

## Research on the measurements taken (used) in the sample areas, located in unit III production Steierdorf

Mihaela Moatăr<sup>1</sup>, Lăzureanu A.<sup>1</sup>, Chisăliță I.<sup>1</sup>

<sup>1</sup>Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara, Faculty of Horticulture and Forestry

\*Corresponding author. Email: mihaelamoatar@yahoo.com

**Abstract** Also called the province of beech climate because the climate is characterized by sweet, with overtones of Mediterranean with hot, humid summers and mild winters, with snow not too high, with frequent winter frosts and frozen and low thermal amplitude. Precipitation annual average is 900 mm. The wettest months are from May to July, and the most arid, December and January. In growing season, the average monthly rainfall is 110 mm. Average numbers of snow days is 30-40 days, average number of days with snow cover, is 80 days. Mean annual evaporation is 300-400 mm. in general; soil water balance is favorable to the development of forest vegetation, the main species (fir, beech), under favorable conditions. The average annual temperature is between 6 ° -8 ° C. The hottest month is July-August (16-18 °) and the cold in January (- 3°C, -4°C). These values vary depending on altitude. Growing season average temperature is 12-14 ° C.

### Key words

measures, products, forest

Wood collection routes will be approved only evidenced ground floor to surrender, in strict compliance with approved technologies, components of the overall tractor roads, corridors and platforms funicular primary. The collection will give preference to wood used in all cases where the funicular relief conditions permit, the tractor using only land with a slope of less than 15%. Used tractor roads out - will follow the rule of wood nearby valleys. Road construction on slopes will be approved by the director of forest only in special situations without affecting the stability of slopes, avoiding certain areas out of production excessive. The routes will follow roads tractor parts without seedling usable platform width settled in no more than 4 meters, from their construction will take measures to strengthen and stabilize the slope.

### Material and Methods

Health of forests in the production unit is satisfactory. During the 2007 planning has occurred in an area of abnormal dryness 309.1 ha (12%), this action is weak destabilizing factor at 96%, moderate rate of 3% and 1% stronger. Abnormal dryness has been reported in fir, beech and beech mixed-age. In

stands that have been reported actions of destabilizing factors, forest-technical measures have been provided or improvement necessary to stop these destabilizing factors (progressive cutting, cutting garden transformation, cutting care).

In terms of geographic unit of production forests are located in the mountains Semenec – Almaj, respectively Anina Mountains. In terms fit climatic, have identified seven subtypes of soils and were determined and 12 types of resorts. Were determined 14 types of forest types are predominant:

- Fir-beech productivity mull flora of middle (m) - 833.9 ha (32%);
- Beech mountain mixed (m) - 576.4 ha (23%);
- Beech mull mountain flora of the soil skeleton (m) - 443.3 ha (16%).

Stand age class distribution (%) is as follows: 3 classes of the first category; 4 classes of the second category; 12 classes of the third category; 38 classes of the fourth category; 34 classes of the fifth category; 9 classes of the seventh category. It was established in the stands guard exploitability SUP "A" - regular forest, common items. Exploitability average age is 111 years. For SUP stands of "G" - diameter forest garden was established limit.

Table 1

Situation of degraded forested UPIII Steierdorf skins

No.	Parceling Unit		Arrangement Unit	Forested Area(ha)	Composition	No.of seedlings/ha
	No.	Name				
1	III	Steierdorf	2E	4.8	10 PIN	3400
2	III	Steierdorf	4D	0.1	10 PIN	3000
3	III	Steierdorf	4E	0.1	10 PIN	3000
4	III	Steierdorf	4F	1	10 PIN	3300
5	III	Steierdorf	5C	1.2	10 PIN	3600
6	III	Steierdorf	5G	0.1	10 PIN	4000
7	III	Steierdorf	8D	18.5	6PIN2SL2MEPL	3300
8	III	Steierdorf	8E	0,3	3PIN2SL	3300
9	III	Steierdorf	8F	2.2	10 PIN	3300
10	III	Steierdorf	8H	0.4	8PIN2SL	3300
11	III	Steierdorf	9D	0.4	10 PIN	3300
12	III	Steierdorf	11D	1.8	8PIN2SL	3300
13	III	Steierdorf	11E	2.1	8PIN2SL	3300
14	III	Steierdorf	11F	0.2	10 PIN	3500
15	III	Steierdorf	15G	1.7	8PIN2SL	3300
16	III	Steierdorf	15I	2.5	8PIN2SL	3300
17	III	Steierdorf	24C	1,6	10 PIN	3300
18	III	Steierdorf	25D	2,2	5MO3BR2PAM	4500
19	III	Steierdorf	26D	5.2	6PIN4MO	3300
20	III	Steierdorf	26E	0.5	SPIN2SL	3200
		<b>Total</b>		<b>46.9</b>		

