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CHANGING FOREST STAND STRUCTURE MANAGEMENT IN THE PÁPA FOREST DISTRICT OF BAKONYERDŐ FORESTRY CORPORATION

(МОДИФИКАЦИЯ СОСТАВА ЛЕСООБРАЗУЮЩИХ ПОРОД ЗАО BAKONYERDŐ В ЛЕСНИЧЕСТВЕ PÁPA)

Были исследованы медленно растущие леса из робинии псевдоакации на площади 250 га в лесничестве Pápa ЗАО Bakonyerdő на трех пробных площадях (Egyházaskesző, Kemeneshőgyész, Magyargencs). Леса на выбранных ПП достигнут возраста рубки в течение следующего 10-летнего периода лесной таксации. Задачей работы было выяснение взаимосвязи между параметрами древостоя и индексами выхода древесины.

Introduction

We investigated weak growth black locust forests with an area of appr. 250 ha, in the Pápa Forest District of Bakonyerdő Ltd. stands around three territories (Egyházaskesző, Kemeneshőgyész, Magyargencs). Stands chosen will reach their felling age within the next 10-years-forest inventory period. Our goal was to evaluate the relationship between forest site parameters and yield index.

Material and methods

Forest inventory was based on geometric circle-sampling unit procedure. Timber volume (yield) was calculated with the bivariate function of Király. For site survey in each forest management unit a soil pit (51 pits) was opened for detailed description. From each of the four characteristic site-types soil samples were taken for laboratory measurements from 1 pit each, respectively.

Results

Although size and stand age of the individual forest plots varied, the low productivity of the sites and the low yields of the stands were common for the whole area investigated. Three-quarters of the stands had a root sprout origin with protection forest management goal. About 80 % of the stands were classified with the lowest yield class Nr. 6., and the rest of them reached only the second

Figure 1. Magyargencs 24C forestdetail (forest management unit)

Figure 2. Egyházaskesző 19D forestdetail (forest management unit)

lowest yield class Nr. 5. Single trees are characterized with low height and diameter at breast height, average yield reached only 70 m^3 per hectare.

Main soil type was the Cseri-soil (sceletic Regosol), other three soil types (gleyic Fluvisol sceletic; arenic Luvisol sceletic; arenic Luvisol) could be found with lesser extent. The sceletic Regosols are characterized with shallow rooting depth, high skeleton content and a strongly acidic soil pH (pH(H_2O) 4,5-5,6; pH(KCl) 3,4-4,3). The pH values of the gleyic Fluvisol were higher (pH(H_2O) 7,6-7,8; pH(KCl) 7,0-7,4). Roots penetrate the upper soil only to a depth of 50 cm, limited by a cemented gravel layer. Water and air management of the soil is bad, water supply from groundwater is not given. During high precipitation periods upper.

Results

(Explanation: EK: Egyházaskesző, MG: Magyargencs, KH: Kemeneshőgyész, the three territories)

Number of soilpits	Forest detail (forest management unit)	Height (m)	Diameter-atbreastheight (cm)	Crosssection of treetrunk (m^2/ha)	Timber-volume (m^3/ha)
1.	EK 19D	5,4	6,9	4,8	33,0
2.	EK 19A	13,2	14,3	11,8	94,1
3.	MG 31B	6,4	5,2	3,5	27,2
4.	MG 31A	7,1	6,4	6,3	40,8
5.	MG 30B	9,5	8,8	7,8	53,9
6.	MG 29F	12,7	13,9	12,1	94,2
7.	MG 30A	12,7	12,2	12,9	100,2
8.	MG 29D	12,4	11,8	12,1	93,6
9.	MG 36A	9,5	10,1	10,2	71,3
10.	MG 36B	8,3	8,4	8,7	58,2
11.	MG 28B	9,7	8,6	6,1	42,7
12.	MG 21A	12,7	11,8	12,0	93,7
13.	MG 28A	7,0	7,0	8,4	40,0
14.	MG 23B	11,1	10,0	6,8	50,4
15.	MG 27A	11,0	11,0	14,5	99,0
16.	MG 24C	8,1	8,2	7,4	49,6
17.	MG 27B	13,5	11,8	13,2	106,8
18.	MG 26C	9,9	13,3	12,5	86,5
19.	MG 18A	7,8	9,1	7,3	48,4
20.	MG 18C	7,3	9,8	6,5	42,5
21.	MG 24D	7,0	7,0	8,6	42,0
22.	MG 25B	6,2	8,0	6,5	43,0
23.	MG 8A	7,6	6,8	7,9	52,0
24.	MG 7E	11,4	10,7	12,5	92,7
25.	MG 7C	7,0	8,0	7,8	37,0
26.	MG 7I	3,0	2,0	0,0	7,0
27.	MG 6G	12,0	16,0	14,4	105,0
28.	MG 2D	9,0	9,0	13,1	75,0
29.	MG 2C	4,4	6,7	5,3	39,4
30.	MG 2B	6,0	6,0	7,5	34,0
31.	MG 2A	10,0	11,0	8,4	51,0
32.	MG 5B	6,0	6,0	7,7	34,0

