

Internationale Conference on the future of poplas culture

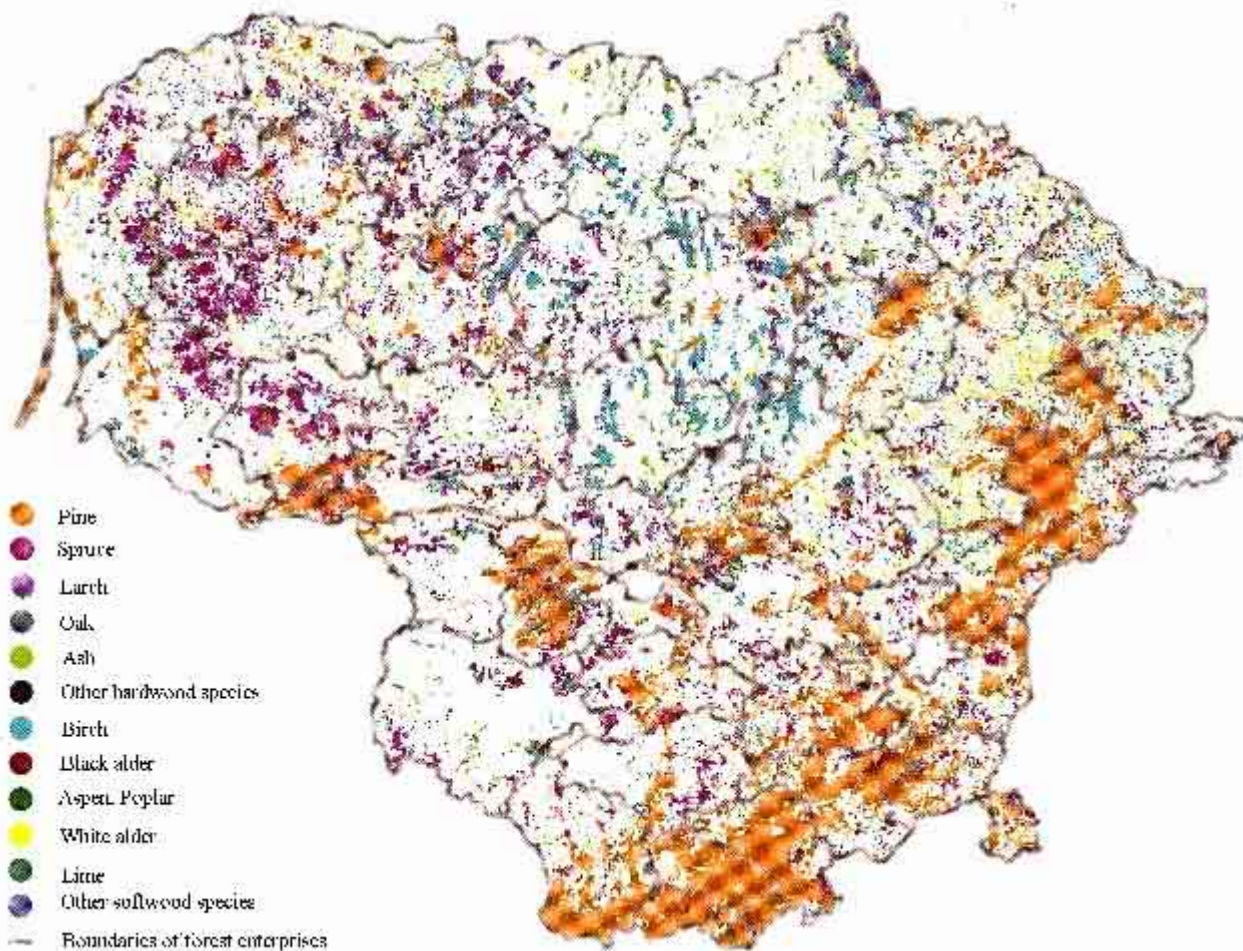
Country Report – Lithuania

Lithuania is situated at the western edge of East European plain, which is Part of the mixed forest-belt of middle climate forest zone. The northern border of hornbeam (*Carpinus betulus L*) crosses Lithuania.

The relief is plane with small hills. Sod-podzolic forest soil prevails. The land's surface is above sea level average of 99m (35-292 m.). Climate is transitional between maritime and continental. It is strongly influenced by the Baltic Sea; therefore, the climate is rather mild. Mean annual air temperature is +6⁰C (in January -4.8⁰C; in July +17⁰C). The average precipitation is 650 mm (540-930 mm) and average vegetation period lasts 175 days (169-202).

