

研究论文

# 俄罗斯大果沙棘 (*Hippophae rhamnoides* L.) 种子萌发特性

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**摘要** 俄罗斯丘依斯克大果沙棘 (*Hippophae rhamnoides* L.) 为优良的沙棘引进种。经测定, 俄罗斯大果沙棘丘依斯克种子的千粒重为17.75 g, 与其它沙棘属的种子相比, 其千粒重较大, 为其2倍左右。四唑 (TTC, 1.0%) 染色测种子的生活力的结果表明: 有生活力的种子占97.75%, 说明俄罗斯大果沙棘种子饱满度好; 染色结果与对比发芽实验的结果很接近, 说明用四唑染色来测定俄罗斯大果沙棘种子的发芽能力是较准确的方法。在水、气适宜的条件下, 分别研究了温度分别为15、20、25、30℃, 光照强度分别为25%、50%、75%、100%的不同处理对丘依斯克种子萌发的影响, 并采用胚根生长量和全株生物量对沙棘种子发芽效果进行了评价, 提出了沙棘种子发芽的最适温度和光强。结果表明, 在25℃条件下, 种子萌发最早, 发芽势高达33.0%±4.76%, 发芽率高达95.5%±1.5%, 且主根生长量和生物量最大, 分别为 (4.5±0.09) cm和 (0.137±0.002) g; 75%光强最适合沙棘种子萌发, 种子萌发最早, 发芽势高达61.5%±1.7%, 发芽率高达86.0%±1.1%, 且主根生长量和生物量最大, 分别为 (3.7±0.2) cm和 (0.108±0.004) g。因此, 在直播营造大果沙棘林时, 应首选25℃的温度条件, 同时, 建议进行适度遮荫处理。

**关键词** [大果沙棘](#); [温度](#); [光照强度](#); [种子萌发](#); [幼苗生长](#)

**分类号** [Q143](#), [Q948](#)

## Seed germination characteristics of a introduced fine variety of *Hippophae rhamnoides* L. from Russia

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**Abstract** The fine variety of *Hippophae rhamnoides* L. was introduced from Russia. The 1000 seed weight of it was 17.75 g, which was two times greater than that of seeds of other seabuckhorn varieties. The seed viability, tested by TTC (1.0%), was 97.75% which was closed to germination rate under controlled germination condition (25℃), indicating that TTC could provide a reliable method for germination potential test for this variety. Germination tests were conducted to determine the effects of environmental temperatures (15, 20, 25℃ and 30℃) and light conditions (25%, 50%, 75% and 100%) under suitable moisture and aeration, and radicle length and total biomass of young seedlings were used to evaluate seeds germination effects. The optimal temperature for seeds germination and early growth of seedlings was 25℃, with the germination energy, germination rate, radicle length, and total biomass of 33.0%±4.76%, 95.5%±1.5%, (4.5±0.09) cm, and (0.137±0.002) g, respectively. Light intensity also had a marked effect on the seeds germination and seedlings growth. The optimal light intensity for seed germination and seedling growth was 75%, with the germination energy, germination percentage, radicle length, and total biomass of 61.5%±1.7%, 86.0%±1.1%, (3.7±0.2) cm and (0.108±0.004) g, respectively. Therefore, environmental conditions with temperature of 25℃ and light intensity of 75% full sunlight should be favored during direct seeding of this variety.

**Key words** [Hippophae rhamnoides](#) variety from [Russia](#) [temperature](#) [light intensity](#) [seed germination](#) [seedling growth](#)

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