

Recent and past Finnish tree breeding trials with international contributions

Seppo Ruotsalainen
Luke, Punkaharju

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- New realised gain trials - pine
- A recent Finnish-Latvian-Swedish pine trial
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- Other scattered observations from the shadows of the archives
- Conclusions?

Field trials with Baltic and Central European spruces are skipped

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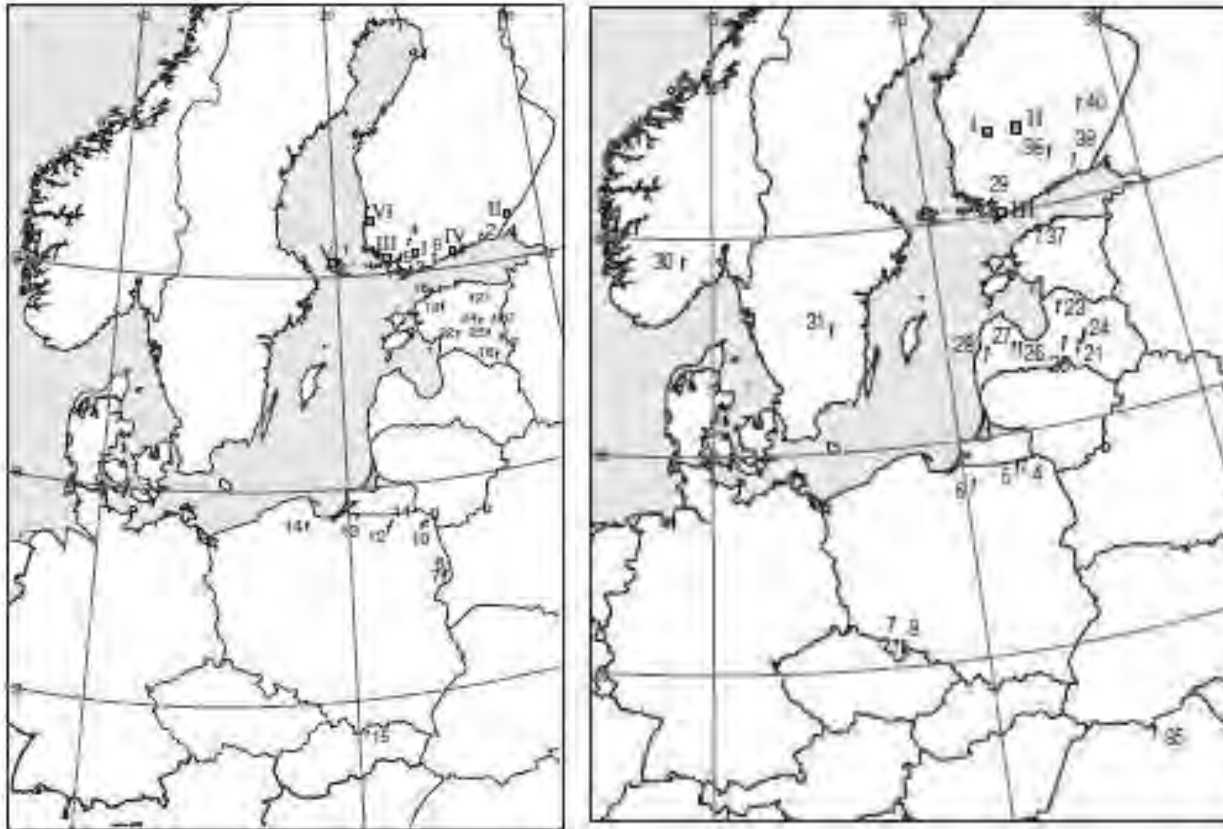
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Itä- ja keskieurooppalaisten kuusialkuperien menestyminen Etelä-Suomessa

Jaakko Napola

<http://www.metla.fi/julkaisut/workingpapers/2014/mwp288.htm>

From Napola (2014)



Kuva 8. Koesarja 535 alkuperäisen ja osakkeiden I-III sijainnit. Lähtöisyysalueet: Koillis-Puola, erät 4-6; Sudeetit-Beskidit (Puola), erät 7 ja 8; Latvia, erät 21-28; Ruotsi-Norja, erät 30 ja 31; Karpaatit (Romania), erä 35; Suomi, erät 29 ja 38-40. Huom. Karttaan on merkitty vain ne erät, jotka on mitattu viimeisimmissä mittauksissa.

Realised gain trial in southern Finland (2016)



Locations of the realised gain trials



Swedish seed lots in the Finnish realised gain trial 2216 planted in spring 2016

Material	Generation	SO No.	Name	Single tree plot trials			Production trials		
				221601 Lapinjärvi 1331	221602 Tammela 1236	221603 Saarijärvi 1110	221604 Nurmes 1020	221605 Heinävesi 1147	221606 Jalasjärvi 1068
SO	1.25g	FP-606A	Gotthardsberg (särplockad fraktion A)	1	1	1			
SO	1.25g	FP-602	Mosås	1	1				
SO	1.25g	FP-610A	Hade (särplockad fraktion A)	1	1	1			
SO	1.25g	FP-616	Sollerön	1	1	1		1	
SO	1.25gS	FP-620A	Gnarp (särplockad fraktion A)			1	1	1	1
SO	1.5gS	FP-621	Västerhus			1	1		1
SO	1.5gS	FP-631	Sönnersta			1	1	1	1
Stand			Dalhem	1	1				
Stand			Hattkullen		1	1	1	1	
Stand			Sollefteå			1	1		1

