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## The Influence of Simulating Warming Effect on *Ranunculus brotherusii*

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## The influence of simulating warming effect on *Ranunculus brotherusii*

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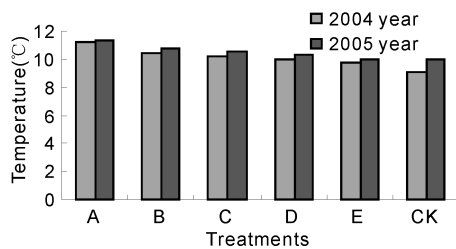
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**Key words :** *Ranunculus brotherusii* , warming effect ,chamber ,buds ,mortality

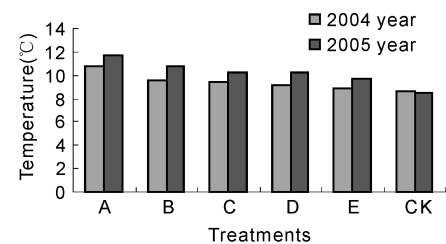
**Introduction** Global warming have becoming a well known fact that is one phenomena of the global changing . Effecting and feedbacking on land ecosystem have been researched by GCET that is becoming the hotspot in climate changing domain (IPCC , 1995 , 2001) .

**Materials and methods** Based on the International Tundra Experiment (ITEX) method , we established five different size of chambers as A ,B ,C ,D ,E and CK , and examined the simulating warming effects on buds and morality of *Ranunculus brotherusii* .

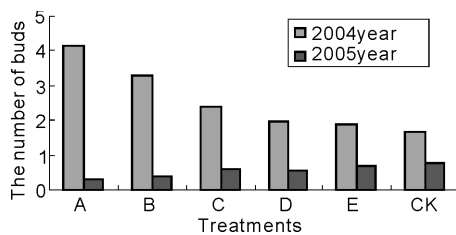
**Results** The temperature (surface and underground temperature) increased with the size of the chamber decreasing from CK to chamber A which had the highest temperature of 11.9°C , 11.7°C (Figure 1 2) . The temperature was lowest in the CK which were 9.4°C , 9.9°C . Compared chamber A with the control , the temperatures increased during 2004(2.6°C , 2.2°C) , 2005(2.2°C , 2.1°C) and 2006(2.1°C , 2.0°C) . The number of buds of the *Ranunculus brotherusii* was increased with the temperature warming and they were decreased year by year (Figure 3) . However , the buds number of the *Ranunculus brotherusii* was decreased with the temperature increasing in the second year and the growth period was shortened (Figure 4) . The results proved that the higher temperature was disadvantageous to growth of the *Ranunculus brotherusii* and it would be gradually phasing out if the climate becomes warming and warming .



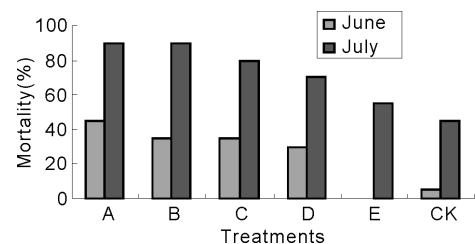
**Figure 1** The variation of the average ground surface temperature in different treatments .



**Figure 2** The variation of the average underground temperature in different treatments .



**Figure 3** The variation of bud number in different treatments .



**Figure 4** The variation of mortality in different treatment .

### References

- IPCC . Climate Change 2001 , Impact , Adaptation , and Vulnerability [M] . Cambridge : Cambridge University Press , 2001 .  
 IPCC . Climate change 1995 :the science of climate change summary for policy maker and technical summary of the warming group report[M] . London : Cambridge University Press ,1995 .