THE COMPARATIVE STUDY OF AFFORESTATION IN THE PERIMETERS OF THE AMELIORATION CALINA AND BOCŞA, CARAŞ SEVERIN COUNTY

STUDIUL COMPARATIV AL LUCRĂRILOR DE INSTALARE A VEGETAȚIEI FORESTIERE ÎN PERIMETRELE DE AMELIORARE CALINA ŞI BOCŞA, JUDEȚUL CARAŞ SEVERIN

CORNELIA HERNEA *, DAGMAR VIŞOIU*, I. CHISĂLIȚĂ*, P.I. DRAGOMIR*

**Agricultural and Veterinary University of the Banat, Timişoara, Romania*

Abstract: *The degraded lands, witch cannot be used for agriculture crop can be used for forest vegetation establishment. According to characteristic of the soil, the relief and climatic condition the species were chosen and the way to plant the seedlings were establish.*

Rezumat: *Terenurile degradate, inapte pentru culturile agricole pot fi redate circuitului forestier prin instalarea culturilor forestiere. Alegerea speciilor şi a modalității de instalare a vegetației forestiere ia în considerare particularitățile edafice ale perimetrelor de ameliorare studiate, relieful, condițiile climatice.*

Key words**:** *ecological restoration, afforestation,*
Cuvinte cheie: *reconstrucție ecologică, împăduriri*

INTRODUCTION

Complex rehabilitation of degraded land is an important forestry action. The land witch is not good for agriculture can be given to the forest land using restoration actions. There has been identified two degraded land on Calina and Bocsa places. These lands are disturbed because of intensive exploitation and like a result of successive and long term droughts for the last 10-15 years, on vegetation period. There have been constituted two perimeter of the amelioration.

MATERIALS AND METHOD

There have been made o lot of observation on the perimeters of the amelioration. There have been identified two sites, one in the perimeter of the amelioration Bocsa and the other one in the perimeter of the amelioration Vatra Satului Calina.

For all sites there has been delimited 200 mp circular control area. The control areas represent 4% from the site. There have been made an inventory of the seedlings for all of the control areas and has been calculated the survival percent of seedlings, an important estimation about the regeneration.

RESULTS AND DISCUSSION

The perimeter of the amelioration Bocsa is located on the River Barzava, on a mosaic of rocks. The perimeter is located on slope with deep erosion, between 15^0 and30^0. The soil type is typical regosol. The soil is good for *Pinus nigra, Gleditsia triacanthos, Acer campestre, Fraxinus ornus, Tilia cordata, Crataegus monogyna*. The humidity system with a low deficit in summer, the low up to middle fertility and the middle soil volume give the productivity of the soil.

The perimeter of the amelioration Vatra Satului Calina is located on the River Dognecea. The perimeter is located on the valley side with big slopes and sonny exposure.

The identified soil is erodisol with middle erosion. This soil is good for *Pinus nigra, Acer campestre, Fraxinus ornus, Prunus avium, Fraxinus excelsior, Crataegus monogyna*. The productivity of the soil is given by the humidity system with a small deficit in summer, the small to middle fertility and a small volume.

The studied perimeters of the amelioration are characterized by soil with small-middle productivity. These soils were made on a poor substrate and they are affected by different erosions. The identified sites are located on the valley side with big slopes and sunny exposures. According to this, the deficit of humidity is high in the vegetation period and the given conditions to the forest vegetation are not the best (table 1).

Table 1

The characterization of the sites and the afforestation formula adopted

No	The perimeter of the amelioration	Sites	Effective surface (ha)	Limitative and compensators stat ional factors	Soil Type	Afforestation formula
1	Bocsa	$S_{Bocşa}$	14.59	- middle soil volume - deficit of humidity in summer - low fertility	Regosol typical	50%Pin 25%Te, Ci, Fr, 25%Aj+Arb
2	Vatra Satului Calina	S_{Calina}	15.00	- small soil volume - deficit of humidity in summer - middle- low fertility	Erodisol with middle erosion	50%Pin 25%Te, Ci, Fr, 25%Aj+Arb

- Pin - *Pinus nigra*
- Te - *Tilia cordata*
- Ci - *Prunus avium*
- Fr - *Fraxius excelsior*
- Aj - accessory species
- Arb - shrubby species

On the perimeter of the amelioration Bocsa there are some surfaces with shrubby vegetation. This woody vegetation has been keep in order to prevent the erosion of the soil until the forest vegetation can be able to protect the soil. According to this vegetation will be included in the afforesttaion formula. This vegetation was eliminated in the places where the new vegetation couldn't be planted. The surface where this vegetation is found is about 0.5 ha.

For both perimeters of the amelioration the same afforestation formula with *Pinus nigra, Fraxinus excelsior, Prunus avium, Acer campestre*, accessory species and shrubby species have been chosen. The seedlings were planted in hole about 30 x 30x x30 cm. There have been planted 5000 seedlings per hectare. The shrubs have been included in a much closed mixture with other species.

The result of afforestation was been appreciated by analyzing the number of seedlings at the end of the year. According to this there have been installed 15 control areas of 200mp for each perimeters of the amelioration (Table 2 and fig. 1-2).

