
(Ferula assa- foetida L.)

/ / /

/ / / /

()

/

...

(*Ferula assa-foetida* L.)

.()

.()

.()

/

.()

.()

.()

.()

.()

.()

.()

.()

.()

.()

.()

.()

-
- Episamarcandin
 - Umbelliperenin
 - Conferol

-
- Apiaceae
 - Monocarpic

.()

:()

:

/
/
/

- *Berberis vulgaris*

- *Daphne* sp.

- *Amygdalus auseri*

()

- *Zygophyllum atripolyoides*

()

- *Pistacia atlantica* subsp. *Mutica*

- *Acantholimon* sp.

- *Mentha spicata*

- *Acanthophyllum* sp.

.()

- *Astragalus eriostyllus*

- *Alhagi* sp.

- *Teucrium* sp.

- *Gundelia* sp..

- *Artemisia sieberi*

...

)
(
()

()

)
(

Minitab

)

(

= * *
= * * =

()

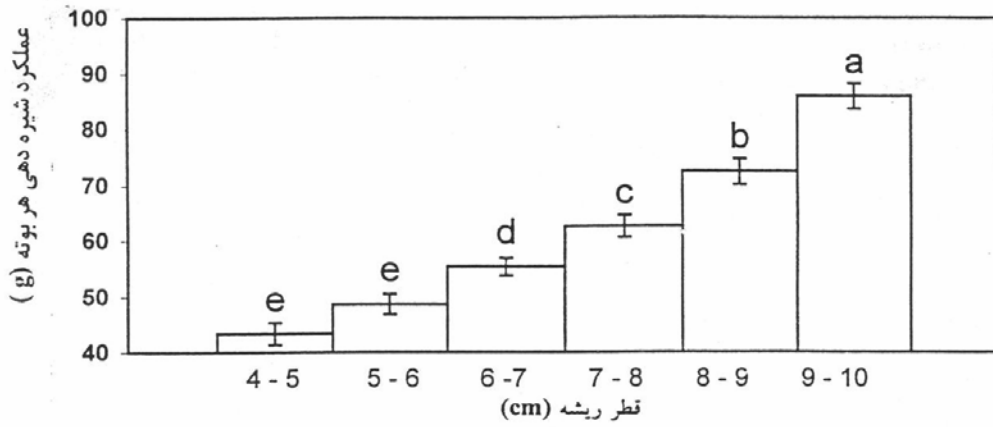
/

S.O.V	DF	SS	MS	F
		/	/	/ ***
		/	/	
		/		

CV% = /

/ / / / / /

()



/

()

...

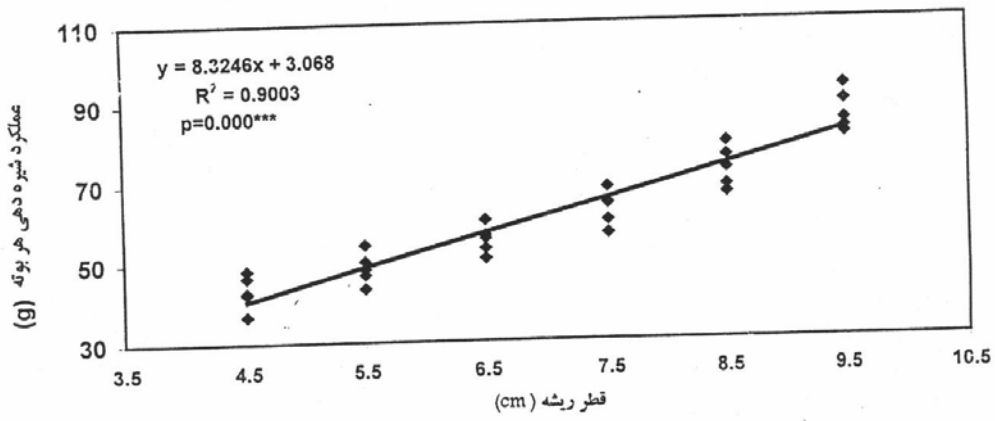
S.O.V	DF	SS	MS	F
		/	/	/ ***
		/	%	
		/		

CV% = /

/

()