Trial site dd

Swedish seed lots in the Finnish realised gain trial 2219 (to be planted in spring 2017)

				221901 Liminka	221902 Kuhmo	221903 Pudasjärvi	221904 Suomussalmi	221905 Rovaniemi	221906 Savukoski	221907 Kolari	221908 Kittilä
Material	Generation	SO No.	Name	1041	972	988	879	800 – 900	700 – 800	800 – 900	700 – 800
SO	1.5gS	FP-621	Västerhus	1	1	1	1				
SO	1.5gS	FP-630	Sundsvalls Elit	1	1	1	1	1			
SO	1.5gS	FP-625	Dal T8	1	1	1	1	1			
SO	1.25gS	FP-619	Slåttholmen			1	1	1	1	1	
SO	1g	FP-609	Moliden T4			1		1		1	
SO	1.25gS	FP-623	Pålberget T6			1	1	1	1	1	1
SO	1.25gS	FP-626	Alvik T1			1	1	1	1	1	1
SO	1.25gS	FP-627	Alvik T2			1	1	1	1	1	1
Stand			Kullsjöleden	1	1	1		1			1
Stand			Grundträskliden	1	1	1	1	1			1
Stand			Slättberg	1	1	1	1	1	1	1	1
Stand			Tärendö	1		1	1	1	1	1	1
Stand			Kuttainen	1		1		1		1	1

Trial site dd

Realised gain trial in northern Finland (2017)



Co-operative realised gain trial of Scots pine

Planted 2009, two sites in Finland, material from Finland, Latvia and Sweden
 Measured autumn 2015 (7 growing seasons in the field)

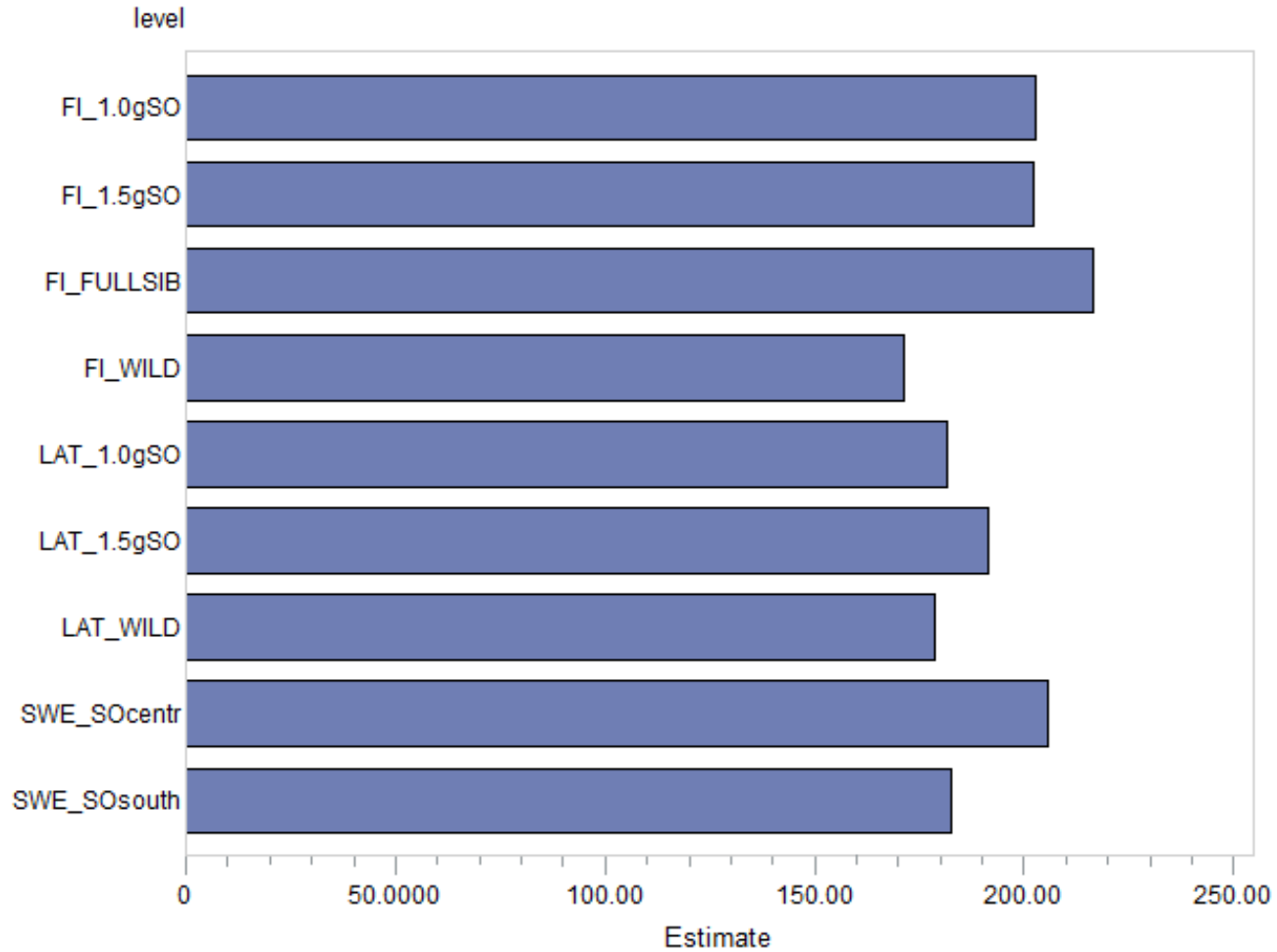
Entry	SO generation	Country	Origin		Notes
1		Finland	Stand	StMä14, Karvia	
2		Finland	Stand	StMä11, Kerimäki	
3		Latvia	Stand	Ugales	
4	1.5	Finland	SO404	Joroinen	
5	1.5	Finland	SO405	Joroinen	
6	1.5	Finland	SO406	Joroinen	
7	1	Finland	SO124	litti	1 genetic thinning
8	1	Finland	SO124	litti	2 genetic thinnings
9	1	Finland	SO323	Mäntyharju	
10	1	Latvia	SO,	Ventspils	
11	1.5	Latvia	SO,	Kuldīga	
12	1.5	Latvia	SO,	Madonas	
13	1	Latvia	SO,	Ludzas	
14	1.25	Sweden	SO611	Asarum	Origin 57 °N
15	1.25	Sweden	SO616	Sollerön	Origin 61 °N
16		Finland	E101 x E262		Elite cross
17		Finland	E468 x E618		Elite cross

