

Abstract

In order to evaluate the domestication possibility of endangered medicinal - industrial plant *Ferula assa-foetida* three distinct experiments were performed in ۲۰۱۲ and ۲۰۱۳. Pot experiment was done to evaluate the growth and initial establishment in response to sowing date and sowing depth with factorial arrangement in a randomized complete block design with ۱۰ replications in the campus Natural Resources School of Ferdowsi University of Mashhad. Also, in order to evaluate the *Ferula assa-foetida* growth in natural conditions, an experiment was done in Imam Quli village of QUCHAN in four geographical directions (the north, south, East and West-facing slopes) and the last experiment was done to evaluate the growth and initial establishment of *Ferula assa-foetida* in field conditions as split plot in a randomized complete block design with two factors of sowing date (autumn and winter) as a main plot and application of fertilizer (no fertilizer, Manure fertilizer in ۳ levels (۱۰, ۲۰ and ۳۰ ton per ha) and ۴۰ Kg per ha Urea fertilizer) as a sub plot with ۳ replications in Field Research of Ferdowsi University of Mashhad. The results of pot experiment indicated that the effect of sowing date, sowing depth and interaction of them was significant for both growth and establishment and the best planted in autumn, at a depth of ۳ cm. The effects of aspect on growth were very significant in the field and northern faced slope provided the best conditions for growing seeds of *Ferula assa-foetida*. In field experiment, no germinated plant were observed at winter sowing. The treatment of urea fertilizer had significant effect just on the number and Length of stored roots of *Ferula assa-foetida*. So maximum numbers of stored roots were been at treatment of urea and minimum numbers of them were found at ۱۰ ton per ha of organic fertilizer's treatment. Also the maximum length of stored roots found at no- fertilizer treatment and in minimum length of storing roots were been at urea treatment. In General, it is possible to domesticate the *Ferula assa-foetida* partly. The best results could be found in the pot, then at northern faced slopes at field. Finally, the field can be somewhat successful.

☒ **Keywords:** Initial establishment, *Ferula assa-foetida*, planting date, aspect, percent germination, depth of planting, fertilizer.