil	0.00 a	0.00 a	0.00 a	0.00 a	17.93 b	28.93 b	68.89 b	0.00 a	0.00 a	0.00 a	0.00 a	17.33 a	37.28 b	65.24 a
Radiation + pp333	0.00 a	0.00 a	0.00 a	0.00 a	0.00 d	0.00 d	8.61 f	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	0.00 e	8.36 f
Mint oil + pp333	0.00 a	0.00 a	0.00 a	0.00 a	14.78 c	26.78 c	54.05 d	0.00 a	0.00 a	0.00 a	0.00 a	15.10 c	28.85 d	52.08 e
Radiation+mint oil + pp333	0.00 a	0.00 a	0.00 a	0.00 a	19.05 a	36.05 a	70.86 a	0.00 a	0.00 a	0.00 a	0.00 a	17.83 a	39.33 a	63.59 b

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.

Table 3. Effect of gamma radiation, mint oil and PP333 on shrinkage% of Spunta potato tubers during Storage at room temperature in 2014/2015 seasons

Treatments	Storage periods (weeks) at 25 ±2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	7.33 c	8.30 c	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	6.83 c	8.60 b
Radiation	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	3.45 e	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	3.13 c
Mint oil	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	8.00 a	9.83 a	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	8.23 a	9.83 a
Pp333	00.0 a	00.0 a	0.00 a	0.00 a	0.00 a	0.00 e	2.93 f	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	3.30 c
Radiation + mint oil	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	7.80 ab	9.03 b	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	8.13 ab	8.75 b
Radiation +pp333	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	3.60 e	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	0.00 e	3.28 c
Mint oil + pp333	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	5.83 d	7.70 d	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	6.28 d	8.28 b
Radiation + mint oil + pp333	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	7.68 b	8.50 c	0.00 a	0.00 a	0.00 a	0.00 a	0.00 a	7.95 b	8.60 b

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.

Table 4. Effect of gamma radiation , mint oil and PP333 on decay % of Spunta potato tubers during storage at room temperature in 2014/2015 seasons

Treatments	Storage periods (weeks) at 25 ±2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	5.29 c	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	4.99 c
Radiation	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d
Mint oil	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	6.29 b	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	5.44 b
Pp333	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d
Radiation + mint oil	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d
Radiation +pp333	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d
Mint oil + pp333	0.00 a	0.00 a	0.00 a	11.06 a	12.53 a	13.88 a	19.05 a	0.00 a	0.00 a	0.00 a	9.18 a	11.26 a	13.35 a	19.03 a
Radiation + mint oil + pp333	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d	0.00 a	0.00 a	0.00 a	0.00 b	0.00 b	0.00 b	0.00 d

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.

Table 5. Effect of gamma radiation, mint oil and PP333 on total loss % of Spunta potato tubers during storage at room temperature in 2014/2015 seasons

Treatments	Storage periods (weeks) at 25 ±2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	0.00 a	0.00 a	1.97 b	2.54 b	22.54 b	40.62 c	63.26 d	0.00 a	0.00 a	2.14 b	2.74 b	18.01 c	33.74 d	64.44 e
Radiation	0.00 a	0.00 a	1.37 de	1.48 d	2.59 e	3.53 e	12.96 e	0.00 a	0.00 a	1.26 g	1.56 e	2.67 d	3.58 e	12.55 f
Mint oil	0.00 a	0.00 a	1.20 e	1.59 cd	19.92 d	33.52 d	73.69 c	0.00 a	0.00 a	1.29 g	1.61 e	18.58 c	33.93 d	67.69 d
Pp333	0.00 a	0.00 a	1.35 de	1.90 c	2.74 e	3.64 e	12.67 e	0.00 a	0.00 a	1.50 f	1.89 d	2.83 d	3.66 e	12.02 f
Radiation *mint oil	0.00 a	0.00 a	1.69 c	1.94 c	20.16 d	40.52 c	73.52 c	0.00 a	0.00 a	1.93 c	2.13 c	20.20 b	41.39 c	70.14 c
Radiation *pp333	0.00 a	0.00 a	2.27 a	2.83 b	2.95 e	3.93 e	13.45 e	0.00 a	0.00 a	2.35 a	2.88 b	3.57 d	4.14 e	12.98 f
Mint oil *pp333	0.00 a	0.00 a	2.05ab	17.00 a	28.51 a	49.24 a	78.23 a	0.00 a	0.00 a	1.85 d	13.47 a	27.37a	64.85 a	76.19 b
Radiation *mint oil* pp333	0.00 a	0.00 a	1.50 cd	1.78 cd	21.36 c	43.11 b	75.80 b	0.00 a	0.00 a	1.62 e	1.93 d	20.33 b	83.51 b	86.30 a

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.

Table 6. Effect of gamma radiation, mint Oil and PP333 on specific gravity (g/cm³) of Spuntapotato tubers during Storage at room temperature in 2014 /2015 seasons