Total forest land area is 2,045,300 ha. Forest coverage in Lithuania increased to 31,3% The area covered by stands is 1,951,000 ha.

Lithuanian forest map



Total growing stock volume is increasing in Lithuanian forests. Over the last five years it augmented from 347,600 m³ to 382,600 m³. Average growing stock in 2002 comprised 196 m³/ha, while in 1998 it made up 184 m³/ha. The area of mature stands has expanded from 238,500 ha to 308,500 ha, and growing stock volume has increased from 59,4 million m³ to 77,4 million m³. Average forest area per capita increased from 0,53 ha to 0,59 ha, and average growing stock volume – from 93 to 110 m³. These indicators grow due to enlarging area of forests

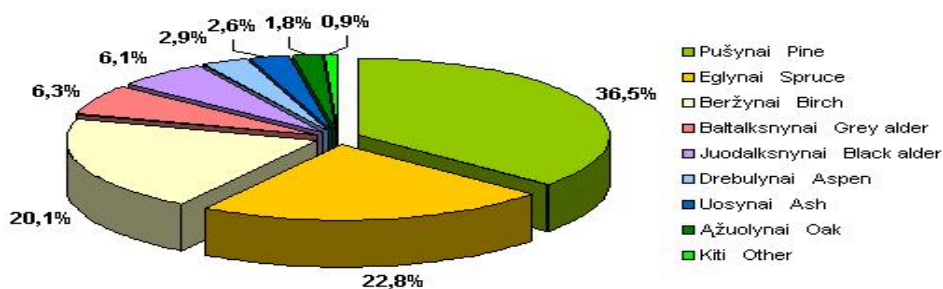
and decrease of the population. Average age of stands increased from 51 to 53 years during 1998-2002. Coniferous stands, covering 1,160,000 ha, prevail in Lithuania (59,5%), followed by soft- broadleaves (698,000 ha; 35,8%) and hard broadleaved (93,000 ha; 4,7%) stands. The area of pine stands amounts to 712,000 ha, growing stock – 164 million m³. Spruce stands cover 445,000 ha, and their growing stock totals 85 million m³. The area of spruce has expanded by 3,000 ha, but the growing stock did not increase. The area of birch stands increased by 17,000 ha to 392,000 ha during the last five years. Growing stock volume augmented by 5 million m³ and reached 66 million m³. The area of black alder stands enlarged by 11,000 ha to 119,000 ha and growing stock volume increased by 3 million m³ and reached 23 million m³. The area of grey alder expanded similarly to black alder up to 122,000 ha. Growing stock volume increased by 41% to 15 million m³ in these stands. **The area of aspen stands expanded by 5,000 ha, i.e. to 57,000 ha. The volume has risen in these stands by 1 million m³, i.e. to 12 million m³. All aspen stands are natural. There are 791 ha poplar (*populus tremuloides*) plantations in Lithuania only.**

Annual current increment in Lithuanian forest - 11,9 million m³. Annual current increment per ha -6,1 m³

Forest stands area distribution by forest types

Forest type	1000 ha	%	Others forest types	ha
<i>Pine</i>	705,2	36,6	<i>Lime tree</i>	4625
<i>Spruce</i>	445,7	23,1	<i>Hornbeam</i>	2759
<i>Birch</i>	385,4	20,0	<i>Dwarf pine</i>	1858
<i>Aspen</i>	54,6	2,8	<i>Maple</i>	1660
<i>Black alder</i>	114,5	6,0	<i>Willow</i>	1502
<i>Grey alder</i>	119,5	6,2	<i>Elm</i>	905
<i>Oak</i>	34,6	1,8	<i>Larch</i>	810
<i>Ash</i>	52,7	2,7	<i>Jack pine</i>	560
<i>Other</i>	15,5	0,8	<i>Poplar</i>	791
			<i>Common willow</i>	96
<i>Total:</i>	1927,7	100		

