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Research Article

FIXING COMPARISON WIND SEDIMENT WITH TAMARISK SPECIES SHAHI, TAGH AND ATRIPLEX OF DESERTIFICATION IN THE SISTAN REGION

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ABSTRACT

Presence of active sand dune and sand deposits in north of Sistan & Baluchistan province accompanied with crisis such as drought has resulted in environmental problem condition. Therefore implementing of combat desertification project is very important. For this purpose, in this area, has been used of projects such as planting, mulching and both composition. From endemic species we can notice to Tamarix aphylla, Haloxylon.sp and Atriplex.sp. For this study has used of natural resources organizations statistical documents between 2000-2006. After analysis of result of first, second and third years. We resulted that, Tamarix plants in regard of living and stabilized area were more effective and then Haloxylon was in second ranked, and Atriplex.sp cause of its sensitivity to drought tension is in third position. Furthermore the last species as accompanied species with Tamarix.sp are used. But it's using with Haloxylon.sp leads to Atriplex. Sp vanishment. We resulted that, for this purpose management of hand plant forest would be necessary.

Keywords: Sand Deposits, Combat Desertification, Planting, Sistan Basin

INTRODUCTION

Given the importance of the issue of desertification, desertification projects, in plain critical points on the agenda of Natural Resources and Watershed is located in Sistan and Baluchestan. In the meantime, projects, mulch with a nursery, a compilation project, its position in the sand fixation, has been highlighted. This paper compares the survival of planted seedlings and established wind Sediment, the species tamarisk Shahi, Tagh and Atriplex projects desertification and sand fixation, is in the region.

Land affected by wind erosion plain, with mulch, temporarily, been established, then the nursery, in the surrounding hills and land erosion, by species tamarisk Shahi, Tagh and Atriplex are final consolidation. Given that this species has been consistent in this area, according to the climatic conditions, shortage or lack of rainfall and frequent sand storms blowing, the need to use them, it is important. Because it is resistant to drought, can require less water, before being buried by sand, the conditions are provided, they will continue to survive and live and grow reasonably have reached. In this regard, studies to establish wind Sediment, entitled "Studies of Sistan Plain desertification" done.

MATERIALS AND METHODS

Sistan area (northern province) 15,197 square kilometers, which is equivalent to 1.8% of the area of the province. The geographic range of 60 degrees to 61 degrees 50 minutes 15 minutes 30 minutes and 5 minutes east longitude and 31 degrees 28 minutes north latitude. The North and East of the country, south of the city of Zahedan, and the West and North-West to South Khorasan province Lut and limited. In the province of Sistan, trifocal critical wind erosion, namely: Nyatk, there Jzynk and Shelah. The total area of about 252,453 hectares to be included. The center of the surface area of about 655,688 hectares of land in the area, which includes residential, municipal, agricultural land, etc. are affected. Study area, an area of low rainfall, with an average rainfall of 50 mm, with local winds and grueling, showery precipitation, relative humidity is very low, which is due to the drought, rainfall is minimal. The maximum temperature

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at 4 $^{\circ}$ C and 48 $^{\circ}$ C. The regional climate is determined on the basis of Mbrvzhh climate, warm and dry. Of soil, sand and the vegetation that winds around 5%, with high speed and poor vegetation, soil erosion has provided the platform. Classified according to wind speed, wind zone, a minimum speed of 10 to 20 Kylvmtrbr hours to complete hurricane speeds in excess of 120 hours Kylvmtrbr, classified. It rose from the northwest to the southeast. Although winds with different directions in the day, the area is also affected.

This study is the result of field experience and operational statistics experts established Department of Natural Resources and Watershed province gravel, mulch and planted seedlings in the field. With regard to the factors and conditions in the region and focus on desertification activities and status geomorphological facies, ranging from sand dunes, Sistan Plain and desertification project data available at the Office of Natural Resources and Watershed area, is studied. The data extracted were evaluated. However, to use this data, in the same places, the natural, climatic characteristics of the species, were tested. In this study, the same places, at the epicenter of the crisis Nyatk, for each species is discussed. Nursery with this species, after spraying, mulching, on the sand dunes, as has been done, that two-thirds of the height of the hills and flat land erosion, covering the data to be collected, that all three species have the same requirements. After mulching and temporary stabilization, nursery operations, the order is placed. Due to the climatic conditions of the region, should, in the first field, the nursery. In order to establish the plant, at least two years, the operation and maintenance of irrigation for the response of species to be operational. In the first year, 12 of sprinkling irrigation in any period of 50 liters and in the second year, 10 of sprinkling irrigation in any period of 50 liters and in the third year, 8 of irrigation water per cycle; 50 liters water for crop irrigation is used. In order to prevent degradation of grazing areas and the area under the protection of the enclosure is located. After the selection of the study area, the markup of 50 trees of each species, and in their case, measuring the stability and survival were examined. Data were collected using SPSS software, the significant level of 0.05 (95% confidence) were tested.