Co-operative realised gain trial of Scots pine



Status 16th April 2017

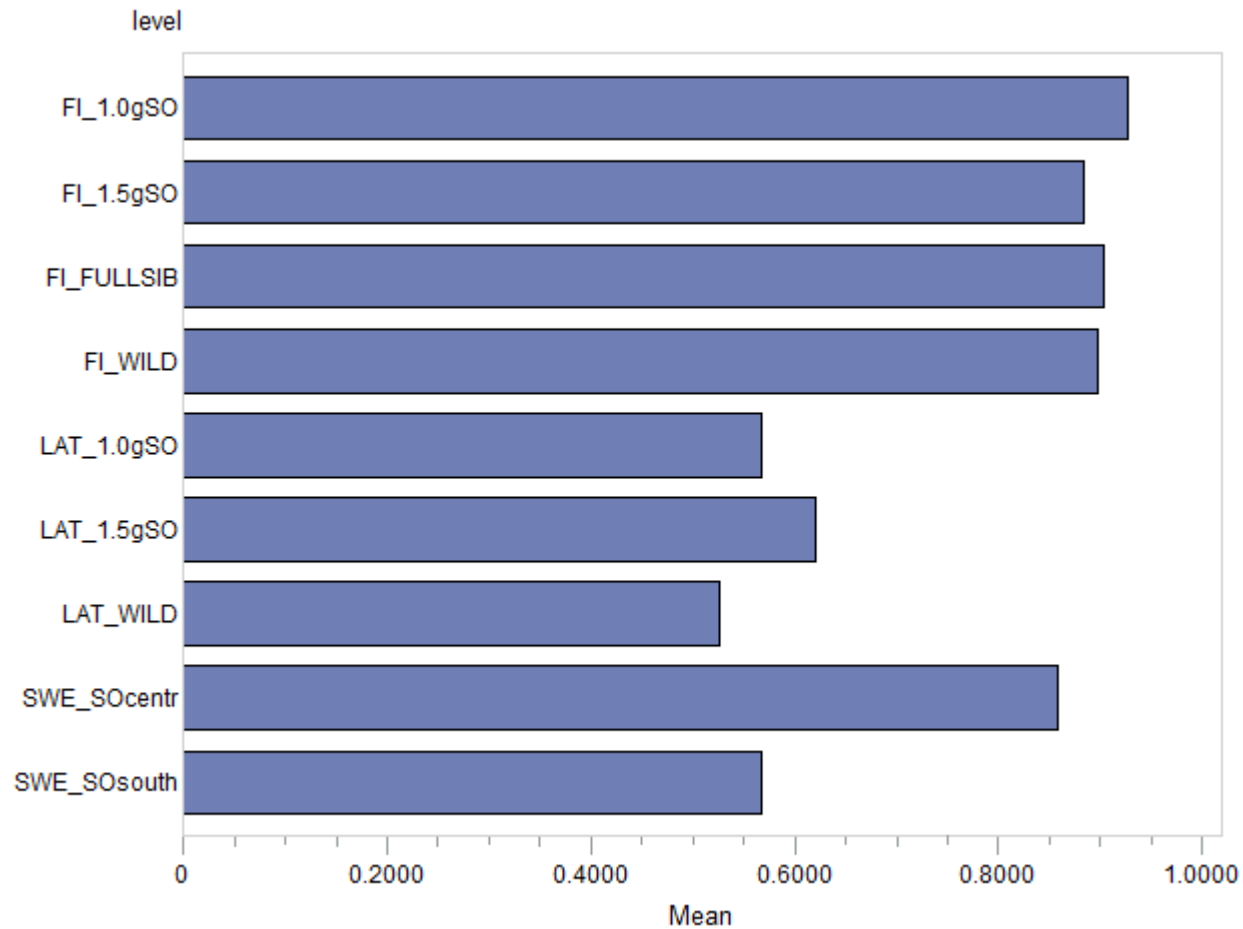
LS-means in height



Analysis for the "genetic groups" tested in the two trials

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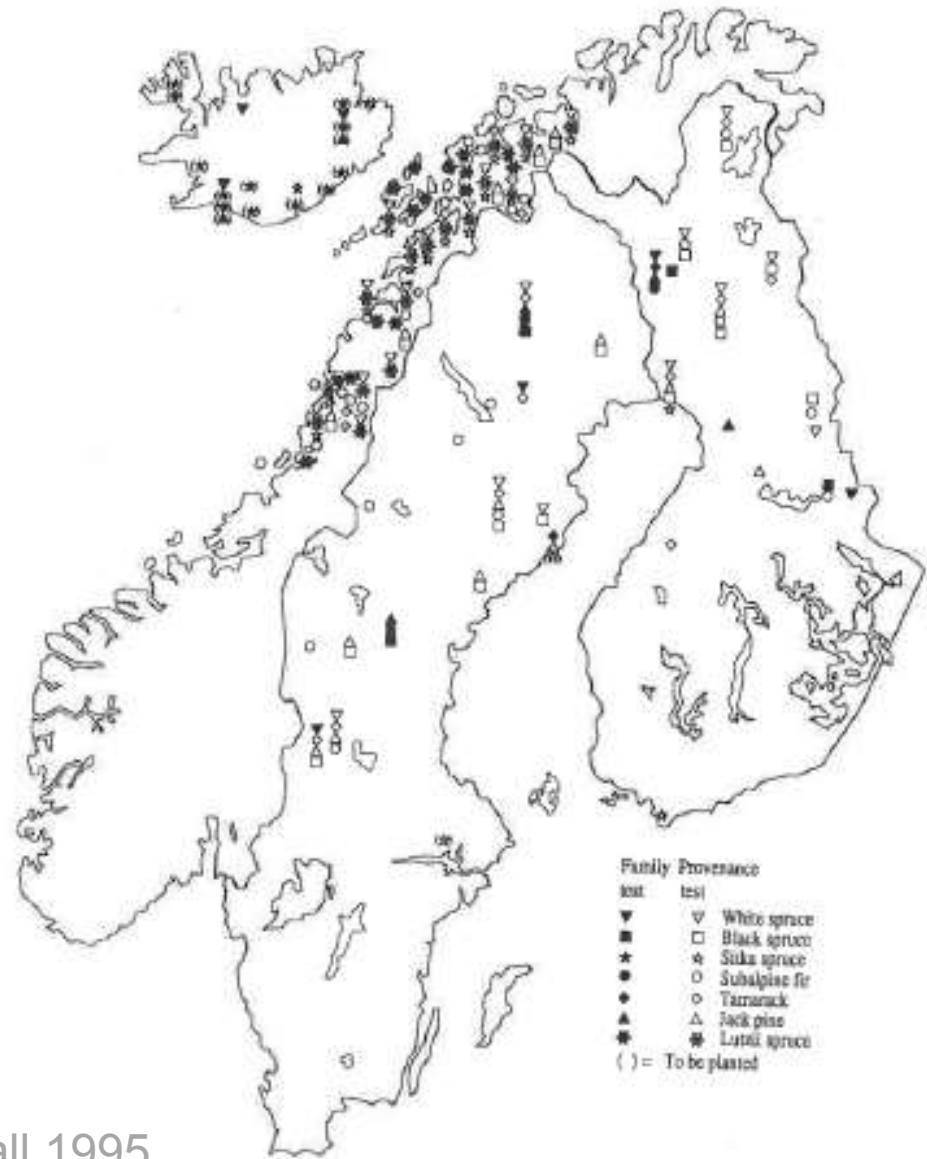
LS-means in survival



Nordic co-operative trials with North American tree species

- Collection of northern conifer species seed from western North America in 1980's
 - A SNS project
 - Six main target species, several with minor interest
- Combined provenance/ family tests were established in 1990's in Sweden, Finland, Norway, ...
 - Single tree plot design
- Most of the trials contain also a set of reference material of native species (an idea strongly advocated by prof. Dag Lindgren)
 - Swedish material mainly crosses
- The application of the reference material is unknown, but the Swedish material is included in the Finnish trials, obviously in the Swedish...
- Also Finnish reference material included in the trials

Location of the Nordic co-operative trials with North American tree species



Rosvall 1995

Reference seed lots in the Nordic co-operative trials with North American tree species



Työ-nro.	Tunnus	Koejäsen	kpl
Picea abies			
1	S23 RGK 1	BD2001 x BD1020	10
2	S23X AC 1017	Avasjö	10
3	S23X Y 2013	Tronnemyråsen	10
4	S22H8020117	S3355 x S3096	10
Picea glauca			
