

Table 1 . Effect of some herbicides treatments and different rice cultivars on mineral leaf pigments (mg/g FW) and total carbohydrate in rice plants during 2019 season

Treatment Rice cultivars	Chlorophyll a						Chlorophyll b						Chlorophyll a+b					
	EHR1	Sakha 104	Giza 179	Giza 178	Mean	Reduction (%)	EHR1	Sakha 104	Giza 179	Giza 178	Mean	Reduction (%)	EHR1	Sakha 104	Giza 179	Giza 178	Mean	Reduction (%)
Halosulfuron-methyl	2.19	2.15	2.06	1.97	2.09	18.10	2.36	2.30	2.23	2.04	2.23	41.52	4.55	4.45	4.29	4.00	4.32	32.12
Fenoxaprop-p-ethyl	2.25	2.21	2.15	2.04	2.16	15.36	2.60	2.44	2.31	2.18	2.38	37.59	4.85	4.65	4.45	4.22	4.54	28.66
Bispyribac-sodium	2.67	2.50	2.48	2.38	2.51	1.86	2.90	2.85	2.75	2.55	2.76	27.64	5.57	5.35	5.23	4.93	5.27	17.24
Bensulfuron-methyl	2.67	2.45	2.32	2.27	2.43	4.99	2.92	2.71	2.53	2.45	2.65	30.52	5.59	5.16	4.85	4.72	5.08	20.22
Control	2.76	2.63	2.33	2.50	2.56	0.0	4.02	3.86	3.73	3.66	3.82	0.0	6.77	6.49	6.05	6.16	6.37	0.0
LSD	0.178						0.035						0.166					

Table 1 . Continued

Treatment Rice cultivars	Carotenoids						Total carbohydrate					
	EHR1	Sakha 104	Giza 179	Giza 178	Mean	Reduction (%)	EHR1	Sakha 104	Giza 179	Giza 178	Mean	Reduction (%)
Halosulfuron-methyl	3.04	2.94	2.86	2.76	2.90	14.77	17.95	17.47	17.08	16.28	17.20	10.51
Fenoxaprop-p-ethyl	3.15	3.03	2.96	2.85	3.00	11.90	18.06	17.64	17.25	16.40	17.34	9.77
Bispyribac-sodium	3.80	3.29	3.14	3.08	3.33	2.20	18.23	17.93	17.50	16.92	17.65	8.17
Bensulfuron-methyl	3.15	3.02	2.86	2.74	2.94	13.52	18.36	18.05	17.89	17.51	17.95	6.57
Control	3.57	3.50	3.33	3.21	3.40	0.0	19.81	19.60	18.95	18.50	19.22	0.0
LSD	0.044						0.068					

Table 2. Effect of some herbicides treatments and different rice cultivars on essential amino acids in rice plants during 2019 season

Treatment Rice cultivars	Cysteine				Threonine				Isoleucine				Leucine			
	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178
Halosulfuron-methyl	0.25	0.23	0.18	0.15	3.72	3.57	3.40	3.39	6.94	6.77	6.55	6.50	5.63	5.50	5.29	5.21
Fenoxaprop-p-ethyl	0.24	0.22	0.20	0.17	3.92	3.67	3.56	3.41	7.04	6.90	6.80	6.60	5.92	5.63	5.42	5.37
Bispyribac-sodium	0.30	0.27	0.24	0.20	4.05	3.97	3.77	3.46	7.21	7.03	6.91	6.65	6.06	5.91	5.86	5.48
Bensulfuron-methyl	0.33	0.25	0.25	0.25	4.13	4.08	4.03	3.95	7.37	7.40	7.30	7.16	6.15	6.03	5.93	5.75
Control	0.35	0.30	0.27	0.26	4.38	4.14	4.07	3.95	7.60	7.54	7.39	7.13	6.24	6.06	6.03	5.94
LSD	0.024				0.049				0.052				0.056			

Table 2. Continued

Treatment Rice cultivars	Phenylalanine				Tyrosine				Valine				Total essential amino acids			
	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178
Halosulfuron-methyl	7.35	7.27	7.03	6.93	2.17	2.10	2.04	1.99	3.56	3.46	3.35	3.16	37.52	37.01	35.78	35.03
Fenoxaprop-p-ethyl	4.54	4.40	4.17	4.05	2.31	2.16	2.04	1.98	3.87	3.66	3.46	3.30	36.35	35.04	33.78	32.93
Bispyribac-sodium	4.75	4.70	4.58	4.27	2.49	2.35	2.25	2.10	4.20	4.05	3.94	3.87	37.95	36.99	36.09	34.27
Bensulfuron-methyl	4.94	4.82	4.65	4.50	2.67	2.40	2.50	2.30	4.53	4.26	4.04	3.94	39.22	38.12	37.44	36.42
Control	5.10	4.96	4.76	4.67	2.70	2.60	2.56	2.46	4.68	4.33	4.20	4.04	40.63	38.96	38.13	37.13
LSD	0.059				0.037				0.053				0.357			