Shahi Tamarisk

Shahi tamarisk, a huge tree, with a height of 10 meters, the leaves are needle-articulated, in most years, the flowers do not appear. In these flowers appear once every 5 to 6 years. In the tiny, fluffy flowers blooming in spring in the upper branches of the tree appears to purple to red. Shahi tamarisk tree is very hardy and adaptable, to the surrounding farms and desertification activities are used as a carminative.

Haloxylon

Such a height of 4 to 6 meters with a smooth white trunk and fleshy succulent leaves are needlearticulated. White flowers in autumn, become winged fruits and seeds, the wind shifted and it provided the possibility of fertility. The species in desert sand dune stabilization and rehabilitation of desert lands are used. This kind of beach land in desert and South, East and center of light to medium soils and grows deeper.

Atriplex

Therefore, care should be grazing as is every few months. The species in arid, semi-arid, saline soil and clay gravel desert lands of the South, East and center of the country, grow and develop.

RESULTS AND DISCUSSION

Results

Table a survival factors and average wind Sediment consolidation area (in square meters) of trees within the project has been proposed for the survival of survival at the end of the first, second and third, the implementation of the project. Damage, which leads to the loss of leaves and stems in the first place-the young and the base itself, is gone. But the remarkable thing was that some of the basic natural and Tamarix aphylla that existed before the mulch at the project site. But the natural Atriplex operation of mulch, lost and only a few of them remained in the area. Also, comparison area surrounding the project, without mulching operations, implementation of desertification, was made solely by the nursery. During the first two years, a large number of plants, the wind erosion of sediment transport caused by local winds destroyed.

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Table 1: During the winter period,	survival and consolidation of	wind Sediment plants according to
the species		

Timar	Shahi tamarisk	Haloxylon	Atriplex
Shahi tamarisk		0.0	0.0
Haloxylon	0.0		0.0
Atriplex	0.0	0.0	

Parameter	Autumn	First year		Second Year		Third year	
Species	period (months)	Survival	Consolida tion area (m ²)	Survival	Consolida tion area (m ²)	Survival	Consolidatio n area (m²)
Shahi tamarisk	Evergreen	97 %	4.2	100	8.01	100	16.02
Haloxylon	Evergreen	94 %	0.6	100	2.34	100	4.68
Atriplex	6 month	77 %	0.27	73.9	0.36	70.4	0.72

Table 2: Analysis of variance

Table 3: Level of significant differences between species

Source changes	The sum of squares	Mean square	Degrees of freedom	F	sig
Timar	369.3	123.09	9	1227.06	0.00
Block	60.3	60.15	1	599.61	0.00
Interaction	38.88	12.96	9	129.15	0.00
Error	69.84	0.3	696		

As was seen in the above table:

- Three treatments (species), no significant differences in Level of 5% were obtained.

- The average wind consolidation area, at the end of the first, second and third, the difference is significant.

- The interaction between treatments and blocks (species and years), the difference is significant.

- Significant differences were obtained for treatments (three species), the difference between all species, it is detailed.

Discussion and Conclusion

To stabilize the wind, the desert, the method of mulching and nursery, as the flagship project, is often used. Because of the critical situation prevailing in this region, should be the first step, followed by a temporary method was established to provide conditions for the species. However, in most places, usually after rain, the seeding is done by helicopter followed, mulching operations, the order is placed. But as was said in the study area, because the rainfall is low and insignificant and that the above conditions are not available. Mulching is the operation done, and then cares nursery and then sprinkling underway. The results of Tables 1 to 3, showed that the royal tamarisk trees, Haloxylon and Atriplex years after the first, second and third, the implementation of the project, the average area of consolidation have created a different wind, which survival and viability of 94% of the show, in between, respectively, and Haloxylon species T. king, the best species to stabilize the sand, have a good performance. Moreover the results of field operations, showed that Haloxylon, due to both surface and deep roots, after deployment, eliminates the heat and Atriplex species, during the fourth and fifth.

Therefore, you must perform after mulching, use of alternative species such as the Imperial and Haloxylon and Atriplex species such as tamarisk along the King used. Atriplex species such as Tamarix not fit together.

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