5	G01-87-1529	USA, Alaska, Eagle, mets. 107, 64°46'N 141°14'W, 450 m	10
6	G01-87-1603	Kanada, Yukon, Whitehorse, mets. 409, 60°40'N 135°00'W, 700 m	9
Picea mariana			
8	G01-87-0757	USA, Alaska, Eagle, mets. 39, 64°46'N 141°14'W, 450 m	10
Pinus sylvestris			
10	S23 RTK 1	BD2119 x BD1232	10
11	S23 RTK 2	BD2054 x BD2074	10
12	S23 RTK 3	AC1054 x AC2005	10
13	S23 RTK 4	AC1017 x AC1016	4
14	S23 RTFA 7	Z4021	10
15	S23 RTK 8	W4009 x W2000	10
16	S23 RTK 9	W4107 x W4108	10
Pinus contorta			
17	S23 A 9160290	SCA 69 x SCA 72	10
18	S23 A 9360005	SCA 122 x SCA 121	10
Pinus banksiana			
19	G01-87-2076	Kanada, NWT Birch Lake, mets. 54, 62°38'N 116°19'W, 250 m	10
Larix laricina			
20	G01-87-1803	USA Alaska, Shaw Creek, mets. 125, 64°16'N 146°06'W, 250 m	10
Larix sukaczewii			
21	M29-86-0254	P34 Rovaniemen mlk Sv 309 Jämsänkoski	10
Betula pendula			
22	S03 X BJ795	mor BJ795	9
24	S23 X 8930367	mor S23K8930367	6
Pinus sylvestris			
50	G03-88-0878	Inari StMä 2	10
51	G03-88-1225	Kittilä StMä 4	10
52	G03-88-1242	Salla StMä 5	10
53	G03-88-0876	Kolari StMä 6	10
54	G03-88-1226	Rovaniemen mlk StMä 7b	10
55	G03-82-0007	Simo Tum. 13	10
56	G03-88-0877	Suomussalmi StMä 9	10
58	G03-65-0496	Liekka StMä 12	10
Picea abies			
60	G03-80-0079	Sodankylä StKu 1	10
61	G03-86-1483	Rovaniemen mlk StKu 2	9
62	G03-70-0057	Kemi +metsikkö 563	9
63	G03-86-1481	Suomussalmi StKu 3	10
64	G01-92-0321	Liekka StKu 5	10