Forest stands area by dominant tree species



MEAN CHARACTERISTICS OF FOREST STANDS

<i>Dominant tree species</i>	<i>Area</i>		<i>Age</i>	<i>Site index class</i>	<i>Stocking level</i>	<i>Growing stock, m³/ha</i>		<i>Increment, m³/ha</i>	
	<i>1000 ha</i>	<i>%</i>				<i>All stands</i>	<i>Mature</i>	<i>Mean current annual</i>	<i>Accumulating for final felling</i>
<i>Pine</i>	711,5	36,5	63	II.1	0,74	230	295	6,3	3,5
<i>Spruce</i>	445,3	22,8	47	II.3	0,70	191	304	6,8	3,6
<i>Oak</i>	35,7	1,8	87	I.7	0,62	190	244	3,9	1,8
<i>Ash</i>	51,4	2,6	55	I.2	0,68	165	231	5,6	3,3
<i>Birch</i>	392,2	20,1	49	I.3	0,71	168	229	5,2	2,9
<i>Black alder</i>	119,5	6,1	47	I.6	0,70	193	290	6,2	3,4
<i>Aspen</i>	57,3	3,0	47	Ia.7	0,71	216	269	6,9	4,1
<i>Grey alder</i>	122,0	6,3	32	I.7	0,71	125	147	6,5	3,9
<i>Other</i>	16,1	0,8	-	-	-	-	-	-	-
<i>Total 01.01.2003</i>	1951,0	100,0	53	I.9	0,71	196	251	6,2	3,4

In 2002 roundwood supply in Lithuania augmented to 6,4 mill.m³. Major portion of this timber was harvested in local forests.

Import of roundwood increased to 104 thou.m³ in 2002. This was influenced by increased import from Belarus. 70 thou.m³ of timber were imported from this country. It made up 67% of the total volume. This volume had no influence on timber industry, because mainly pulpwood was imported from Belarus, which later was reexported. Imported volume from Russia comprised 24%, from Ukraine 8% of roundwood. Import from Russia (25 thou.m³) has insignificantly increased, while reduced amounts of oak imported from Ukraine had great influence on total import from this country, which decreased almost twice.

Local consumers purchased major part of roundwood and export made up one fifth – 1,4 mill.m³. Slightly more than half was reexported to Scandinavia – 0,8 mill.m³. Exports to other countries, i.e. Russia, Latvia and Poland were similar – at 0,2 mill.m³. Export to Russia increased by 22%, while to Poland decreased almost twice. In 2002 the role of Latvia became more important. Export to this country almost doubled. Timber for sawmills of this country comprised greater part of exported volume.

EXPORTS AND IMPORT OF ROUNDWOOD IN 2002

	<i>ROUNDWOOD EXPORTS</i>		<i>ROUNDWOOD IMPORT</i>	
	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
	1000 m³	1000 Lt	1000 m³	1000 Lt
<i>Industrial roundwood</i>	1420,4	169637	103,9	18071
<i>Coniferous</i>	886,4	111275	66,2	6804
<i>Non-coniferous</i>	534,0	58362	37,7	11267
<i>Fuelwood</i>	18,7	3400	0,1	25
<i>Total</i>	1439,1	173037	104,0	18096

Source: Statistics Lithuania

The trade of logs in 2002 increased by 14%. 1154 thou.m³ or by 20% more softwood logs were sold than a year ago. State forest enterprises and national sold 445 thou.m³ of spruce logs. As compared to 2001, trade increased by 112 thou.m³ or 34%. In 2002 the sales of pine logs remained similar to the previous year – 274 thou.m³. The sales of hardwood logs increased by 7%, wood for board industry – by 21%. Sales of pulpwood and fuelwood decreased by 1%, comparing to previous year. **There are no data about import – export of round wood and products of poplar timber.**

FELLINGS IN 2002

Felling type	Area, treated with fellings, ha				Merchantable volume, 1000 m ³			
	State forests	Private forests	Reserved for restitution forests	Total	State forests	Private forests	Reserved for restitution forests	Total
FINAL FELLINGS	11493	11205	56	22754	2295,9	1342,6	5,5	3644,0
<i>of this: in conifers stands</i>	5306	7450	18	12774	1040,8	842,6	1,5	1884,9
<i>of this: in spruce stands</i>	1846	2627	11	4484	396,6	281,2	0,3	678,1
<i>hardbroadleaves stands</i>	259	293	7	559	52,3	30,7	0,6	83,6
<i>of this: in oak stands</i>	125	150	3	278	24,2	15,4	0,0	39,6
<i>softbroadleaves stands</i>	5928	3462	31	9421	1202,8	469,3	3,4	1675,5
<i>of this: in birch stands</i>	3214	2178	30	5422	608,4	265,5	3,2	877,1
<i>in black alder stands</i>	1076	423	0	1499	260,1	86,9	0,0	347,0
in aspen stands	1411	641	1	2053	299,6	92,7	0,2	392,5
<i>of total volume: clear cuttings</i>	9801	5261	29	15091	2128,5	1155,7	5,1	3289,3
IMPROVEMENT FELLING	134142	20617	3099	157858	1388,0	418,4	24,5	1830,9
<i>of this: pre-commercial thinning</i>	12514	63	2	12579	19,6	0,6	0,0	20,2
<i>Commercial thinning (1)</i>	5572	1674	8	7254	198,4	57,1	0,3	255,8
<i>Commercial thinning (2)</i>	9032	4705	16	13753	479,3	162,6	0,4	642,3
<i>selective sanitation cutting</i>	105130	12686	3024	120840	620,2	111,3	21,0	752,5
<i>kiti other</i>	2664	1489	49	4202	70,5	86,8	2,8	160,1
Total	145635	31822	3155	180612	3683,9	1761,0	30,0	5474,9

