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(NaCl)

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(CaCO₃)

(CaSO₄)

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(WE)

(S.A.R)

(EC)

(P.C)

(E-mail: mr_ekhtesasi@yahoo.com)

// : _____ // :

- Wind Erosion Meter (W. E. M.)
- Wind Erodibility
- Pressure Consistency
- Electrical Conductivity
- Sodium Absorbtion Ratio

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- Kavir
-Krinly
-Epan dage de glacies

-Salinization
-Wind erosion
-Sebkha

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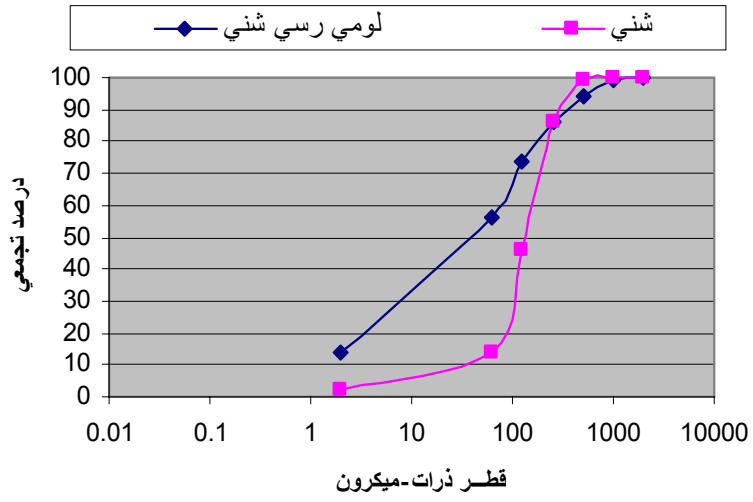
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pH	EC	S.A.R	(meq/lit)	(meq/lit)	(meq/lit)				(meq/lit)			
					HCO3-	CO3--	CL-	SO4--	Ca++ + Mg++	K+	Na+	
<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>		<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>	
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	/ (ab)		/ (b)
	/ (abc)		/ (b.c)
	/ (abc)		/ (b.c)
	/ (bc)		/ (c)
	/ (c)		/ (d)

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	/ (a)		/ (a)
	/ (a)		/ (ab)
	/ (ab)		/ (ab)
	/ (bc)		/ (ab)
	/ (c)		/ (ab)
	/ (c)		/ (a)

(EC)