The regulation of timber production process were considered Forestry Code, Law no.2/1987 "On the conservation, protection and development of forests, their rational exploitation, economic and maintaining ecological balance" as amended in 1990 and "Technical rules forest land "in force.

Possibility main product is the 5800 m<sup>3</sup>/year (2200 m<sup>3</sup>/year / ha SUP "A" and 3600 m<sup>3</sup>/year SUP "G"). The current possibility is 112 m<sup>3</sup>/year (2%) higher than the previous arrangement of forest area due to increased production of 100.9 ha (5%). For the decade of implementation of management plans have been provided annually to run the following works stands care:

- Releases the 0.7 ha;
- Cleaning the 24.0 ha, this will harvest 177 m<sup>3</sup>;
- Thinning on 52.8 hectares, from 1152 m<sup>3</sup> to be harvested.

It follows a 1329 opportunity byproducts m<sup>3</sup>/year (177 m<sup>3</sup>/an o f cleansing and 1152 m<sup>3</sup>/year of

thinning). Annually hygiene cuts will go to 1137.7 ha area from which to extract a volume of 996 m<sup>3</sup>. It will cover annual maintenance works on the surface of 3.9 ha which will yield a volume of 113 m<sup>3</sup>. A forestation will be carried out on 70.3 ha (59.9 ha and 10.4 ha full complement), returning an annual rate of 7.0 ha. Current density of the transmission network is 12.0 m<sup>3</sup>/ha, ensuring full accessibility of forests.

Unity III Steierdorf production has a total area. 2770.7 ha and is managed by the Forestry Department Forest Anina plant. Stands the production units are located on the western slopes of the valley Miniş. Geographically, the production unit is located in the mountains that Almăj Semenec-Anina Mountains valley, containing the upper third of the Miniş - a tributary of the Nera River. Access to the manufacturing is done on roads and Anina Oraviţa-Bozovici - Reşiţa. Administrative-territorial units which are located in forests range covered by this study are shown in Table 2.

Table 2

Administrative-territorial units				
County	City/Town	Fields related	Area (Ha-%)	
Caraş - Severin	Oraviţa	1-32.101D-105D, 112L	922,0	33
	Anina	33-92,97-99, 106D-111D.113L	1766,1	64
	Bozovici	93-96,100	82,6	3
<b>Total U.P.</b>		<b>1-113</b>	<b>2770,7</b>	<b>100</b>

Managing the forest area of 2770,7 ha is provided by the National Forest - Kerslake by Anina Forestry, the Forestry Department Reşiţa, in accordance with the rules and regulations on forest protection. In the territorial limits of the establishment

of production forests are privately owned forest. In its second production unit Steierdorf III is 22,7 ha forest, forest use two bodies established, 6 and 9 Poplar Glade Hill Beautifully presented in the following table:

Table 3

Territorial limits					
Forest		Area ha	Compozition	Age (year)	Consistency
No.	Name				
6	Plopa	19,3	5BR2CA1DT	100	0,8
96	Poiana Dealul Frumos	3,4	8 FA1BR1DT	90	0,8
<b>Total</b>		<b>22,7</b>	<b>-</b>	<b>-</b>	<b>-</b>

## Results

Have been avoided if possible, interventions that soil and ensure the permanence of the forest and not the exercise of the protective functions attributed to it. The arrangement was mainly promoted natural regeneration. In stands of S.U.P. "M" - forests subject to particular conservation, conservation work will apply. For stands of S.U.P. "A" - forests regularly established normal ranges exploitability protection because they are all classified in group I functional. Age was determined in relation to exploitation, predominant species corresponding to the composition-operability goal. The average age of exploitation, is 111 years. For stands of S.U.P. "G" - gardening forest limit were set diameter. The following table for guidance is presented by species and classes of creditworthiness, the diameters limit.

