



2nd National Congress on Medicinal Plants
15, 16 May 2013
Tehran- Iran



**GERMINATION OF BALANGU (*LALLEMANTIA ROYLEANA*) AS
AFFECTED BY HYDROPRIMING AND GERMINATION
TEMPERATURES**

Saeideh Maleki Farahani,^{1*} Zeynab kobra Pishva¹

Crop Production and Plant Breeding Department, Shahed University, Tehran, Iran
E-mail: maleki@shahed.ac.ir

Unsuitable germination temperature could be one of the major problems to achieve success in medicinal plants cultivation. Hydro-priming as one of the priming techniques has shown beneficial effects on seedling growth rate, crop yield and reduction of thermal time requirement for germination (Casenava and Toselli, 2007; Ghassemi-Golezani et al, 2010). It is necessary to find the best temperature of germination and priming to achieve medicinal plants potential. Regarding lack of information about suitable temperature for germination and priming of Balangu as one of the anti reflex medicinal plants this study was conducted with combinations of hydropriming and germination temperature in seed laboratory of Shahed University. Seeds of *Lallemantia royleana* were subjected to hydropriming with distilled water for 24 h at 4°C and 24°C. Two temperatures of 10 and 22 were used for germination. Germination at 10 and 22 without hydropriming were used as control. Germination test was performed according to methods of the International Seed Testing Association (ISTA, 1999). Seeds were considered germinated when radicles emerged at least 2 mm. Seedling quality was evaluated after 14 days in respect to the number of normal seedlings. Parameters related to germination, such as maximum germination (G_{max}) and mean germination time (MGT), Germination rate, root length, shoot length, root dry weight and shoot dry weight were measured. Data were analyzed using MSTATC program. Probability of significant differences among treatments and interactions by Duncan test ($p < 0.05$) were used to compare means within and among treatments. Results showed that hydropriming increased germination rate at both temperatures. Germination was faster at 22°C than 10°C. Germination was higher in 10 °C rather than 22°C. hydropriming at 24°C followed by germination at 10 °C showed the most germination (100%) in compared to priming at 24°C and germination at 22°C (24% germination). Generally high temperature of hydropriming (24°C) and low temperature of germination (10 °C) was the best combination for Balangu germination.

References

- [1] Ghassemi-Golezani, K.; Chadordooz-Jeddi, A.; Asrollahzadeh, S.; Moghaddam, M.. *Hort. Agrobot. Cluj*. **2010**, 38, (1) , 109-1.
- [2] Casenave, E.C.; Toselli, M.E. *Seed Sci Tech*. **2007**, 35 (1): 88-98.