Table 2

Regeneration control

Planted seedlings				Existing seedlings							
Number of seedlings per ha				Number of seedlings per ha				%			
Pin	Ci, Fr	Aj+Arb	Total	Pin	Ci, Fr	Aj+Arb	Total	Pin	Ci, Fr	Aj+Arb	Total
Perimeter of the site Bocsa											
250	1250	1250	5000	1717	870	913	3500	67	70	73	70
Perimeter of the site Vatra Satului Calina											
250	1250	1250	5000	1643	840	833	3316	66	67	67	66

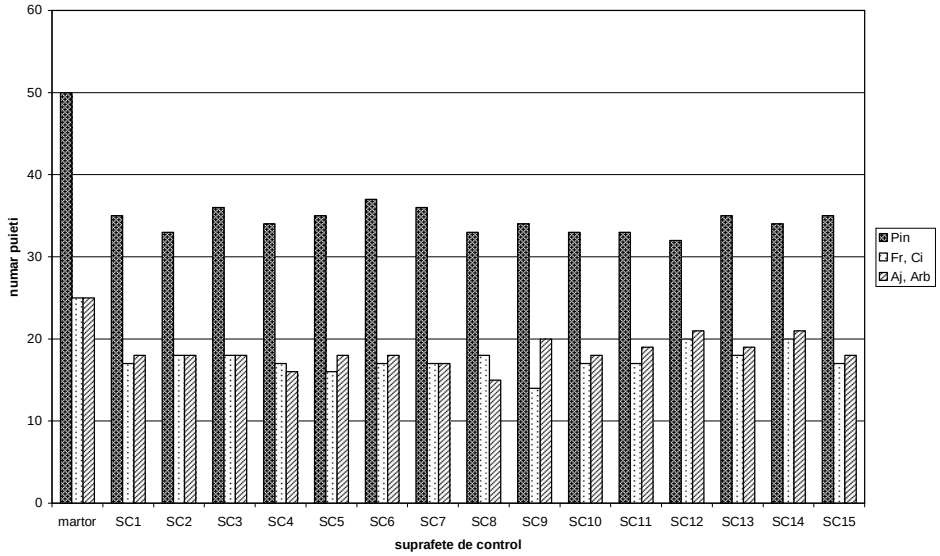

Figure1. Survival percent of the seedlings in the control surface of the perimeter of the site Bocsa

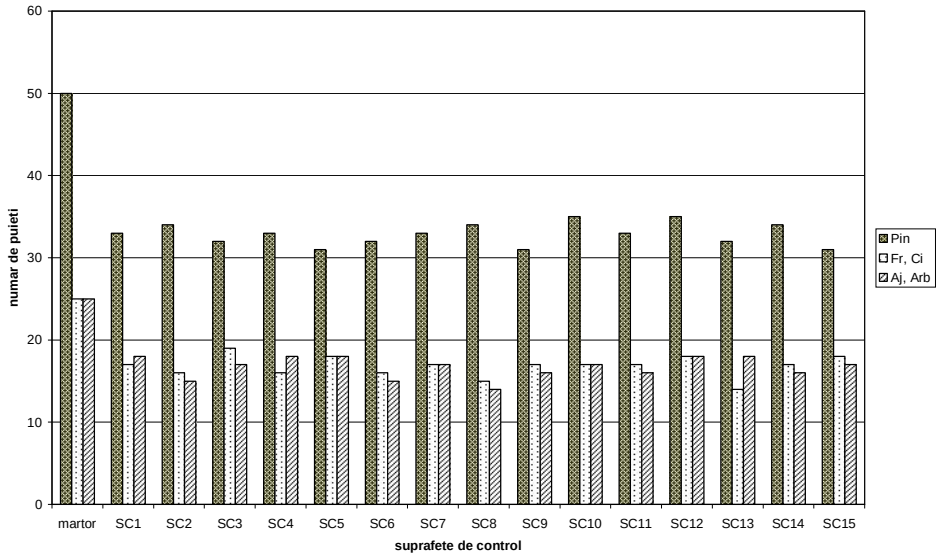

Figure2. Survival percent of the seedlings in the control surface of the perimeter of the site Vatra Satului Calina

The researches showed that the survival seedlings in the installed forest vegetation from perimeters of the amelioration Bocsa and Vatra Satului Calina were the same, maybe a better one percent for the perimeter of the site Bocsa. The 70% survival seedlings for Bocsa and 66% survival percent for Vatra Satului Calina are good percent considering the drought mentioned in the summer of 2007.

CONCLUSIONS

The installed forest vegetation in both perimeters of the amelioration showed that technical solutions proposed are in concordance with the disturbed areas. The survival percent of seedlings are important in order to establish the nest necessary cultivation activities. In the next years there will be necessary a 30% seedlings to complete the afforestation and also a lot of actions to take care about the forest vegetation.

Forest vegetation on the degraded land area from Bocsa and Calina places has immediate benefic effects and also on perspective benefic effects. This effects will involve the degraded area but also the environmental site. According to this the extreme values of temperature, evapo-transpiration, and wind speed will be down. The atmosphere and soil humidity will be increase. The degradation process will be slow down and the productive capacity will be go up. There will be possible to develop a melliferous site. Te social objectives will be protected against wind and drought and the beauty of the landscape will be improved.

LITERATURE

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