

Some Terroir properties and relations to the compared apple cultivars



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List of sites of selected common cultivars to analyse (soil and juice) and to model «Terroir»

Auksis	Sinap Orlovskii	Dabinet
LatHort, Tālava Cidery, Lauskis, EMU, Jaanihanso Cider House, Kodas, Tori, Kloostrimetsa	LatHort, Sabiles sidrs, EMU, Jaanihanso Cider House, Kodas	LatHort, Abuls cidery, Plume cidery, Kloostrimetsa



Quadrants of Estonia and Latvia (the Baltic) Terroir map

Quadrant: **North Maritime** (-

¹⁾
Cideries: *Jaanihanso Cider House, Tori Jõesuu Siidritalu, Kloostrimetsa*

n of 'Auksis' (3), 'Sinap Orlovski' (1), 'Dabinett' (1)

The north maritime climate zone is represented by the West and North parts of Estonia.

Quadrant: **North Continental** (-2)

Cideries: *Abuls Cidery, Mūrbūdu Sidrs, Tālava Cidery, KODAS and EMU*

n of 'Auksis' (2), 'Sinap Orlovski' (2), 'Dabinett' (1)

The north continental climate zone is represented by South of Estonia (Tartu region) and North East part of Vidzeme (Latvia).

Quadrant: **South Maritime** (1)

Cideries: *Herbsts Cidery, Sabiles Sidrs, Abava Winery*

n of 'Auksis' (0), 'Sinap Orlovski' (1), 'Dabinett' (0)

The south maritime climate zone is represented by the West part of Latvia (Kurzeme). It could be divided into two sub-zones at least: maritime influenced by the open sea and maritime influenced by the Gulf of Riga.

Quadrant: **South Continental** (2)

Cideries: *Mr. Plūme Cidery, Lauskis Cidery and LatHort*

n of 'Auksis' (2), 'Sinap Orlovski' (1), 'Dabinett' (2)

The south continental climate zone is represented by South of Latvia (southern Vidzeme, Zemgale).

Climate of Quadrants of Estonia and Latvia (the Baltic) Terroir map

Quadrant: **North Maritime** (-1)

Climate character	Climatic norms (1990 - 2020)	Climatic situation in 2024	Climatic situation in 2025
average air temperature, °C	5.9 - 6.8	7.6 - 8.7	7.4 – 8.4
precipitations per year, mm	701 - 756	624 - 690	674 – 800
sum of precipitation in the active period (May - September), mm	330 - 345	327 - 345	345 – 460
sum of positive temperatures in the period April-November (‘Dabinet’ collected in November), °C	2553 - 2762	2990 - 3304	2665 – 2927
sum of positive temperatures per year, °C;	2638 - 2867	3155 - 3487	2807 – 3086
sum of effective temperatures per year (above 5 °C), °C	2442 - 2670	2929 - 3274	2616 – 2847
sum of active temperatures per year or GDD (above 10 °C), °C	2022 - 2255	2491 - 2796	1933 – 2287
number of days with positive temperature	275 - 287	301 - 314	304 – 314
number of days with effective temperature (above 5 °C)	189 - 199	209 - 223	214
number of days with active temperature or GDD (above 10 °C)	134 - 143	150 - 159	123

Climate of Quadrants of Estonia and Latvia (the Baltic) Terroir map

Quadrant: **North Continental** (-2)

Climate character	Climatic norms (1990 - 2020)	Climatic situation in 2024	Climatic situation in 2024
average air temperature, °C	6.1 - 6.5	8.0 - 8.5	7.4 – 7.7
precipitations per year, mm	656 - 726	562 - 618	672 – 796
sum of precipitation in the active period (May - September), mm	332 - 370	288 - 370	377 – 545
sum of positive temperatures in the period April-November (‘Dabinet’ collected in November), °C	2607 - 2696	3104 - 3187	2708 – 2758
sum of positive temperatures per year, °C;	2607 - 2806	3219 - 3319	2693 – 2887
sum of effective temperatures per year (above 5 °C), °C	2589 - 2621	3115 - 3214	2616 – 2718
sum of active temperatures per year or GDD (above 10 °C), °C	2217 - 2243	2454 - 2657	1976 – 2093
number of days with positive temperature	244 - 275	265 - 300	265
number of days with effective temperature (above 5 °C)	196 - 214	217 - 235	183 – 214
number of days with active temperature or GDD (above 10 °C)	142 - 153	143 - 155	123 - 133

Climate of Quadrants of Estonia and Latvia (the Baltic) Terroir map

Quadrant: **South Maritime** (1)

Climate character	Climatic norms (1990 - 2020)	Climatic situation in 2024	Climatic situation in 2025
average air temperature, °C	6.8 - 7.9	8.6 - 9.7	8.0 – 8.9
precipitations per year, mm	693 - 695	567 - 704	623 – 719
sum of precipitation in the active period (May - September), mm	303 - 343	308 - 335	341 – 385
sum of positive temperatures in the period April-November ('Dabinet' collected in November), °C	2651 - 2867	3069 - 3322	2757 – 2929
sum of positive temperatures per year, °C;	2658 - 2950	3265 - 3629	2867 – 3176
sum of effective temperatures per year (above 5 °C), °C	2580 - 2748	3081 - 3322	2703 – 2854
sum of active temperatures per year or GDD (above 10 °C), °C	2197 - 2301	2415 - 2638	1971 – 2115
number of days with positive temperature	275 - 306	324 - 345	273 – 314
number of days with effective temperature (above 5 °C)	214	235 - 244	214 – 224
number of days with active temperature or GDD (above 10 °C)	153	143 - 153	123 - 133

Climate of Quadrants of Estonia and Latvia (the Baltic) Terroir map

Quadrant: South Continental (2)

