



Figure 1. Soil physical and chemical properties of the test soil.

**Table 1.** The name, origin, status and seed color of the quinoa (*Chenopodium quinoa* Willd.), alfalfa (*Medicago sativa* L.), oats (*Avena sativa* L.) and *Leymus chinensis* (Trin.) Tzvel used in this work.

<b>Species</b>	<b>Name</b>	<b>Origin</b>	<b>Status</b>	<b>Seed Color</b>
<i>Chenopodium quinoa</i>	Titicaca	Denmark	Cultivar	White
<i>Chenopodium quinoa</i>	Rainbow	Chile	Cultivar	White
<i>Chenopodium quinoa</i>	Illpa	Peru	Cultivar	White
<i>Chenopodium quinoa</i>	ZQ1	China	Advanced lines	White
<i>Chenopodium quinoa</i>	ZQ2	China	Advanced lines	White
<i>Chenopodium quinoa</i>	ZQ3	China	Advanced lines	White
<i>Chenopodium quinoa</i>	ZQ4	China	Advanced lines	White
<i>Chenopodium quinoa</i>	ZQ5	China	Advanced lines	White
<i>Chenopodium quinoa</i>	ZQ6	China	Advanced lines	White
<i>Chenopodium quinoa</i>	Mengli 1	China	Cultivar	White
<i>Chenopodium quinoa</i>	YY28	China	Landrace	White
<i>Chenopodium quinoa</i>	JQ3	China	Landrace	White
<i>Chenopodium quinoa</i>	Tiaoli 1	China	Cultivar	White
<i>Chenopodium quinoa</i>	Nilu	China	Cultivar	White
<i>Chenopodium quinoa</i>	Longli 3	China	Cultivar	White
<i>Medicago sativa</i> L.	Dongmu 1	China	Cultivar	–
<i>Avena sativa</i> L.	Baiyan 7	China	Cultivar	–
<i>Leymus chinensis</i> (Trin.) Tzvel.	–	China	Wild germplasm	–