End table

Number of soilpits	Forest detail (forest management unit)	Height (m)	Diameter-atbreastheight (cm)	Crosssection of treetrunk (m^2/ha)	Timber-volume (m^3/ha)
33.	MG 1B	6,0	7,0	5,6	20,0
34.	MG 3B	9,0	11,0	12,6	73,0
35.	MG 7D	9,2	14,4	20,0	135,3
36.	MG 5D	6,0	5,0	5,3	24,0
37., 38.	MG 10B	12,7	11,5	12,5	98,3
39.	MG 15A	13,0	19,0	11,0	86,0
40.	MG 11C	18,3	15,9	16,0	155,3
41.	MG 14C	10,1	9,9	16,7	117,7
42., 43.	MG 11D	11,3	10,6	10,6	78,5
44.	MG 14B	11,7	11,8	13,6	101,3
45.	MG 13D	11,1	10,1	8,4	61,6
46.	KH 3C	6,6	6,9	9,8	64,2
47.	KH 4C	7,2	7,0	4,6	30,3
48.	KH 3B	8,1	8,6	10,4	69,2
49.	KH 4B	7,3	7,5	4,5	29,4
50.	KH 3A	7,9	7,9	7,6	50,4
51.	KH 4A	10,5	9,3	7,4	53,0

Figure 3. Egyházaskesző 19D forestdetail (forest management unit)

Figure 4. Kemeneshőgyész 3A forestdetail (forest management unit)

Summary

Our results showed, that – with one exception – all the sites have a low productivity 5th and 6th level yield class. Weak black locust stand growth can be explained probably by the unfavourable site properties for this tree species. Most typical soil type was the "rusty-red cseri soil" (Haplic ARENOSOL Dystric, Skeletic, Arenic), with a compacted layer with more than 40 percent (by volume) of gravels within 100 cm from the soil surface, resulting in poor water balance. From the acidified topsoil most nutrient are leached, nutrient supply capacity is low.

Among the site parameters and the yield class a systematical relationship was found. Greatest impact on the yield had the reduced rooting depth, correlations

are week with humus content and estimated water holding capacity. Traditional forest site survey methods are not sufficient for accurate quantification of timber yield. Estimations can be refined with a more precise measurement of gravel content, direct measurement of water holding capacity (pF-value) as well as by the detailed evaluation of climatic data.

Based on the results, it is prudent to attempt the conversion of black locust stands to mixed deciduous stands.

Figure 5. Magyargencs 31B forestdetail (forest management unit)

Figure 6. Magyargencs 5D forestdetail (forest management unit)

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THE FECUNDITY OF THE POPLAR LEAF BEETLE (*CHRYSOMELA POPULI* L. 1758) OVERWINTERING GENERATION UNDER LABORATORY CONDITIONS

(ПЛОДОВИТОСТЬ ПЕРЕЗИМОВАВШЕГО ПОКОЛЕНИЯ ТОПОЛЕВОГО ЛИСТОЕДА (*CHRYSOMELA POPULI* L.) В ЛАБОРАТОРНЫХ УСЛОВИЯХ)

Тополевый листоед (Chrysomela populi L. 1758) – один из наиболее опасных вредителей в тополевых питомниках и в различных видах плантаций тополей по всей Европе. В работе была исследована плодовитость перезимовавшего поколения в лабораторных условиях. Перезимовавшие имаго были собраны в марте 2014 г. перед наступлением сезона спаривания. Парочки содержались при температуре 20 ºС и фотопериоде 16:8 и выкармливались листьями гибридного тополя Popolus x euramericana cv. Pannonia. В процессе исследования подсчитывалось количество яиц от каждой самки и их вес до и после яйцекладки. Представлены данные о количестве яиц и размере каждой яйцекладки, времени между яйцекладками и плодовитости имаго.