Cycle has been established for S.U.P. "A" - regular forest, common varieties, exploitation, by rounding up to age 110 years. Be made for primary and secondary products, harvesting plans and forestry regulations defining the production process. By regulating the production process were followed:

- Directing forest structure in relation to the optimum environmental conditions and socio-economic requirements;

- Creation of a fund to enable the production of long-term continuity of protection and production functions of forests and increasing environmental stability and functional effectiveness of the stands;

- The application of forestry regulations orders to stand level.

Regulation of the production process was assigned to the stands types III and IV functional categories. Stands belonging to type II functional categories are excluded from the regulation of the production process, are treated separately. The regular division of the forest, common items, and the determination was made possible indicator through volumes and surfaces, applying specific processes method and the method increasing signs of age classes. Following the automatic data processing resulting values below:

- Growth indicator is m<sup>3</sup>/year 4264.

- Possible volumes of timber to be harvested in the next 10, 20, 40 and 60 years are:

- VD = 22 157 m<sup>3</sup>;

- VE = 63 736 m<sup>3</sup>;

- VF = 266 975 m<sup>3</sup>;

- VG = 295 538 m<sup>3</sup>.

Q parameter value - an expression ratio of exploitable timber volumes within the time considered and the volumes would be required for annual harvest and continuing signs of growth opportunities is equal to Q-0.5. Stands subunit is deficient in resources. Because of this indicator is equal to the minimum possible of the following reports:

- VD/10 = 2215m<sup>3</sup>;

- VE/20 = 3186m<sup>3</sup>;

- VF/40 = 6674 m<sup>3</sup>;

- VG/60 = 4925 m<sup>3</sup>.

The indicator of possibility is 2215 m<sup>3</sup>/year.

Table 4

**Volume by species in Unit III Steierdorf**

Name of work	Area(ha)		Volume (m <sup>3</sup> )		Volume by species					
	Tota	Yearly	Total	Yearly	FA	BR	CA	MO	TE	DM
Recesses	6,6	0,7	-	-	-	-	-	-	-	-
Cleansing	240,1	24,0	1773	177	106	14	13	13	6	-
Thinning	527,5	52,8	11517	1152	432	128	68	260	14	26
Secondary products	767,6	76,8	13290	1329	538	142	81	273	20	33
Hygiene cuts	1137,7	1137,7	9956	996	521	102	122	14	63	14
<b>TOTAL</b>	<b>1911,9</b>	<b>1215,2</b>	<b>23246</b>	<b>2325</b>	<b>1059</b>	<b>244</b>	<b>203</b>	<b>287</b>	<b>83</b>	<b>47</b>

The work plan of care included all stands, according to technical rules in force, requires clearance and cleansing, regardless of slope, even when the stand composition, is only 0.8 or less (for releases). They took into account the change and exit from the stands and at other stages of development than those in which each stand is in planning, work plan so that the provisions of care to meet the actual situation on the decade. In the choice to go with thinning stands were taken into account:

- Did not set thinning in stands located on rocks, the detritus, the land with deep erosion on land with slope greater than 40 degrees, while those located substrates of flitch, sands and gravels with inclination greater than 35 degrees;

- Have not provided consistent thinning in stands with 0.8 and smaller than in the stands on ground which has been estimated that during the implementation of management plans, they will turn their consistency of 0.95 to 1.0;

- The last quarter of the life cycle of the stands, exploitation, established by age, no thinning is planned.

Felling of hygiene were set in stands that will not go through with thinning, cleaning and regeneration cuts, regardless of age, class consistency or production of the stands. Forestry will make cuts in health and regeneration stands currently, if intervention is required during the extraction of dried trees, under dry, broken or knocked down by wind or snow. Particular attention will be given to timber harvesting technologies by cutting care. It will choose technological solutions that will reduce damage to standing trees below the limits set by regulations.

Given the weight of assessing young stand development over a decade, according to the works that have provided care, Forest Department will pursue provisions specified in the arrangement on the surface, knowing that the road surfaces and volumes collected have provided a guide. Although the plan drawn up are given for each kind of works, Forestry Department is required to examine changes as a result of evolution

stands or any calamity products and adapt the plan provisions in relation to emerging needs, as required "technical standards for care and stand management.

