**ICAR-Central Soil Salinity Research Institute,**

**Karnal-132001 (Haryana)**

**Project Title:** Morpho-physiological characterization and standardization of agronomic practices of quinoa (*Chenopodium quinoa*) for salt affected ecosystems.

**Experimental Data:**

Table 1. Effect of irrigation water salinity on grain yield (g/plant) of quinoa germplasm

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Germplasm** | **ECiw dS/m** | | | | **Mean** |
| **BAW** | **08** | **16** | **24** |
| EC507744 | 13.83 | 8.13 | 7.20 | 6.90 | 9.02 |
| EC507742 | 12.47 | 9.80 | 7.10 | 6.47 | 8.96 |
| IC411824 | 12.93 | 10.80 | 9.17 | 6.43 | 9.83 |
| EC507741 | 12.33 | 11.30 | 7.63 | 6.77 | 9.51 |
| EC507746 | 13.60 | 11.00 | 8.83 | 6.60 | 10.01 |
| EC507738 | 12.07 | 9.23 | 7.23 | 5.80 | 8.58 |
| EC507748 | 13.70 | 10.80 | 8.53 | 7.00 | 10.01 |
| EC507739 | 9.83 | 9.83 | 8.67 | 5.73 | 8.52 |
| EC411824 | 14.67 | 11.50 | 9.60 | 5.47 | 10.31 |
| EC507740 | 14.33 | 10.77 | 10.00 | 9.20 | 11.08 |
| IC411825 | 12.27 | 11.40 | 7.30 | 5.77 | 9.18 |
| L1 | 13.50 | 10.23 | 10.07 | 7.67 | 10.37 |
| L 2 | 14.40 | 10.90 | 7.83 | 7.30 | 10.11 |
| BJ | 11.80 | 9.27 | 8.77 | 4.67 | 8.63 |
| Pasa | 9.93 | 8.20 | 4.63 | 3.90 | 6.67 |
| White quinoa | 9.70 | 7.00 | 6.17 | 4.90 | 6.94 |
| Red quinoa | 8.50 | 7.27 | 6.23 | 3.90 | 6.48 |
| Brown quinoa | 9.30 | 7.93 | 6.47 | 4.67 | 7.09 |
| CITO | 8.70 | 8.03 | 6.80 | 4.33 | 6.97 |
| **Mean** | 11.99 | 9.65 | 7.80 | 5.97 |  |
|  | **Germplasm** | **Salinity** | **G×S** |  |  |
| LSD (P=0.05) | 1.70 | 0.78 | NS |  |  |

Table 2. Effect of irrigation water salinity on Zn content (ppm) in grains of quinoa germplasm

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Germplasm** | **ECiw dS/m** | | | | **Mean** |
| **BAW** | **08** | **16** | **24** |
| EC507744 | 37.5 | 42.5 | 46.8 | 50.8 | 44.4 |
| EC507742 | 34.0 | 35.5 | 43.5 | 46.3 | 39.8 |
| IC411824 | 30.0 | 35.3 | 40.5 | 46.8 | 38.1 |
| EC507741 | 31.8 | 35.9 | 41.5 | 50.1 | 39.8 |
| EC507746 | 34.8 | 34.4 | 39.0 | 50.0 | 39.5 |
| EC507738 | 34.0 | 38.3 | 50.0 | 53.0 | 43.8 |
| EC507748 | 35.0 | 42.9 | 45.0 | 50.8 | 43.4 |
| EC507739 | 36.0 | 36.9 | 49.5 | 53.0 | 43.9 |
| EC411824 | 33.5 | 39.1 | 45.5 | 58.4 | 44.1 |
| EC507740 | 38.5 | 40.2 | 51.5 | 52.3 | 45.6 |
| IC411825 | 39.0 | 51.5 | 52.0 | 54.6 | 49.3 |
| L1 | 36.0 | 37.5 | 47.0 | 49.3 | 42.5 |
| L 2 | 35.0 | 35.5 | 51.0 | 58.1 | 44.9 |
| BJ | 33.8 | 37.0 | 45.0 | 53.4 | 42.3 |
| Pasa | 43.5 | 43.7 | 51.0 | 51.4 | 47.4 |
| White quinoa | 49.0 | 43.7 | 52.0 | 67.4 | 53.0 |
| Red quinoa | 44.5 | 49.0 | 53.9 | 58.9 | 51.6 |
| Brown quinoa | 47.0 | 48.7 | 62.3 | 63.4 | 55.4 |
| CITO | 52.6 | 56.7 | 60.4 | 61.8 | 57.9 |
| **Mean** | 38.3 | 41.1 | 48.8 | 54.2 |  |
|  | Germplasm | Salinity | G×S |  |  |
| LSD (P=0.05) | 3.0 | 1.4 | 6.0 |  |  |

Table 3. Effect of irrigation water salinity on Fe content (ppm) in grains of quinoa germplasm

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Germplasm** | **ECiw dS/m** | | | | **Mean** |
| **BAW** | **08** | **16** | **24** |
| EC507744 | 121 | 125 | 129 | 127 | 126 |
| EC507742 | 116 | 123 | 128 | 145 | 128 |
| IC411824 | 116 | 123 | 136 | 123 | 124 |
| EC507741 | 106 | 109 | 145 | 136 | 124 |
| EC507746 | 127 | 130 | 149 | 141 | 137 |
| EC507738 | 108 | 111 | 153 | 154 | 132 |
| EC507748 | 115 | 121 | 157 | 147 | 135 |
| EC507739 | 109 | 123 | 155 | 136 | 131 |
| EC411824 | 112 | 115 | 159 | 158 | 136 |
| EC507740 | 113 | 117 | 150 | 152 | 133 |
| IC411825 | 112 | 145 | 160 | 159 | 144 |
| L1 | 113 | 112 | 141 | 144 | 127 |
| L 2 | 106 | 120 | 152 | 148 | 131 |
| BJ | 117 | 120 | 138 | 129 | 126 |
| Pasa | 133 | 140 | 149 | 138 | 140 |
| White quinoa | 135 | 139 | 149 | 138 | 140 |
| Red quinoa | 140 | 148 | 154 | 150 | 148 |
| Brown quinoa | 122 | 122 | 141 | 134 | 130 |
| CITO | 122 | 130 | 129 | 158 | 135 |
| **Mean** | 118 | 125 | 146 | 143 |  |
|  | **Germplasm** | **Salinity** | **G×S** |  |  |
| LSD (P=0.05) | 7 | 3 | 14 |  |  |

Figure 1. Effect of salinity stress on K and Na content in root shoot and leaves of quinoa

Figure 2. Effect of salinity stress on K/Na ratio in root shoot and leaves of quinoa