Swedish reference seed lots in the Nordic co-operative trials with North American tree species

Number of reference entries per trial and species

Trial No.	Betula pendula	Picea abies	Pinus contorta	Pinus sylvestris	Total
145401		4		3	7
145402		3	1	6	10
145404	1	4		5	10
145405		3		1	4
147301		4	2	6	12
147303		4	2	6	12
147401	2	4	2	7	15
147402	2	4	2	7	15
147502		1		2	3
209401	2	4	2	6	14
209402	2	4	2	6	14
209403		3	2	5	10
209404		4	2	6	12
209405	2	4	2	6	14
209406	2	4	2	7	15
209407	2	4	2	7	15
209408	2	4	2	7	15
209409		2	2	4	8
209410	2	4	2	7	15
Sum	19	68	29	104	220

Number of seedlings in reference entries per trial and species

Trial No.	Betula pendula	Picea abies	Pinus contorta	Pinus sylvestris	Total
145401		30		24	54
145402		34	3	53	90
145404	4	39		32	75
145405		30		2	32
147301		35	15	54	104
147303		37	16	52	105
147401	20	39	18	72	149
147402	15	40	20	64	139
147502		8		10	18
209401	20	39	20	60	139
209402	2	40	17	60	119
209403		28	20	42	90
209404		30	4	37	71
209405	20	40	20	60	140
209406	21	40	20	60	141
209407	20	40	20	69	149
209408	19	40	20	68	147
209409		20	17	38	75
209410	20	37	20	71	148
Total	161	646	250	928	1985

Swedish reference seed lots in the Nordic co-operative trials with North American tree species

Entry	No. of trials
Betula pendula, mor BJ795, Läh. tunnus: S03XBJ795	9
Betula pendula, mor S23K8930367, Läh. tunnus: S23X8930367	10
Picea abies, Avasjö, Läh. tunnus: S23XAC1017	19
Picea abies, BD2001 x BD1020, Läh. tunnus: S23RGK1	17
Picea abies, S3355 x S3096	14
Picea abies, Tronnemyråsen, Läh. tunnus: S23XY2013	18
Pinus contorta, mor SCA69, Läh. tunnus: S23A9360007	10
Pinus contorta, SCA122 x SCA121, Läh. tunnus: S23A9360005	15
Pinus contorta, SCA69 x SCA72, Läh. tunnus: S23 A 9160290	4
Pinus sylvestris, AC1017 x AC1016, Läh. tunnus: S23RTK4	6
Pinus sylvestris, AC1054 x AC2005, Läh. tunnus: S23RTK3	17
Pinus sylvestris, BD2054 x BD2074, Läh. tunnus: S23RTK2	13
Pinus sylvestris, BD2119 x BD1232, Läh. tunnus: S23RTK1	15
Pinus sylvestris, mor Z4021, Läh. tunnus: S23RTFA7	18
Pinus sylvestris, W4009 x W2000, Läh. tunnus: S23RTK8	16
Pinus sylvestris, W4107 x W4108, Läh. tunnus: S23RTK9	19
Total	220

An old spruce provenance trial in northern Finland

- A parallel trial to a Swedish trial (Blomförsöket)
- Planted 1972
- Material from Sweden, Germany, Poland, Lithuania...
- No Finnish material
- Trial located just 9 km's from the Swedish border

Nr. 581/TUTKIMUSLAITOS
 Kenttäkoetoimisto
 O1590 Maaisala
 Puh. 90-824464

TUTKIMUSOSASTON KEMIAIKOJE

Kokeen n:o ¹⁾	475	Puulaji ²⁾	Picea abies
Perustamisaika ³⁾	13-16.6.1972	Taimien ikä istutettaessa ⁴⁾	2+2
Kunta ⁵⁾	Kolari	Koodi ⁶⁾	273
Lähempi paikka ⁸⁾	Korkealehto, Kolarin ha kl.2, kuv.123 "Tappikumpu"	Kylä ⁷⁾	Teuravuoma
Kokeen omistaja ⁹⁾	Metsäntutkimuslaitos, Kolarin ka		
Omistajan os. ¹⁰⁾	95900 KOLARI		
Lev. ¹¹⁾	67 ⁰ 12'	Pit. ¹²⁾	23 ⁰ 48'
Korkeus m.p. ¹²⁾	n.165 m	p.	7458
		i.	492
		Kartta-alue ¹³⁾	2624-12