Source: Department of Statistic

Felling volume was increasing for the last 4 years. In 2002 in state and other forests felled and allowed to fell volumes comprised 5,5 mill. m³ or by 8% more than a year ago. Felling volumes in state forests augmented by 6%, while in private forests it was allowed to fell 11% more. In 2002 in state forests 3,7 mill.m³ of wood were removed. With increasing area of private forests, increases also the volume of cuttings in them. In 2002 it was fell almost 2 mill.m³ of wood in private forests. **Annual harvest in aspen stands in 2002 was 392 thou. m³, area, treated with fellings – 2053 ha.**

Wooden articles, paper, furniture and assembled wooden constructions were exported for 2028 mill. Lt. Germany and the United Kingdom remain the main market of wood and wood industry products. Two-thirds of wood industry products were exported to the countries of the European Union. In 2002 import of wood industry products reached 1140 mill. Lt. The greatest import partners were Poland and Russia.

Sawn timber production reached to 1,25 mill.m³. Biggest part of this amount was exported. Exports of sawnwood totaled 920 thou.m³. Sawn timber sales on German market increased to a comparatively small extent. The greatest share of additional production was sold to the United Kingdom – 119 thou.m³ sawn wood. Export to

North America augmented by 22%. The rate of export growth to Belgium was similar. Out of 104 thou.m³ of sawn timber sold in Belgium 64 thou.m³ comprised soft hardwoods.

Sawn timber import totaled 307 thou.m³ in 2002. The main supplier remains Russia. 204 thou.m³. Stable was the growth of import from Belarus – per year were imported 56 thou.m³. Meanwhile from Ukraine import decreased by 14% (that of conifers even by 62%), as compared to 2001.

In 2002 amount of plywood (25,6 thou.m³) was by 7% less than in 2001. Production of fibreboard remained 16 mill.m². Reorganization of production slightly reduced the growth of production capacity. Due to this reason the production of particleboard decreased to 189,4 thou.m³. When the production of particleboard increased, it started to be more widely consumed on domestic market. Export of particleboard decreased by one-fourth-its production remained on a similar level. Despite decreasing export, import of particleboard augmented by one-fourth in 2002. This product is of high demand for fast-growing furniture industry.

Furniture industry is steadily growing since 1997. In 2001 sales in furniture industry increased by 19%, while in 2002 by 31%. Similar growth rates – 30% - were characteristic of export as well. Because majority of the largest producers are oriented to export market.

In 2002 paperboard production increased by 24%. However paper production has decreased.

70% of poplar wood consumed for energy, other 30% of wood – for pulp, paper and packaging

INDUSTRIAL ROUNDWOOD CONSUMPTION, 1989-2002

	1989	1995	1996	1997	1998	1999	2000	2001	2002
Sawmilling	2,1	2,6	2,8	2,9	2,6	2,6	2,7	2,5	2,6
<i>domestic</i>	1,5	2,6	2,8	2,8	2,5	2,5	2,6	2,4	2,5
<i>imported</i>	0,6	-	-	0,1	0,1	0,1	0,1	0,1	0,1
Wood-based panel industry	0,7	0,4	0,5	0,6	0,5	0,3	0,4	0,5	0,5
<i>Plywood</i>	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,2	0,2
<i>Particleboard</i>	0,3	0,1	0,2	0,3	0,2	0,1	0,2	0,2	0,2
<i>Fibreboard</i>	0,3	0,2	0,2	0,2	0,2	0,1	0,1	0,1	0,1
Pulp industry	0,3	-	-	-	-	-	-	-	-
<i>domestic</i>	0,15	-	-	-	-	-	-	-	-
<i>imported</i>	0,15	-	-	-	-	-	-	-	-
Forest industry, total	3,1	3,0	3,3	3,5	3,1	2,9	3,1	3,0	3,1

