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) TWINSPAN

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PCA

pH

PCA TWINSPAN :

(E-mail: j_mahmoudi @yahoo.com)

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() TWINSpan

TWINSpan ()

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- Kuchler
 - Hill *et al.*
 - TWINSpan (two way indicator species analysis)

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TWINSpan

(pH)

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PCA ()

TWINSpan

windows

PC-ORD

PCA

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- Carl Pearson
 - Hathelbing
 - Orloicy
 - PCA (Principal Component Analysis)

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- Pseudospecies
 - Sorenson
 - Auger

		PCA
()	()	
	<i>Oplismenus undulatifolius</i>	
	<i>Buxus hyrcana</i> ()	
	<i>Ficus carica var genuina</i> ()	
	<i>Rumex acetosella</i> ()	()
()	<i>Pteris cretica</i> ()	
	<i>Pterocarya fraxinifolia</i>	
()		TWINSpan
	<i>Athyrium filix-femina</i>	
) <i>Carpinus betulus</i> ()	()
	<i>Pteris cretica</i> ()	
	<i>Carpinus betulus</i> ()	
<i>Ficus</i> ()	<i>Alnus glutinosa</i> ()	
	<i>Pteris dentata</i> ()	<i>carica var genuine</i>
		TWINSpan
		TWINSpan
		() <i>Pterocarya fraxinifolia</i> ()
		<i>Rubus persicus</i>
		<i>Carpinus</i> () <i>Ilex spinigera</i> ()
		<i>Lamium album</i> () <i>betulus</i>
		<i>Athyrium filix – femina</i> ()
	PCA	

- Kent et al , Ludwing et al.

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TWINSpan

	()	()
()	<i>Pterocarya fraxinifolia</i> <i>Rubus persicus</i> -	<i>Ilex spinigera</i> <i>Carpinus betulus</i> <i>Lamium album</i>
)		<i>Athyrium filix-femina</i>
()	<i>Oplismenus undulatifolius</i>	<i>Buxus hyrcana</i>
()	<i>Ficus carica var genuina</i>	-
()	<i>Rumex acetosella</i> -	<i>Pterocarya fraxinifolia</i> <i>Pteris cretica</i>
()	<i>Athyrium filix-femina</i> -	<i>Carpinus betulus</i> <i>Pteris cretica</i>
()	<i>Carpinus betulus</i> - -	<i>Alnus glutinosa</i> <i>Ficus carica var genuina</i> <i>Pteris dentata</i>

PCA () b () a

a,b			
SPb,SPa	%	a,b	()
C/Na,C/Nb		a,b	
Ka,Kb	p.p.m	a,b	
OCa,OCb	%	a,b	
EBa,EBb	gr	a,b	
Pha,Phb	-	a,b	
TNa,TNb	p.p.m	a,b	
ECa,ECb	ds/m	a,b	
Pa,Pb	p.p.m	a,b	
CECa,CECb		a,b	
Sanda.Sandb	%	a,b	
Claya,Clayb	%	a,b	
Silta,Siltb	%	a,b	
TNVa,TNVb	%	a,b	
C/Pa,C/Pb	-	a,b	

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PCA

PCA

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pH

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PCA

Kb Ka C/Na SPb

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Eba Ocb

ECb , ECa , Ebb,C/Pb C/Nb , TNa PHb

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TNVa Sanda

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C/Pa PHa Siltb Silta

TNVb Clay%a Pb Pa Clay%b

CECb Spa CECa

Ficus carica

Sandb,EBa,OCb

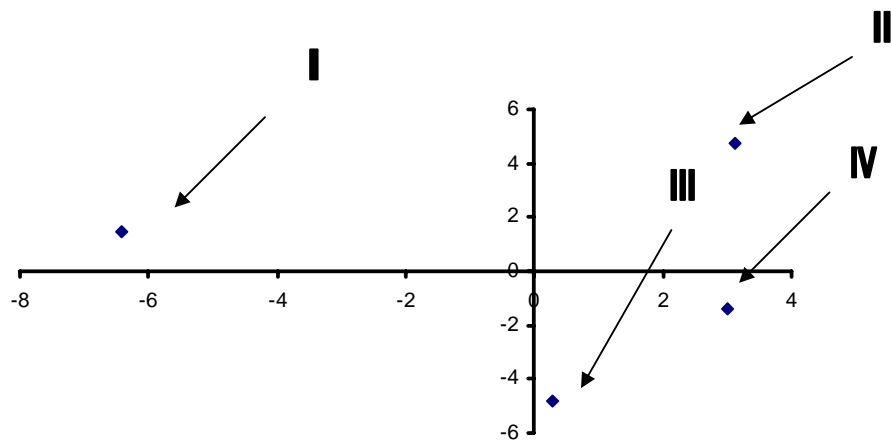
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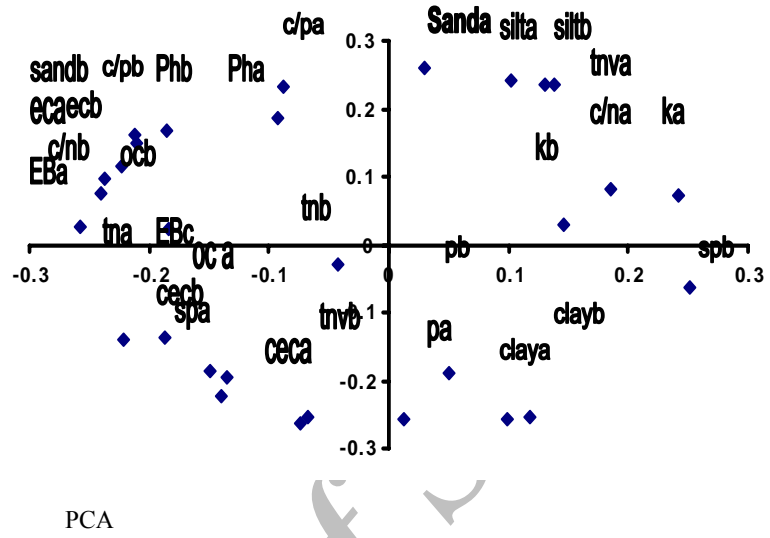
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An Acquaintance with the Relationship between Plant Ecological Groups and the Soil Characteristics in a Kelarabad Plain Forest(Chaloos)

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E. Adeli³

R. Rahmani⁴

Abstract

In Kelarabad plain forest with an area of ۰۹,۳۹ ha, information and data about vegetation (herbs and bearing seedling species) were collected from ۷۷ sample plots (۷.۰m×۷.۰m) which were then analyzed by using Bran-Blanquet combined scale and through use of TWINSpan program. The data were classified to determine ۴ ecological groups. Some physical, chemical and biological characteristics of soil, such as texture, SP, EC, TNV, %OC, N, P, K, pH, CEC, and earth worm biomass were determined. By use of PCA analysis, the relationship as well as distribution in each ecological group of environmental factors were determined with respect to the ۱st and ۲nd axes separately. It was noticed that the ۱st and ۴th ecological groups had the highest correlation with the ۱st axes whereas ۲nd and ۳rd ecological groups demonstrated the highest correlation with the ۲nd axes. pH increased from the ۱st group toward the others. Each of these four groups can be identified by the following environmental factors: earth worm biomass, OC% and Sand% for the ۱st group; Sand% and Silt% in the ۲nd group; P and Clay% in the ۳rd group, K in the ۴th group. So it is concluded that physical characteristics influence the most effects on formation of ecological groups in Kelarabad plain forest.

Keywords : TWINSpan, PCA, Plain forest, Soil characteristics, Ecological groups, Kelarabad.

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