Table 3. Effect of some herbicides treatments and different rice cultivars on non-essential amino acids in rice plants during 2019 season

Treatment Rice cultivars	Aspartic				Serine				Proline				Glycine			
	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178
Halosulfuron-methyl	12.50	12.32	12.31	12.16	3.56	3.57	3.41	3.31	7.67	7.27	7.05	6.93	3.39	3.38	3.27	3.16
Fenoxaprop-p-ethyl	12.73	12.63	12.41	12.06	3.85	3.80	3.61	3.60	7.83	7.71	7.53	7.46	3.56	3.50	3.38	3.20
Bispyribac-sodium	12.91	12.77	12.55	12.49	4.04	4.00	3.80	3.75	8.04	7.99	7.85	7.70	3.88	3.56	3.49	3.36
Bensulfuron-methyl	13.57	13.13	12.97	12.44	4.10	4.08	3.91	3.78	8.19	8.14	7.70	7.66	4.04	3.99	3.70	3.63
Control	12.90	12.67	12.35	12.20	4.26	4.10	4.03	3.89	8.23	8.12	8.03	7.84	4.20	4.04	3.95	3.48
LSD	0.226				0.040				0.126				0.068			

Table 3. Continued

Treatment Rice cultivars	Alanine				Histidine				Arginine				Protein			
	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178
Halosulfuron-methyl	3.04	2.96	2.79	2.61	3.45	3.30	3.25	3.17	6.56	6.40	6.17	6.04	8.11	7.26	6.82	6.67
Fenoxaprop-p-ethyl	3.18	3.04	3.03	2.96	3.61	4.48	3.27	3.07	6.86	6.73	6.61	6.44	8.38	7.38	6.97	6.82
Bispyribac-sodium	3.30	3.14	3.06	3.00	3.91	3.67	3.51	3.35	7.00	6.93	6.85	6.77	8.61	7.64	7.20	6.91
Bensulfuron-methyl	3.53	3.47	3.26	3.21	4.04	4.02	3.81	3.57	7.15	7.12	6.99	6.75	9.11	7.73	7.41	7.06
Control	3.82	3.60	3.49	3.15	4.17	4.04	3.96	3.52	7.13	7.04	7.04	6.85	9.29	8.11	7.61	7.26
LSD	0.055				0.055				0.072				0.126			

Table 4. Effect of some herbicides treatments and different rice cultivars on yield and yield components in rice plants during 2019 season

Treatment Rice cultivars	Number of panicle per m ²				Filled grains no./ panicle				1000-grains weight (g)			
	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178
Halosulfuron-methyl	593.9	646.4	608.0	595.9	170.0	142.8	148.2	141.4	25.22	25.33	20.01	20.39
Fenoxaprop-p-ethyl	404.0	606.0	494.9	414.1	139.4	110.2	115.9	130.9	25.61	27.03	27.85	22.11
Bispyribac-sodium	602.0	656.5	616.1	606.0	132.6	136.0	145.9	153.0	26.17	30.22	20.62	21.26
Bensulfuron-methyl	606.0	660.5	608.0	595.9	153.0	115.6	150.3	149.6	20.20	29.65	23.59	20.77
Control	387.8	589.8	484.8	402.0	125.8	97.24	73.10	123.1	23.96	24.73	17.58	16.07
LSD	1.8607				0.9783				0.1699			

Table 4. Continued

Treatment Rice cultivars	Grain yield (ton/ fad)				Harvest index (%)			
	EHR1	Sakha 104	Giza 179	Giza 178	EHR1	Sakha 104	Giza 179	Giza 178
Halosulfuron-methyl	3.92	4.53	3.97	3.57	52.94	53.30	51.56	47.83
Fenoxaprop-p-ethyl	3.82	3.81	3.57	3.34	46.34	45.35	49.18	44.15
Bispyribac-sodium Bensulfuron-methyl	4.75	5.08	4.45	4.37	50.69	50.83	52.40	43.76
Control	4.44	4.92	4.29	4.13	48.42	44.30	45.10	40.73
LSD	0.0175				4.4397			