Annual Forestry will analyze the specific situation of each stand and, in relation to this analysis, will determine the road surface and volume extracted annually. Works can be completed with care and other trees than originally foreseen by arrangement, provided that the appropriate status. Also, you can opt out of completing the work stands to care during the decade did not meet the conditions of technical standards. The papers provided care to run in the forest division will have data transformation gardening to gardening.

The duration of the arrangement expired no fires occurred in the production. The main causes that can lead to forest fires are:

- Opened fire, the unquenchable left unattended or forest workers, shepherds, the berry pickers or people who occasionally cross the forest or tourism purposes;

- Remnants of cigarettes thrown at random forest, dry litter, especially during the summer with high temperatures and prolonged drought;

- Fires extinguished, unsupervised on private land adjacent to the forest etc.

Measures of protection against devastating forest fire in both prevention and will watch fire and will consist of:

- In working in schools or at various meetings of citizens, rules to prevent and combat fires and obligations of each for their initiation;

- Complete ban on the open fire in the woods or on private land near the forest and installing warning signs at major gateways in the forest to the specific risks posed to those who will not follow the rules PSI;

- Arranging facilities for smoking and maintenance of existing ones;

- Proper maintenance of access roads into the forest (forest roads, earth roads or access paths), useful to any actions by the fire;

- Strict observance during forest-technical works PSI rules and regulations;

-Maintaining constant state of operation of necessary equipment and firefighting gear;

-Continuous monitoring by staff of the forest land, especially in times of drought, when the litter box can ignite easily, etc..

Protection against diseases and pests will be achieved by ensuring a proper sanitary condition of the forest in this respect is necessary preventive measures and repressive measures against diseases and pests when those actions exceed the bearing capacity of the forest. Attack prevention measures will be considered: promotion of natural-type stands, shelves and mixed; promoting the regeneration of the species compositions corresponding types fundamental natural-forest and local genetic forms with increased resistance; maintaining the normal density stands; carry out appropriate care work stands (recesses, cleansing, thinning, cutting hygiene);the rule of exploitation of wood; protection of plantations; streamlining access and prohibition of grazing in the forest; on-site detection of outbreaks of pests and pathogens, by observation or by direct measurements; the analysis of the development of diseases and pests.

In case of intense attacks, Anina Forestry will take all necessary measures to combat them. It will cover all the stands, especially plantations and natural generation of coniferous species that pose a greater risk as news of pest attacks.

The terminals are made of reinforced concrete. They are located at intersections parceling lines at their intersections with limited forest and the forest limit, the characteristic contour points. Although both before and after 1948, management of production forests in this unit was based on management plans, the forest-technical measures that were applied did not fund the production went to normalization.

There is currently a surplus of trees in the class and you'll age and a deficit in classes I, III and

IV, of which has negative repercussions on the process of regulating wood production. Analyzing the evolution of database development adopted at the previous arrangements, it notes that they have been updated from one stage to another in accordance with technical rules in force.

Failed to normalize production fund for the following reasons:

- Abnormal structure of 1948;
- Breach of the provisions just prior planning;
- Failure to comply with the requirements of the cuts proposed care and treatment timber harvest.

For the future we strictly enforce all the provisions of management plans for the gradual normalization of the structure and size of forest.

## References

1. Amenjamentul Ocolului Sivic Anina.
2. C.Chiriță și colab. - „Stațiuni forestiere”, Ed. Academiei, București, 1977.
3. C.Chiriță- „Pedologie forestieră”, Ed. Academiei, București, 1977.
4. Chisăliță I., 1985 – Căi și mijloace de ridicare a productivității pădurilor din cadrul Ocolului Silvic Moldova Nouă, Caraș-Severin, manuscris, Lucrările Simpozionului de la Timișoara.
5. Chisăliță I., 2000 - Cercetări privind stabilizarea și punerea în circuitul ecologic și economic a haldelor de steril de la Moldova Nouă cu ajutorul vegetației forestiere, Facultatea de Silvicultură Brașov.
6. V. Giurgiu și colab. - „Biometria arborilor și arboretelor din România”.Ed. Ceres, București, 1972.
7. Legis România: Legea nr.18/1991, Legea nr.26/1996, Legea nr. 1/2000.