
Atriplex halimus *Atriplex canescens*

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A. halimus *Atriplex canescens*

Atriplex canescens

A. halimus

A. halimus *Atriplex canescens*

A. halimus *Atriplex canescens*

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A. repanda

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A. canescens

A. halimus

A. halimus *A. canescens*

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% *Atriplex prostrata*

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A. halimus *A. canescens*

A. canescens
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A. halimus

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$$VGI = \sum G / t$$

:G :VGI

:t

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(SPSS Inc.) SPSS10

(Kolmogorov-Smirnov)

(Levene Test)

$\arcsin \sqrt{\%}$

(ANOVA)

Tukey-HSD

Post-hoc

EXCEL

A.

A. halimus canescens

<i>A. halimus</i>		<i>A. canescens</i>	
Ms	F	Ms	F
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ns / / * ***

A. canescens

A. canescens

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A. halimus

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A. halimus

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A. canescens

A. canescens

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A. halimus

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A. halimus

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A. halimus *A. canescens*

A. <i>halimus</i>	A. <i>canescens</i>	A. <i>halimus</i>	A. <i>canescens</i>	A. <i>halimus</i>	A. <i>canescens</i>	A. <i>halimus</i>	A. <i>canescens</i>		
/ a	/ ab	/ a	/ b	/ a	/ a	a	/ a		
/ a	b	abc	/ ab	/ bc	/ b	bc	/ ab		
/ a	/ b	ab	/ a	/ cde	/ cd	/ cde	/ bcde		
/ a	/ ab	abc	/ a	/ cde	/ f	cde	/ f	()	
a	/ ab	ab	/ a	/ bc	/ ef	/ bc	/ def		
/ a	/ ab	ab	/ a	/ g	/ de	/ g	cdef	()	()
/ a	/ ab	/ a	/ a	/ fg	ef	/ fg	/ ef	()	()
/ a	/ b	/ bc	ab	bc	/ bc	bc	/ abc		
a	/ ab	abc	/ ab	/ def	/ bc	/ def	/ abcd	()	
a	/ a	/ ab	/ ab	/ fg	/ bc	/ fg	/ abc		
/ a	/ ab	ab	/ ab	/ ef	ab	ef	ab		
a	/ ab	/ bc	/ ab	/ ab	/ b	/ ab	/ ab		
/ a	/ ab	abc	/ ab	/ bc	/ bc	bc	/ ab	()	
/ a	/ ab	ab	/ ab	/ cd	/ bc	/ cd	abc		
a	/ ab	/ bc	/ ab	/ cd	/ bc	/ cd	abc		

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A. canescens

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A. cordobensis

A. canescens

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A. canescens

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A. repanda

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A. halimus

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A. canescens

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A. canescens

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A. cordobensis

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A. halimus

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A. semibaccata *A. repanda*

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A. nummularia

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% / *A. nummularia*

Atriplex griffiti

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A. canescens

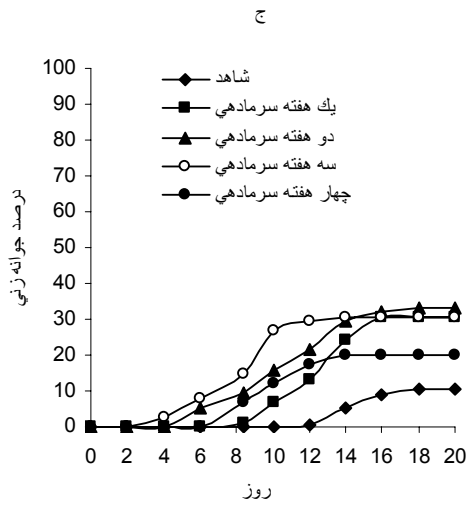
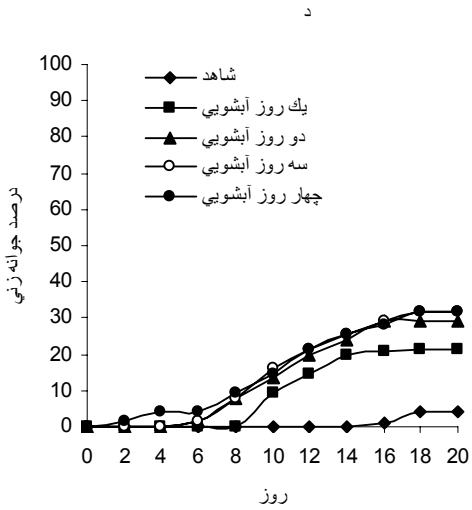
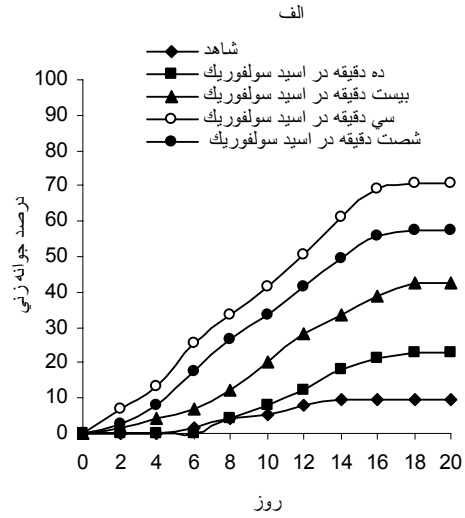
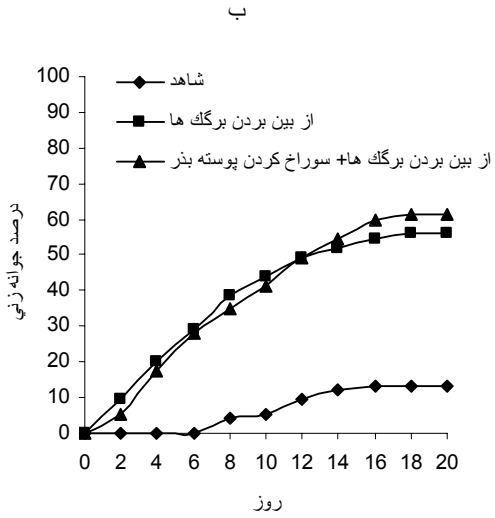
A.