Metsätyyppi:14. IIII Maalaji:15. moreeni
 Maan pinnanmuoto: kaltevuus:16. %, rinteiden suunta:17. lounas
 Maanpinnan käsittely:18. Kulutus 1970

Kylä--tai istutuspaikka:19. Kourukuokkaistutus
 Istutusväli:20. 2 x 2 m Lajikkeita:23. 37 kpl
 Ruutukoko:21. 8 x 10 m Toistoja:24. 4-5 kpl
 Ruutuja:22. 163 kpl Taimia ruudussa:25. 20 kpl

Pinta-ala, koe:26. 1.46 ha Taimia kokeessa:29. 3594 kpl
 , vaippa:27. - ha vaipassa:30. - kpl
 , yht:28. 1.46 ha yhteensä:31. 3594 kpl

Kokeen tarkoitus:32. Provenienssikoe

Ensimmäinen inventointi:33. 31.6.1972 Taimien elossa:34. 93.5 %

Lisätietoja:35. Taimien mukana ei ole tullut tunnuksia.
 Taimet tulivat ruotsista

Kokeen suunnittelija:36. Max. Hagman

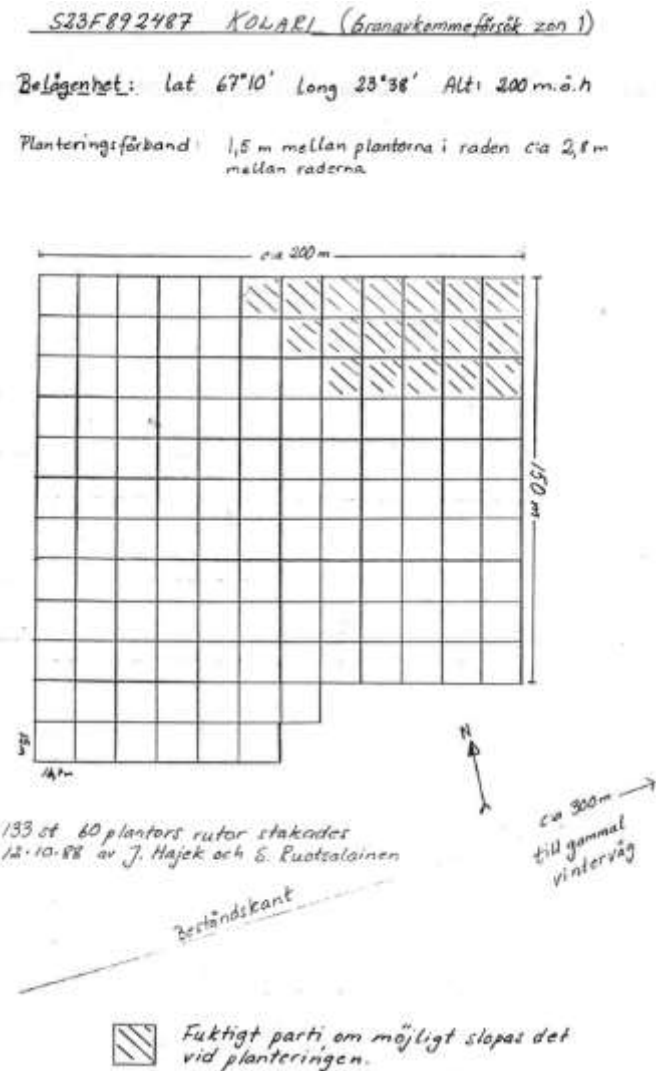
An old spruce provenance trial in northern Finland