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	/ (a)		/ (a)
	/ (b)		/ (b)
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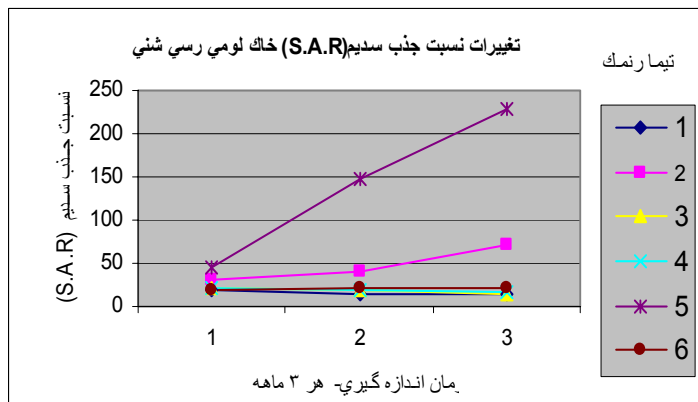
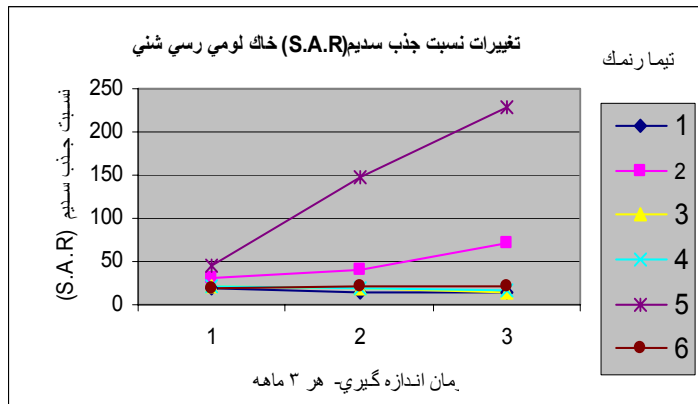
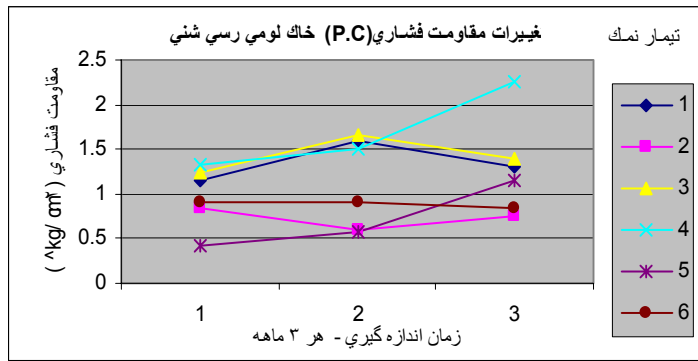
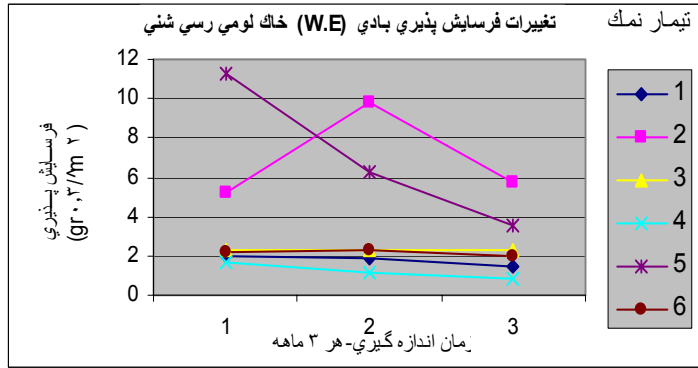
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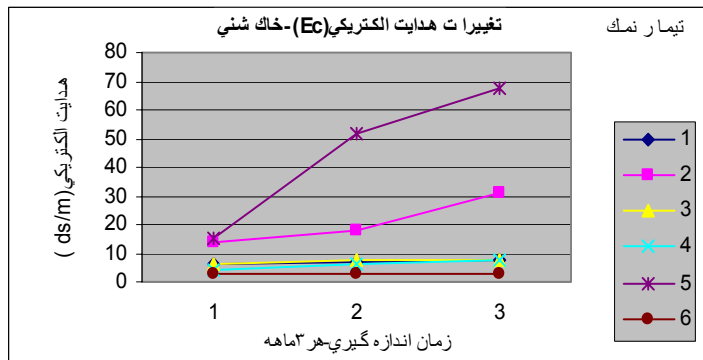
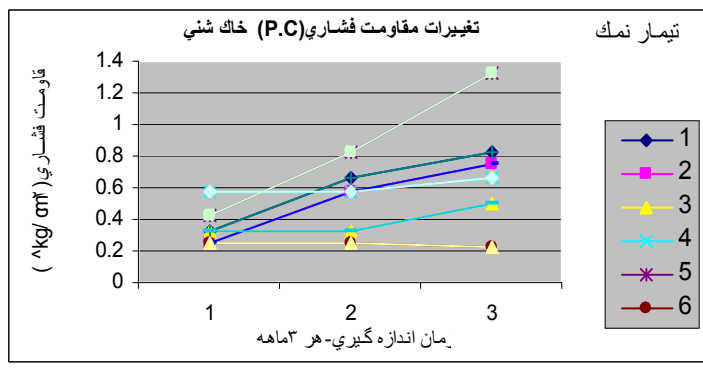
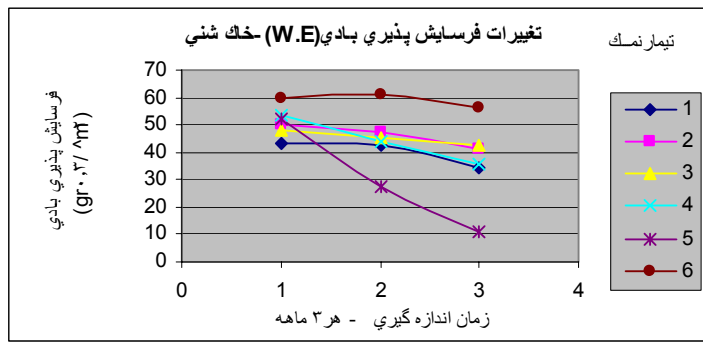
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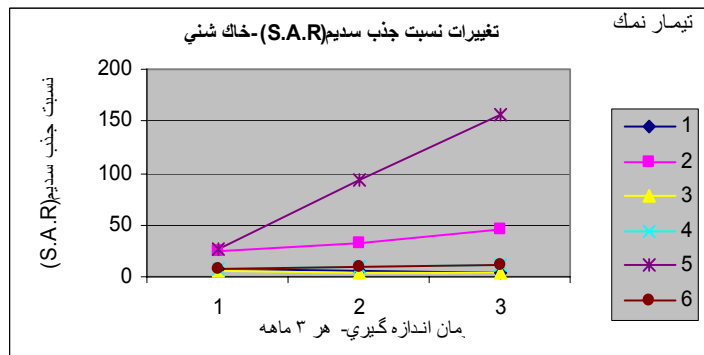
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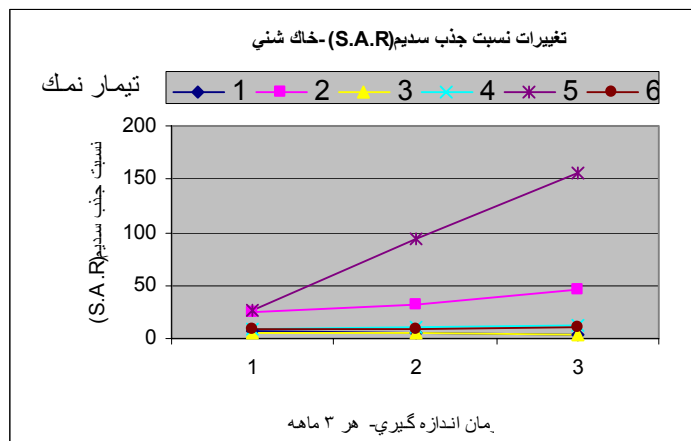


