

Table (2). Number of spikelets /spike and No. of grains/spike of barley as affected by nano-fertilizer, seeding rate, and nitrogen fertilization in both growing seasons and their combined.

| Main effects and interactions | No. of spikelets/spike | | | No. of grains/spike | | |
|--|------------------------|------------------------|---------|------------------------|------------------------|---------|
| | 1 st season | 2 nd season | Comb. | 1 st season | 2 nd season | Comb. |
| <i>Nano-fertilizer application (A):</i> | | | | | | |
| Treated | 27.56 a | 28.49 a | 28.02 a | 20.79 a | 21.86 a | 21.33 a |
| Untreated | 26.38 b | 27.53 b | 26.96 b | 19.54 b | 20.66 b | 20.10 b |
| F-test | ** | ** | ** | ** | ** | ** |
| <i>Seeding rate kg/fad. (S):</i> | | | | | | |
| 40 | 27.98 a | 28.39 a | 28.18 a | 21.21 a | 22.03 a | 21.62 a |
| 60 | 26.55 b | 27.76 b | 27.16 b | 19.86 b | 21.03 b | 20.44 b |
| 80 | 26.39 b | 27.87 b | 27.13 b | 19.42 b | 20.72 c | 20.07 c |
| F-test | ** | ** | ** | ** | * | ** |
| <i>Nitrogen fertilization kg/fad. (N):</i> | | | | | | |
| 15 | 23.38 d | 23.64 d | 23.51 d | 16.36 d | 16.31 d | 16.33 d |
| 30 | 25.05 c | 25.12 c | 25.08 c | 18.12 c | 18.33 c | 18.22 c |
| 45 | 27.77 b | 28.22 b | 27.99 b | 21.13 b | 22.25 b | 21.69 b |
| 60 | 31.69 a | 35.06 a | 33.38 a | 25.05 a | 28.14 a | 26.59 a |
| F-test | ** | ** | ** | ** | ** | ** |
| <i>Interactions:</i> | | | | | | |
| AXS | NS | NS | NS | NS | * | NS |
| AXN | * | NS | * | ** | ** | ** |
| SXN | * | NS | NS | ** | ** | ** |

Values having the different alphabetical letter(s) did significantly differ at the 0.05 level of significance, according to Duncan's multiple range test.

Table (3). Grain weight (g) /spike and No. of spikes/m² of barley as affected by nano-fertilizer, seeding rate, and nitrogen fertilization in two growing seasons and their combined.

| Main effects and interactions | Grain weight (g)/spike | | | No. of spikes /cm ² | | |
|--|------------------------|------------------------|---------|--------------------------------|------------------------|---------|
| | 1 st season | 2 nd season | Comb. | 1 st season | 2 nd season | Comb. |
| <i>Nano-fertilizer application (A):</i> | | | | | | |
| Treated | 0.731 a | 0.778 a | 0.754 a | 344.4 a | 343.8 a | 344.1 a |
| Untreated | 0.681 b | 0.728 b | 0.704 b | 340.1 b | 340.8 b | 340.5 b |
| F-test | ** | ** | ** | ** | * | ** |
| <i>Seeding rate kg/fad. (S)</i> | | | | | | |
| 40 | 0.743 a | 0.788 a | 0.765 a | 341.5 b | 340.8 b | 341.1 b |
| 60 | 0.693 b | 0.741 b | 0.717 b | 341.0 b | 341.4 b | 341.2 b |
| 80 | 0.682 b | 0.731 b | 0.706 b | 344.2 a | 344.7 a | 344.5 a |
| F-test | ** | ** | ** | ** | * | ** |
| <i>Nitrogen fertilization kg/fad. (N):</i> | | | | | | |
| 15 | 0.497 d | 0.505 d | 0.501 d | 334.5 d | 335.7 d | 335.1 d |
| 30 | 0.587 c | 0.587 c | 0.587 c | 339.6 c | 340.3 c | 340.0 c |
| 45 | 0.795 b | 0.825 b | 0.810 b | 345.8 b | 345.8 b | 345.7 b |
| 60 | 0.946 a | 1.095 a | 1.020 a | 349.2 a | 347.5 a | 348.3 a |
| F-test | ** | ** | ** | ** | * | ** |
| <i>Interactions:</i> | | | | | | |
| AXS | NS | * | * | NS | NS | NS |
| AXN | ** | * | ** | NS | NS | NS |
| SXN | NS | NS | * | NS | NS | NS |

Values having the different alphabetical letter(s) did significantly differ at the 0.05 level of significance, according to Duncan's multiple range test.

Table (4).Thousand grain weight (g.) and grain yield (ardab/fad.) of barley as affected by nano-fertilizer, seeding rate, and nitrogen fertilization in both growing seasons and their combined.

| Main effects and interactions | 1000 - grain weight (g.) | | | Grain yield (ardab/fad.) | | |
|--|--------------------------|------------------------|---------|--------------------------|------------------------|----------|
| | 1 st season | 2 nd season | Comb. | 1 st season | 2 nd season | Comb. |
| Nano- fertilizer application (A): | | | | | | |
| Treated | 34.74 a | 34.81 | 34.77 a | 8.861 a | 9.357 a | 9.109 a |
| Untreated | 34.13 b | 34.64 | 34.39 b | 8.164 b | 8.749 b | 8.456 b |
| F-test | ** | NS | ** | ** | ** | ** |
| Seeding rate kg/fad. (S): | | | | | | |
| 40 | 34.91 a | 35.04 a | 34.98 a | 8.192 c | 8.741 c | 8.466 c |
| 60 | 34.55 b | 34.62 b | 34.58 b | 8.306 b | 8.887 b | 8.596 b |
| 80 | 33.84 c | 34.52 b | 34.18 c | 9.039 a | 9.532 a | 9.285 a |
| F-test | ** | ** | ** | ** | ** | ** |
| Nitrogen fertilization kg/fad. (N): | | | | | | |
| 15 | 30.38 c | 30.91 d | 30.64 c | 5.818 d | 5.942 d | 5.880 d |
| 30 | 32.65 b | 31.74 c | 32.20 b | 6.980 c | 6.947 c | 6.963 c |
| 45 | 37.61 a | 37.33 b | 37.47 a | 9.687 b | 10.020 b | 9.853 b |
| 60 | 37.10 a | 38.92 a | 38.01 a | 11.560 a | 13.290 a | 12.425 a |
| F-test | ** | ** | ** | ** | ** | ** |
| Interactions: | | | | | | |
| AXS | NS | ** | ** | * | ** | NS |
| AXN | NS | * | ** | ** | * | NS |
| SXN | NS | * | ** | * | ** | * |

Values having the different alphabetical letter(s) did significantly differ at the 0.05 level of significance, according to Duncan's multiple range test.