Treatments	Storage periods (weeks) at 25 ±2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	1.07 a	1.07 ab	1.11 a	1.11ab	1.12 a	1.13 a	1.16 a	1.04 a	1.10 a	1.09ab	1.11 a	1.12 a	1.16 a	1.16 a
Radiation	1.02 b	1.05 c	1.06 b	1.09ab	1.10 a	1.12 b	1.15 b	0.64 c	0.78 c	1.04 cd	1.06 b	1.12 a	1.128bc	1.15 b
Mint oil	1.01 b	1.03 cd	1.06 b	1.10ab	1.11 a	1.12 b	1.15b	0.86 b	0.93 b	1.11a	1.12a	1.12 a	1.126bc	1.13 d
Pp333	1.01 b	1.05 c	1.06 b	1.10ab	1.10 a	1.12 b	1.15 b	1.01 a	1.04 a	1.07 b-d	1.07ab	1.09 a	1.123bc	1.16 ab
Radiation + mint oil	1.01 b	1.06b	1.06 b	1.07ab	1.09 a	1.12 b	1.15 b	1.01 a	1.07 a	1.08 a-c	1.09ab	1.09 a	1.12 c	1.13 d
Radiation + pp333	1.00 b	1.04 cd	1.11 a	1.11ab	1.11 a	1.13 a	1.16 a	1.02 a	1.05 a	1.07 b-d	1.10ab	1.12 a	1.14ab	1.16 a
Mint oil + pp333	1.02 b	1.02 d	1.06 b	1.06 b	1.10 a	1.12b	1.16 a	0.87 b	0.94 b	1.03 d	1.05 b	1.11 a	1.13b	1.14 c
Radiation + mint oil + pp333	1.02 b	1.09 a	1.08ab	1.13 a	1.11 a	1.12 b	1.15 b	1.03 a	1.05 a	1.07 b-d	1.11 a	1.11a	1.11 c	1.13 d

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.

Table 7. Effect of gamma radiation, mint Oil and PP333 on total sugars % of Spunta potatotubers during storage at room temperature in 2014/2015 seasons

Treatments	Storage periods (weeks) at 25 ±2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	1.33 c	0.97 d	0.88 cd	0.76 c	0.51 d	0.43 cd	0.40 cd	1.49 d	0.97 e	0.87 d	0.75 d	0.50 e	0.40 d	0.39 d
Radiation	1.93 a	1.82 a	1.78 a	0.75 c	0.78 a	0.47 c	0.42 c	1.95 a	1.82 a	1.72 a	0.72 d	0.78 a	0.47 c	0.41 cd
Mint oil	1.33 c	1.18 c	0.95 c	0.86 b	0.75ab	0.66 a	0.66 a	1.32 e	1.17 d	0.96 c	0.88 b	0.75 ab	0.60 a	0.68 a
Pp333	1.28 cd	1.18 c	1.26 b	1.11 a	0.73 a-c	0.52 b	0.47 b	1.28 e	1.17 d	1.27 b	1.11 a	0.72 b	0.50 c	0.46 bc
Radiation + mint oil	1.20 d	0.82 f	0.58 e	0.47 c	0.48 d	0.46 c	0.40 cd	1.17 f	0.80 g	0.58 e	0.47 e	0.47 e	0.47 c	0.41 d
Radiation + pp333	0.96 e	0.88 e	0.80 d	0.81bc	0.56 d	0.46 c	0.38 d	0.94 g	0.87 f	0.86 d	0.79 c	0.55 d	0.47 c	0.38 d
Mint oil + pp333	1.74 b	1.52 b	1.32 b	0.74 c	0.69 bc	0.41 d	0.38 d	1.66 c	1.53 b	1.31 b	0.73 d	0.66 c	0.40 d	0.37 d
Radiation + mint oil + pp333	1.71 b	1.19 c	0.91 c	0.78bc	0.65 c	0.55 b	0.48 b	1.76 b	1.22 c	0.90 d	0.75 d	0.64 c	0.56 b	0.47 b

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.

Table 8. Effect of gamma radiation, mint oil and PP333 on starch content % of Spunta potatotubers during storage at room temperature in 2014/2015 seasons

Treatments	Storage periods (weeks) at 25 ±2													
	First season							Second season						
	0	2	4	6	8	10	12	0	2	4	6	8	10	12
Control	17.86 e	16.31 e	14.89 e	13.36 d	12.22 g	14.10 c	13.01 d	17.64 e	16.19 e	14.69 d	13.20 e	12.08 f	13.99 c	12.93 d
Radiation	22.93 a	19.78 a	18.31 a	17.37 b	16.54 c	13.98 c	13.43 d	22.78 a	19.61 a	17.93 a	17.35 b	12.46 c	13.82 c	13.34 d
Mint oil	20.24 c	18.92 b	15.66 cd	18.95 a	15.23 d	12.17 e	12.10 e	20.20 c	18.87 b	15.59 c	18.77 a	12.25 d	12.06 e	12.03 e
Pp333	14.06 g	15.03 f	16.76 b	19.01 a	17.82 b	12.93 d	12.11 e	14.01 g	14.89 f	16.65 b	18.88 a	17.76 b	12.79 d	12.09 e
Radiation + mint oil	21.17 b	17.35 d	15.94 c	13.14 d	13.68 e	17.06 a	15.83 b	21.14 b	17.28 d	15.81 c	13.02 e	13.60 e	16.70 a	15.72 b
Rad + pp333	16.19 f	17.19 d	15.15 de	17.29 b	20.03 a	15.76 b	17.03 a	15.83 f	17.26 d	14.91 d	17.22 bc	20.04 a	15.63 b	16.91 a
Mint oil + pp333	20.49bc	16.10 e	13.58 f	14.01 c	13.03 f	13.32 e	12.14 e	20.37 c	16.15 e	13.41 e	13.93 d	12.77 f	12.34 e	11.99 e
Radiation + mint oil + pp333	18.68 d	17.95 c	18.17 a	16.92 b	18.21 b	14.08 c	14.73 c	15.53 d	17.90 c	18.04 a	16.79 c	17.83 b	13.87 c	14.69 c

Values in the same column followed by the same letter do not significantly differ from each other according to Duncan's multiple range tests at 5% level.