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Effects of Salts on Erodibility of Soil by Wind

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M. H. Emtehani⁴

Abstract

Wind erosion is a main problem in arid zones, such as Yazd province. Every year, over 20,000 m³ dust falls down on Yazd city, an area of about 7000 hectares. 15% of these materials are variety of salts, specially halite, gypsum and lime. The origin of these salts is evaporation of salty water and deposition of salts on the subsoil. Studies indicate that each year about 15 to 45 ton salts precipitate on subsoil. Then, the salts transform to crystals, increasing the susceptibility of soils to wind erosion. In this project, the effects of three major salt types (i.e., halite, gypsum and lime) on wind erodibility changes of two kinds of soil textures (i.e., loamy clay sandy and sandy) were investigated.

After every 3 months, the soils were irrigated by 5 kinds of salt solutions. Changes in soil erodibility potential (AP) were determined using wind tunnel, under wind speed of about 12 m/s at 20 cm height. Finally, data were collected using split-plot design over the location and time and analyzed by SAS software. Then, data means were compared by Duncan multiple range test.

Results indicate significant differences between the effects of salts applied in this research. The results indicated double effects of salts on wind erodibility of soil at various density. Low density of halite increased wind erodibility whereas high densities of halite decreased wind erodibility as it formed salty crust on the soil surface. Voiceovers, gypsum and lime at low densities decreased erodibility of soil by wind. However, at high densities, they changed to crystal, finally leading to hollowness and increasing soil wind erodibility.

In this research, other variables including pressure consistency of the soil surface (PC), Electrical Conductivity (EC), Sodium Absorption Ratio (S.A.R) were also studied.

Keywords: Salts, Halite, Gypsum, Lime, Wind erosion, Soil wind erodibility, Soil texture, Wind Pressure consistency

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