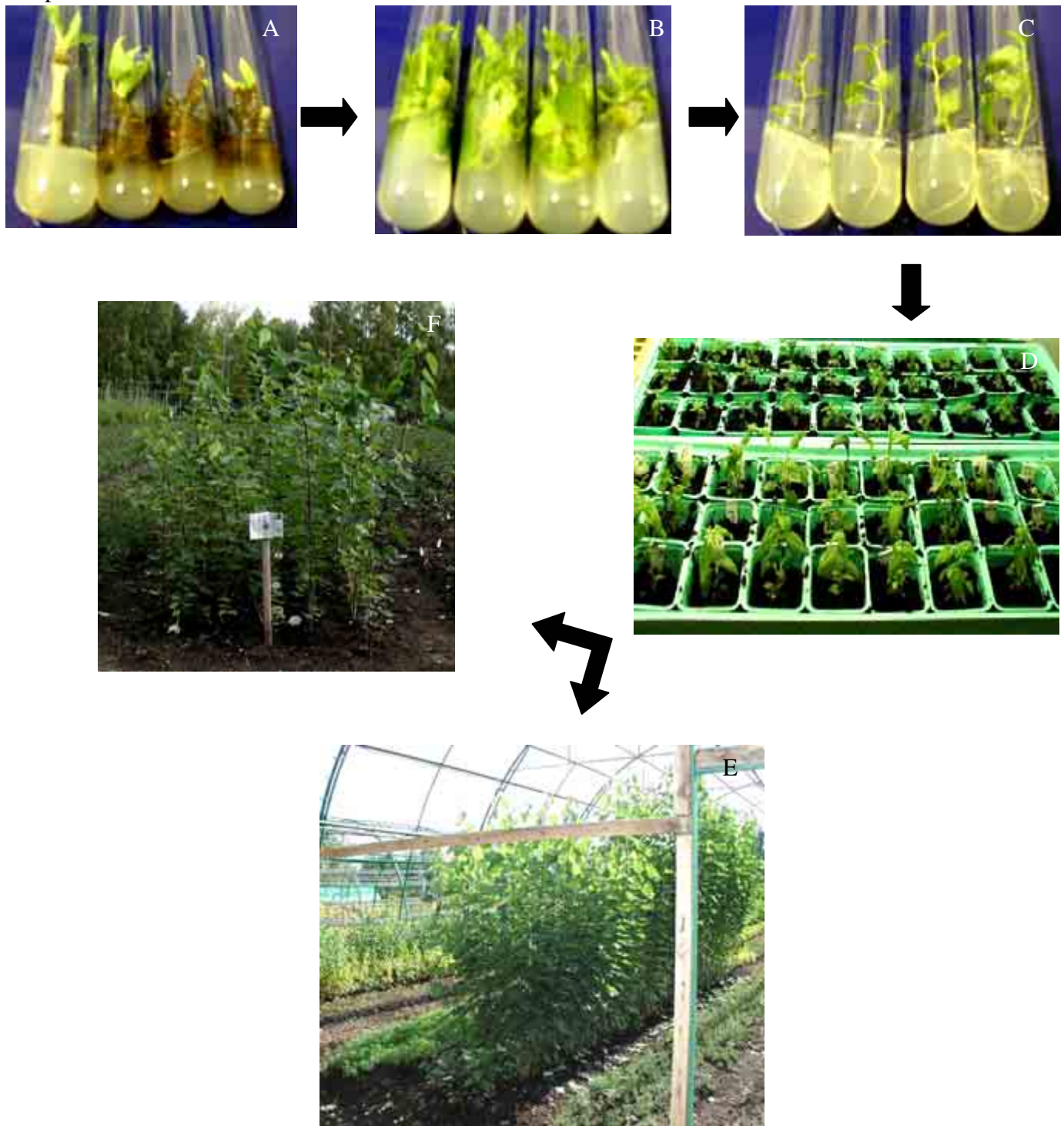
Source: State Forest Survey Service

There are 3 gene reserves (49.3ha) and 15 plus trees of aspen in forest enterprises in Lithuania

Trembling aspen Gene Recourses

Forest Enterprise,	Gene reserves		Plus tree units	In Total:	
	units	area ha		units	area ha
Ignalinos	-	-	6	6	-
Kuršėnų	2	38,3	-	2	-
Raseinių	1	11	-	1	11
Rokiškio	-	-	4	4	-
Šalčininkų	-	-	1	1	-
Ukmergės	-	-	1	1	-
Total:	3	49,3	12	15	11

In Lithuanian forest research institute developed the micro propagation technology *in Vitro* of Hybrid aspen



Micropropagation Technology in Vitro of Hybrid aspen

- A- Part of scion or branch with sleeping bud
- B- Regeneration and multiplication of the scions
- C- Roots development of the scions
- D- Initial in vitro adaptation of the scions
- E- Regenerated plants (clones) in the field conditions after the second adaptation (3 month)
- F- Regenerated plants (clones) in the greenhouse conditions after the second adaptation (3 month)