halimus

Atriplex canescens

A. halimus

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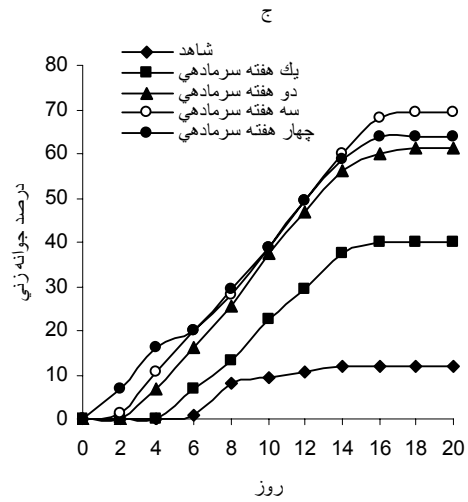
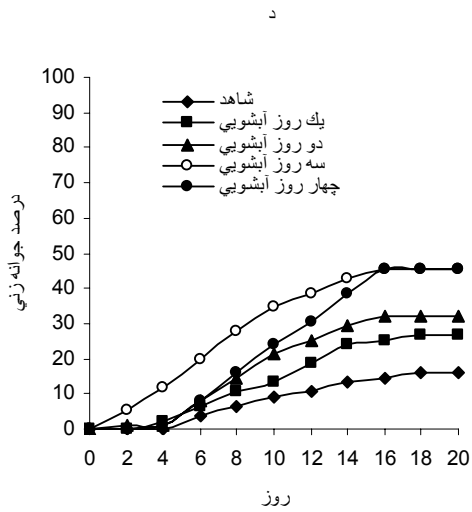
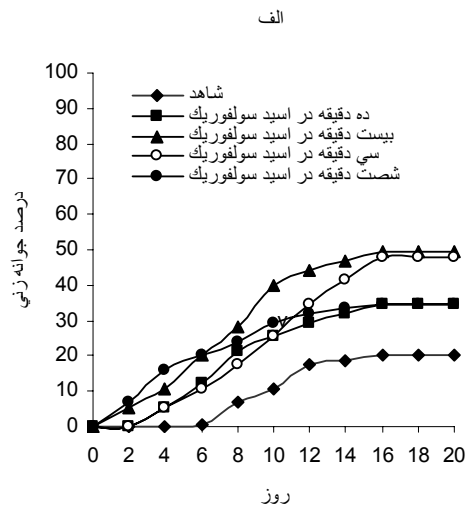
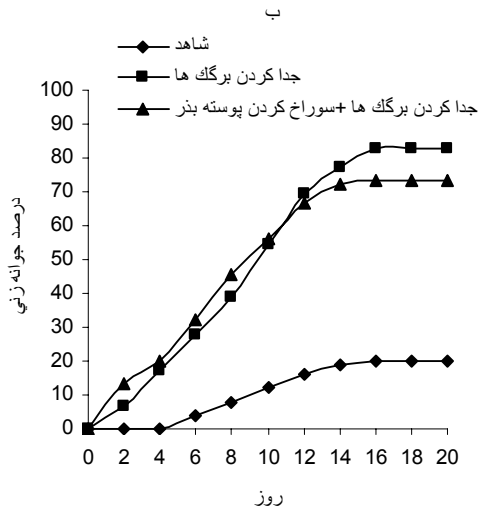
A. canescens

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A. halimus

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Effect of sulfuric acid, debracteols of seed, stratification and leaching treatments on seed dormancy breaking of *Atriplex canescens* and *A. halimus*

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Abstract

Germination of different *Atriplex* species seeds needs especial treatments to have acceptable germination. In this study were tested different treatments on two *Atriplex* species seeds. Laboratory experiments were conducted to evaluate the effect of chemical scarification using 90% sulfuric acid for 10, 20, 30, and 60 minutes; mechanical scarification using debracted and debracted with testa pierced of seeds; stratification for 1, 2, 3, and 4 weeks at 6°C; and leaching for 1, 2, 3, and 4 days on seed germination of *Atriplex canescens* and *A. halimus*. Effective methods for breaking dormancy of *A. canescens* seeds were scarification by 90% sulfuric acid for 30 min, and debracted of seed. In *A. canescens* maximum rate of germination was observed using 90% sulfuric acid for 30 minutes. In *A. halimus*, scarification with 90% sulfuric acid for 10, 20, 30 and 60 min were not effective for breaking seed dormancy because of damaged on embryos. In contrast, maximum seed germination and rate of germination were observed in mechanical scarification by debracted. In *A. canescens* and *A. halimus* leaching of the seeds for 1, 2, 3, and 4 days had the little effect on seed germination and rate of germination.

Keywords: Seed germination, Germination velocity, *Atriplex canescens*, *A. halimus*

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