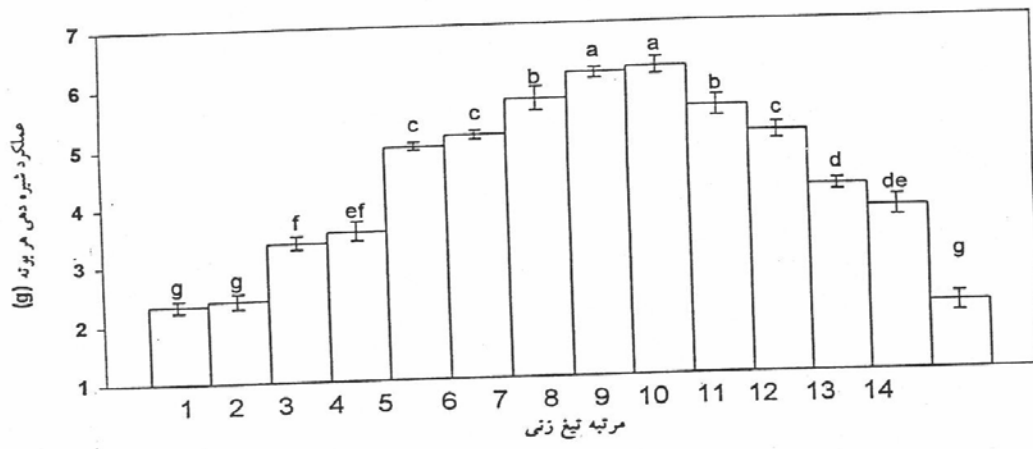
/



(X)

(Y)

()



()

)

.(

- 11- Bremness, L., 1994. Herbs. Kyodoprinting Co. Publ. London. pp. 289.
- 12- Eighner, D. & D. Scholz, 1998. *Ferula assa-foetida* and curcuma longa in traditional medical treatment and diet in Nepal. *Journal of Ethnopharmacology*, 67: 1-6.
- 13- Kaajimoto, T., K. Yahiro & T. Nohara, 1989. Sesquiterpenoid and disulphide derivative from *Ferula assa-foetida*. *Phytochemistry*, 28: 3-17.
- 14- Nassar, M., E. Abu Mustafa & A. Ahmed, 1995. Sesquiterpene coumarins from *Ferula assa-foetida* L. *Phyarmazie*, 50: 766-767.
- 15- Noleau, I., H. Rochard & A. S. Peyroux, 1991. Volatile compounds in leek and asafoetida. *Journal of Essential Oil Research*, 3: 241-246.
- 16- Rajanikanth, R., B. Ravindranath & M. L. Shankaranarayana, 1984. Volatile polysulphides of asafoetida. *Pytochemistry*, 23: 899-900.
- 17- Sefidkon, F., F. Askari & M. Mirza, 1998. Essential oil composition of *Ferula assa-foetida* L. from Iran. *Journal of Essential Oil Research*, 10: 687-689.

A Study of the Effect of Root Diameter and Incision Time on Gum Yield in Medicinal-Rangeland Asafoetida (*Ferula assa-foetida* L.) Plant

R. Omidbaigi¹

M. R. Pirmoradi²

Abstract

Asafoetida (*Ferula assa-foetida* L.) belongs to cryptogam's phylum, angiosperm sub-phylum, dicotyledons class, dialypetals order and Apiaceae family. It is a herbaceous, perennial and monocarpic plant. The flowers appear only once during the life cycle of the plant. In the root is accumulated the resin. The resin which is through incision secreted of the root has medicinal properties. It is used as vermicide as well as medication in treatment of insomnia. This study was carried out in the rangelands of asafoetida (*Ferula assa-foetida* L.) in Khomrout located in Zarand, Kerman province. The main aim was to find out the correlation between root diameter and resin yield and also the effect of number of root incision on resin yield the statistical design was a complete randomized one with five replications. The results indicated that root diameter significantly affected resin yield Incision methods also affected resin yield significantly. By increase in root diameter resin increased. Mean resin yield per plant was 43.34, 48.62, 55.26, 62.54, 72.38 and 85.90 g from roots of 4-5, 5-6, 6-7, 7-8, 8-9 and 9-10 cm diameter respectively. Incision time also significantly affected the resin yield. There was an increase of resin observed during the first 9 incision operations and then declining up to the 14th. Incision of larger diameter roots (6 to 10 cm) and incision for the beginning nine times is more feasible and therefore recommended.

Keywords: Asafoetida (*Ferula assa-foetida* L.), Incision, Exploitation, Medicinal plant, Resin, Root diameter

1- Professor, Faculty of Agriculture, Tarbiat Modarres University, E-mail: romidbaigi@yahoo.com

2- Former Graduate Student, Faculty of Agriculture, Tarbiat Modarres University