

## Seedling emergence and survival of *Iris lactea* var. *chinensis* in different vegetations

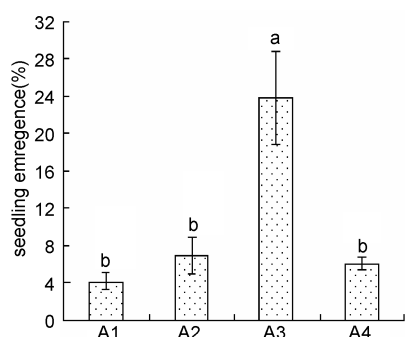
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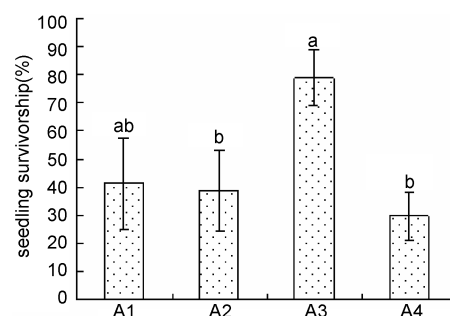
**Key words:** *Iris lactea* var. *chinensis*, seedling, emergence, survival, vegetations

**Introduction** *I. lactea* population became dominant during the process of grassland succession when grassland was overgrazed. In general, good vegetation can restrain seed germination and seedling survival (Fenner M, 1985, 2000). In this experience, we would find how seed germinate of *I. lactea* and seedling survive in different vegetation condition.

**Material and method** *I. lactea* seeds were collected from wild stands growing in the Guyuan Rangeland of Hebei in September 2005. Capsules were air dried for 10 d to release seeds and seeds were stratified with sand and water (seed to sand=1 to 3) outdoors during winter, which had a period of over 150 days below 0°C. On June 2006, seeds were picked up and stored in refrigerator at 4°C. The experiment was conducted in a randomised complete block design consisting of four seedbed treatments and five replicates: a control, A1, (undisturbed vegetation); a removal treatment, A3, (cutting out the existing vegetation and digging out the plant roots to a depth of 20 cm, then the soil were backfilled) and two cutting treatments (pre-sowing cutting only-cutting the existing vegetation at ground level, A2; pre-sowing cutting followed by post-sowing interval cutting-cutting the existing vegetation at ground level and keep the existing vegetation to a height of 4 cm prior to the growing season, A4). Each plot was 100×100 cm<sup>2</sup> and the distance between plots was 50 cm. On July 20th, 2006, 200 seeds were sown into each plot.



**Figure 1** Effects of different vegetation treatments on seedling emergence of *I. lactea*.



**Figure 2** Effects of different vegetation treatments on seedling survival of *I. lactea*.

**Results** Seedlings emerged after 50 days of sowing. Seedling emergence (23%) in the removal treatment (A3) was higher than the other three treatments (Figure 1). Seedling survived after counting seedling emerge percent 40d as Figure 2. The removal treatment also resulted in the highest seedling survival.

**Conclusions** The removal treatment significantly improve seedling emergence and survival. This may be due to both improved soil water and gas condition and reduced root allelopathy of other plants. The control also improved seedling survival. It may be due to reduced seedling transpiration.

### References

- Fenner M. seed ecology: germination. London New York: Chapman and Hall, 1985: 87-102.  
Fenner M. Seeds: the ecology of regeneration in plant communities (2<sup>nd</sup>). London New York: CAB International, 2000, 237-330.