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**PREPARING DRYING SCHEDULES OF *Fraxinus excelsior* L.  
BY COMPUTER PROGRAM**

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Despite the competitions of many new material and innovations of technologic period, nowadays wood material have an important place at many usage area as raw material because of their characteristics, attractiveness and beauty.

Wood material have a lot of good features such as having high resistance in spite of their slightness, easy treating, good consenting paint and shellac, insulating heat and absorbing sound. In addition, they constitute a nice and warm appearance at usage area with their appearance beauty. However, wood material has also some undesirable properties such as decaying and easily burning. If it is dry, it takes water into own structure, on the contrary, if it is wet, it gives water from own structure and changes its dimensions. Wood material as a hygroscopic substance, depends upon the heat and the relative humidity on the air, either takes water into own structure or gives water from own structure to it's environment Between 0 % and 25-33 % moisture degrees, which was defined hygroscopic moisture zone, swelling occurs with taking moisture and shrinking occur with drying in the dimensions and volume of the wood material Contemporary wood technology developed various methods, which get better undesirable wood features. Some important technical processes are drying, steam, impregnation and surface treatment

As a hygroscopic material, wood should be dried before processing, to become a reliable material It is dependent on discharging excessive water as soon as possible, to conserve its technical, aesthetic and economic characteristics. Profits of kiln-drying are; abating of materials weight; in some impregnation methods, better impregnation of wood; increasing of nail and screw-holding power; increasing of modules of elasticity, strength, hardness, wear-out strength, spreading out of voiced speed; and decreasing of elasticity and heat condition. In addition, kiln-drying is important from point of view of protection the wooden material against vegetal and animal harms; increasing of using period; better conversion; and painting, varnishing and polishing.

The success of technical-drying is mainly depended on well-prepared drying schedules. In this study a computer program, which automatically prepares the drying schedules, was formed.

Throughout the various drying steps of lumber wood material, having moisture content from initial to final, the positions of drying conditions were determined and controlled by the computer. In the establishment of this computer program related with the management of drying Muhlbock kiln-drying computer program was taken as a base and the established program was tested with the drying-trials taken from some kiln. Drying schedule of *Fraxinus excelsior* L. is given in Figure 1 and changing of moisture content, relative humidity, dry and wet temperature in Figure 2.

Time	Drying Moisture Gradient	Moisture Content	Dry Temperature	Wet Temperature	Psychrometric Dry-bulb	Relative Humidity
0	-	28	14.5	17.5	17.5	98.5
1	-	25	18.5	18.5	18.5	95.5
2	-	22	22.5	22.5	22.5	92.5
3	-	19	26.5	26.5	26.5	89.5
4	-	16	30.5	30.5	30.5	86.5
5	-	13	34.5	34.5	34.5	83.5
6	-	10	38.5	38.5	38.5	80.5
7	-	7	42.5	42.5	42.5	77.5
8	-	4	46.5	46.5	46.5	74.5
9	-	1	50.5	50.5	50.5	71.5
10	2.4	28	14.5	17.5	17.5	98.5
11	2.4	25	18.5	18.5	18.5	95.5
12	2.4	22	22.5	22.5	22.5	92.5
13	2.4	19	26.5	26.5	26.5	89.5
14	2.4	16	30.5	30.5	30.5	86.5
15	2.4	13	34.5	34.5	34.5	83.5
16	2.4	10	38.5	38.5	38.5	80.5
17	2.4	7	42.5	42.5	42.5	77.5
18	2.4	4	46.5	46.5	46.5	74.5
19	2.4	1	50.5	50.5	50.5	71.5
20	2.4	0	54.5	54.5	54.5	68.5

Figure 1. Drying Schedule of *Fraxinus excelsior* L. Prepared by Computer Program

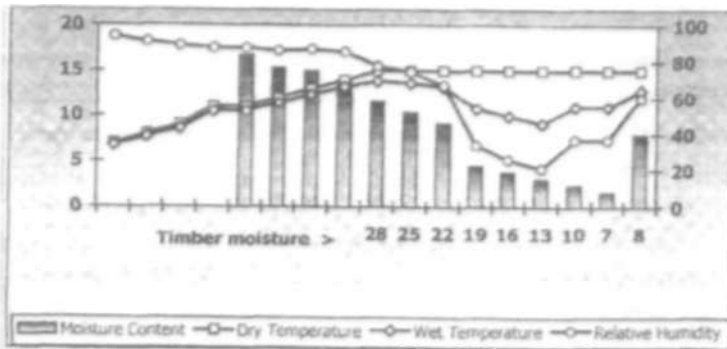


Figure 2. Changing of Moisture Content, Relative Humidity, Dry and Wet Temperature

Some differences were revealed between theoretical and practical drying periods. It was determined that, experimental method has given very similar solutions in low specific gravity softwood drying rapidly but on the other hand the solutions for slowly drying hardwood were very far

from actual values even if error portion was two times higher. As a result, it was seen that coefficients settled before are not reflecting the correct values for every tree species. In respect of experimental method, it was determined that theoretical method has given solutions close to actual solutions.

In our century, the technological innovations are used for human welfare, By teaching necessary programs to personal computers; the human needs are answered. When computer is loaded by different codes, it will run processes when and where needed.

The results given by the computer at the end of the process may not give the actual drying period. However, it can present a concept background to the user, and this will be helpful for the next planning. However a successfully applied drying program to a species, should not be expected for the same species, owing to many reasons, for examples, the differences between growing conditions and timber moisture in kiln. Since the expected and achieved results are not the same, some modifications can be applied to the programs.

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