- Material from Sweden, Germany, Poland, Lithuania...
- No Finnish material

Entry	Seedlings	Origin
1	96	SE, Norrbottens län, Pajala, BD91, 67°18'N, 175 mp.
2	99	SE, Norrbottens län, Tärendö, BD92, 67°15'N, 200 mp.
3	96	SE, Norrbottens län, Lahnajärvi bev., BD98, 66°50'N, 325 mp.
4	99	SE, Norrbottens län, Avavikens bev., BD89, 65°45'N, 500 mp.
5	97	SE, Norrbottens län, Edefors s:n, BD88, 66°15'N, 350 mp.
6	97	SE, Norrbottens län, Harads, BD93, 66°09'N, 300 mp.
7	97	SE, Norrbottens län, Boden, Storhuvudet, BD96, 65°54'N, 50 mp.
8	95	SE, Norrbottens län, Niemisel, BD95, 65°05'N, 100 mp.
9	100	SE, Norrbottens län, Fällträsk, BD86, 65°32'N, 20 mp.
10	99	SE, Norrbottens län, Granlidens bev., BD87, 65°20'N, 320 mp.
11	100	SE, Västerbottens län, Myrheden., AC331, 65°00'N, 300 mp.
12	99	SE, Västerbottens län, Robertsfors, AC325, 64°30'N, 40 mp.
13	97	SE, Västerbottens län, Burträsk, AC326, 64°35'N, 100 mp.
14	80	SE, Västerbottens län, Dorotea, AC328, 64°17'N, 325 mp.
15	98	SE, Jämtlands län, Tåsjö, Z860, 64°22'N, 260 mp.
16	99	SE, Västernorrlands län, Björkä, Y854, 63°53'N, 320 mp.
17	79	SE, Västernorrlands län, Bredbyn, Y856, 63°31'N, 170 mp.
18	97	SE, Västernorrlands län, Ramsele, Y858, 63°30'N, 250 mp.
19	98	SE, Jämtlands län, Kälarne, Z130, 63°N, 450 mp.
20	99	SE, Västernorrlands län, Indalsliden, Y850, 62°54'N, 100 mp.
21	100	SE, Västernorrlands län, Hässjö, Y848, 62°38'N, 175 mp.
22	100	SE, Gävleborgs län, Voxna, BG141, 61°30'N, 290 mp.
23	100	SE, Gävleborgs län, Åmots förv., BG142, 61°12'N, 310 mp.
25	93	SE, Uppsala län, Gimo förv., EB107, 60°10'N, 20-40 mp.
26	98	SE, Uppsala län, Fagersta, EB109, 60°00'N, 120-195 mp.
27	100	DE, Up 254 Forstamt S:t Oswald, 48°54'N 13°26'E, 1100 mp.
28	97	DE, Up 255 Forstamt Zwiesel-Ost, 49°01'N 13°16', 1100 mp.
29	97	PL, Up 259 Orawa,Krakow, 49°35'N 19°35'E, 1100 mp.
30	99	PL, Up 260 Szklarska Poreba, 50°50'N 15°20'E, 850-910 mp.
31	97	PL, Up 261 Zwierzyniec, avd., 52°40'N 23°50'E, 120 mp.
32	99	PL, Up 262 Zwierzyniec, Bialystok, 52°40'N 23°50'E, 120 mp.
33	99	PL, Up 263 Zytkiejmy, Bialystok, 54°20'N 22°35'E, 200 mp.
34	99	PL, Up 264 Przerwanki, Olsztyn, 54°05'N 22°05'E, 180 mp.
35	100	PL, Up 268 Wígry,Bialystok, 54°00'N 23°00'E, 150 mp.
36	96	BY, Up 265 Slutsk,Vitryssland, 53°02'N 27°36'E
37	100	LT, Up 266 Shirvint Skogsfarm, 54°40'N 22°50'E, 100 mp.
38	99	LT, Up 267 Tituvenai, Kelme, 55°30'N 23°00'E, 100-120 mp.

An old spruce progeny trial in northern Finland

- Established 1989
- Single-tree-plot method used
- Swedish plus tree progenies, also some Finnish plus trees included
- Belongs to a series of Swedish progeny tests



An old spruce progeny trial in northern Finland

- More than 500 entries! (only superficial information in the Finnish databases)
- Swedish plus tree progenies, also some Finnish plus trees included
- Belongs to a series of Swedish progeny tests

S23F892487 KOLARI, SF 1989-08-16 (6624 plantar)

FÄLT NR	PLUSTRÄDS NUMMER (motsv.)	AN-TAL PL.	BESTÄNDS-NUMMER	LAT °	LONG °	ALT möh	LOKALNAMN
1	S23K8320250	13	S2325820310	66	23 20 45	220	S212 SHS
2	S23K8320323	12	S2325820310	66	23 20 45	220	S212 SHS
3	S23K8320324	11	S2325820310	66	23 20 45	220	S212 SHS
4	S23K8320325	12	S2325820310	66	23 20 45	220	S212 SHS
5	S23K8320343	13	S2325820310	66	23 20 45	220	S212 SHS
6	S23K8320344	12	S2325820310	66	23 20 45	220	S212 SHS
7	S23K8320345	14	S2325820310	66	23 20 45	220	S212 SHS
8	S23K8320346	13	S2325820310	66	23 20 45	220	S212 SHS
9	S23K8320308	13	S2325137101	66	68 22 39	150	Jock
10	S23K8320309	13	S2325137101	66	68 22 39	150	Jock
11	S23K8320310	12	S2325137101	66	68 22 39	150	Jock
12	S23K8320311	13	S2325137101	66	68 22 39	150	Jock
13	S23K8320312	10	S2325137101	66	68 22 39	150	Jock
14	S23K8320313	13	S2325137101	66	68 22 39	150	Jock
15	S23K8320314	12	S2325137101	66	68 22 39	150	Jock
16	S23K8320315	14	S2325137101	66	68 22 39	150	Jock
17	S23K8320316	13	S2325137101	66	68 22 39	150	Jock
18	S23K8320501	5	S2325237101	66	44 21 38	280	Ainasvaara
19	S23K8320502	6	S2325237101	66	44 21 38	280	Ainasvaara
20	S23K8320503	10	S2325237101	66	44 21 38	280	Ainasvaara
21	S23K8320504	7	S2325237101	66	44 21 38	280	Ainasvaara
22	S23K8320505	12	S2325237101	66	44 21 38	280	Ainasvaara
23	S23K8320506	9	S2325237101	66	44 21 38	280	Ainasvaara
24	S23K8320507	4	S2325237101	66	44 21 38	280	Ainasvaara
25	S23K8320508	6	S2325237101	66	44 21 38	280	Ainasvaara
26	S23K8320509	5	S2325237101	66	44 21 38	280	Ainasvaara
27	S23K8320510	11	S2325237101	66	44 21 38	280	Ainasvaara
28	S23K8320242	12	S2325147101	66	01 22 38	30	Längsel
29	S23K8320243	13	S2325147101	66	01 22 38	30	Längsel
30	S23K8320244	14	S2325147101	66	01 22 38	30	Längsel
31	S23K8320245	14	S2325147101	66	01 22 38	30	Längsel
32	S23K8320246	13	S2325147101	66	01 22 38	30	Längsel
33	S23K8320247	12	S2325147101	66	01 22 38	30	Längsel
34	S23K8320248	14	S2325147101	66	01 22 38	30	Längsel
35	S23K8320249	14	S2325147101	66	01 22 38	30	Längsel
36	S23K8320391	10	S2325180203	66	49 23 25	190	Matinlauri
37	S23K8320392	13	S2325180203	66	49 23 25	190	Matinlauri
38	S23K8320393	12	S2325180203	66	49 23 25	190	Matinlauri
39	S23K8320394	7	S2325180203	66	49 23 25	190	Matinlauri
40	S23K8320395	11	S2325180203	66	49 23 25	190	Matinlauri
41	S23K8320396	13	S2325180203	66	49 23 25	190	Matinlauri
42	S23K8320397	13	S2325180203	66	49 23 25	190	Matinlauri
43	S23K8320398	6	S2325180203	66	49 23 25	190	Matinlauri
44	S23K8320399	14	S2325180203	66	49 23 25	190	Matinlauri
45	S23K8320400	11	S2325180203	66	49 23 25	190	Matinlauri
46	S23K8320108	1	S2324217101	65	22 16 28	450	Ullisjaure
48	S23K8320110	1	S2324217101	65	22 16 28	450	Ullisjaure

Stray observations from Nordic entries in Finnish trials

- Hundreds - thousands of entries with Nordic origin in the Finnish tree breeding trials
- Variable background, many species

Trial	Entry No.	Seedlings	Origin
73601	21	245	Ruotsi, Norrbottens län, Jokkmokk, 66°36' 19°50', 350 mp.
73601	22	245	Ruotsi, Norrbottens län, Arjeplog, 66°03' 17°50', 415 mp.
73601	23	245	Ruotsi, Norrbottens län, Malmesjaur, 65°54' 19°13', 340 mp.
73601	24	245	Ruotsi, Norrbottens län, Arvidsjaur, 65°35' 19°10', 350 mp.

Pines from Sweden

Trial	Entry No.	Seedlings	Mother	Father	Origin
50801	1	245			Norja, Finnmark fylke, Alta (Angerin kävyt), 69°53' 23°20', 120 mp.
180101	117	36	E2248	E2012	Emo:Jalvyöh:2 Sulkava x Isä:Jalvyöh:1 Tuusula (Norja, Oppland fylke)

...and from Norway

Stray observations from Nordic entries in Finnish trials

Norway spruce from Norway (a sample from one trial)

Trial	Entry No.	Seedlings	Origin
128601	1	40	Fam. nro 1, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 5444 Puola Stolpce, 53°28' 26°43', 170 mp.
128601	2	40	Fam. nro 2, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 5448 Puola Stolpce, 53°28' 26°43', 170 mp.
128601	3	40	Fam. nro 3, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 5468 Ukraina Dolina, 49°00' 24°00', 500 mp.
128601	4	40	Fam. nro 4, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 5453 Romania Crucea, 47°21' 25°40', 720 mp.
128601	5	40	Fam. nro 5, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 5466 Ukraina Dolina, 49°00' 24°00', 500 mp.
128601	6	40	Fam. nro 6, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 713 Norja Aust-Agder, 58°29' 8°27', 130 mp.
128601	7	40	Fam. nro 7, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 2037 Norja Oppland, 60°44' 10°16', 160 mp.
128601	8	39	Fam. nro 8, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 87 Norja Ostfold, 59°37' 11°40', 160 mp.
128601	9	40	Fam. nro 9, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 39 Norja Telemark, 59°12' 9°51', 110 mp.
128601	10	40	Fam. nro 10, 1589 Norja Vestfold, 59°14' 9°53', 55 mp. x 6264 Norja Buskerud, 60°02' 9°33', 207 mp.
128601	11	40	Fam. nro 11, 1641 Norja Oslo, 60°01' 10°38', 230 mp. x 5444 Puola Stolpce, 53°28' 26°43', 170 mp.
128601	57	40	Fam. nro 57, 5440 Latvia Vecmoka, 57°03' 23°10', 80 mp. x 2037 Norja Oppland, 60°44' 10°16', 160 mp.
128601	58	40	Fam. nro 58, 5440 Latvia Vecmoka, 57°03' 23°10', 80 mp. x 87 Norja Ostfold, 59°37' 11°40', 160 mp.
128601	59	40	Fam. nro 59, 5440 Latvia Vecmoka, 57°03' 23°10', 80 mp. x 39 Norja Telemark, 59°12' 9°51', 110 mp.
128601	60	39	Fam. nro 60, 5440 Latvia Vecmoka, 57°03' 23°10', 80 mp. x 6264 Norja Buskerud, 60°02' 9°33', 207 mp.
128601	99	40	Fam. nro 99, 5460 Puola Bialowieza, 52°52' 23°47', 180 mp. x 39 Norja Telemark, 59°12' 9°51', 110 mp.
128601	100	39	Fam. nro 100, 5460 Puola Bialowieza, 52°52' 23°47', 180 mp. x 6264 Norja Buskerud, 60°02' 9°33', 207 mp.
128601	101	40	S. nr NISK 11738, 5320 Norja x 5543 Norja
128601	102	40	S. nr NISK 11741, 5290 Norja x 2757 Norja

Final remarks

- There exists rather much genetic material from the neighbouring countries in tree breeding trials
- The content of the material is rather haphazard
- Few if any planned cross-national trial series
- How to find the trials?
 - Noltfox?
 - (Semi-)manual search
- How to identify the entries
 - (Semi-)manual search and co-operative efforts
 - Important to save all relevant information for identification
- How to measure and analyse the trials?

Thank you!



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