Climate character	Climatic norms (1990 - 2020)	Climatic situation in 2024	Climatic situation in 2025
average air temperature, °C	6.7 - 7.2	8.8 - 9.3	8.0 – 8.5
precipitations per year, mm	581 - 733	411 - 640	629 – 782
sum of precipitation in the active period (May - September), mm	304 - 362	241 - 265	445 – 481
sum of positive temperatures in the period April-November (‘Dabinet’ collected in November), °C	2780 - 2724	3244 - 3293	2804 – 2915
sum of positive temperatures per year, °C;	2735 - 2826	3378 - 3518	2946 – 3043
sum of effective temperatures per year (above 5 °C), °C	2678 - 2730	3275 - 3339	2757 – 2848
sum of active temperatures per year or GDD (above 10 °C), °C	2283 - 2316	2644 - 2666	2119 – 2171
number of days with positive temperature	275	293 - 324	265 – 273
number of days with effective temperature (above 5 °C)	214	235 - 244	214
number of days with active temperature or GDD (above 10 °C)	153	153	133

Soil properties of quadrants of Estonia and Latvia (the Baltic) Terroir map

Quadrant: **North Maritime** (-1)

pH 5.4 - 7.4; organic matter 5.7 - 9.1 %; plant available phosphorus (P_2O_5) 128 - 627 mg/kg of soil and potassium (K_2O) 111 - 396 mg/kg; Mg 87 - 5449 mg/kg; Ca 961 - 10297 mg/kg; B 0.9 - 2.4 mg/kg; Cu 1.5 - 5.5 mg/kg; Mn 27 - 262 mg/kg; Zn 1.9 - 33.5 mg/kg; S-SO₄ 1.2 - 6.4 mg/kg; Ca/Mg ratio: 1.60 - 23.12; Ca/K ratio: 6.58 - 42.58.

Quadrant: **North Continental** (-2)

pH 4.9 - 7.2; organic matter 2.1 - 4.6 %; plant available phosphorus (P_2O_5) 21 - 208 mg/kg of soil and potassium (K_2O) 46 - 191 mg/kg; Mg 67 - 898 mg/kg; Ca 589 - 2640 mg/kg; B 0.4 - 1.2 mg/kg; Cu 1.2 - 1.7 mg/kg; Mn 63 - 128 mg/kg; Zn 1.3 - 3.8 mg/kg; S-SO₄ <1.0 - 1.8 mg/kg; Ca/Mg ratio: 2.13 - 9.82; Ca/K ratio: 3.79 - 25.41.

Quadrant: **South Maritime** (1)

pH 5.3 - 6.4; organic matter 2.2 - 3.2 %; plant available phosphorus (P_2O_5) 98 - 134 mg/kg of soil and potassium (K_2O) 144 - 145 mg/kg; Mg 133 - 792 mg/kg; Ca 754 - 1638 mg/kg; B 0.8 mg/kg; Cu 2.2 - 13.3 mg/kg; Mn 67 - 71 mg/kg; Zn 2.0 - 3.0 mg/kg; S-SO₄ <1.0 - 1.2 mg/kg; Ca/Mg ratio: 2.07 - 5.67; Ca/K ratio: 5.24 - 11.30.

Quadrant: **South Continental** (2)

pH 5.4 - 7.4; organic matter 2.4 - 4.9 %; plant available phosphorus (P_2O_5) 44 - 585 mg/kg of soil and potassium (K_2O) 60 - 305 mg/kg; Mg 50 - 1617 mg/kg; Ca 610 - 2985 mg/kg; B 0.7 - 1.4 mg/kg; Cu 1.7 - 9.7 mg/kg; Mn 71 - 188 mg/kg; Zn 1.6 - 14.2 mg/kg; S-SO₄ <1.0 - 1.4 mg/kg; Ca/Mg ratio: 1.85 - 12.20; Ca/K ratio: 3.30 - 23.32.

Location – Terroir of the Baltic Quadrant effect

	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
soil pH	0,15	0,32	0,07	-0,12
organic matter in the soil	-0,28	-0,11	-0,39	-0,43
Phosphorus in the soil	-0,27	-0,15	-0,47	-0,37
relation Ca: Mg in the soil	-0,30	-0,29	-0,20	-0,46
relation Ca: K in the soil	-0,20	-0,04	-0,62	-0,01
soluble solids	0,10	-0,26	0,03	0,33
juice yield	-0,16	-0,03	-0,71	0,19
Sucrose in apple juice	-0,23	-0,42	-0,22	0,11
Glucose in apple juice	-0,02	0,05	-0,50	0,13
Fructose in apple juice	0,08	-0,09	0,43	-0,19
Total saccharide in apple juice	-0,03	-0,32	0,28	-0,06
Malic acid	-0,17	-0,46	-0,58	-0,07
Oxalic acid	-0,01	-0,02	0,32	-0,26
Tartaric acid	0,00	-0,02	-0,40	0,27
Quinic acid	0,01	-0,02	-0,55	0,32
Ascorbic acid	-0,11	0,03	-0,57	0,22
Average air temperature	0,69	0,60	0,79	0,76
sum of precipitation	-0,46	-0,26	-0,50	-0,68
Sum of positive temperatures	0,26	0,22	0,05	0,51
Sum of effective temperatures (above 5 C)	0,26	0,23	0,09	0,45
Sum of active temperatures	0,06	0,08	-0,29	0,39

Soluble solids	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
Fructose in apple juice	0,66	0,63	0,18	0,41
Sucrose in apple juice	0,40	0,45	-0,11	0,86
Total saccharide in apple juice	0,85	0,82	0,34	0,80
Malic acid	-0,32	0,35	0,40	0,51
Ascorbic acid	-0,32	-0,42	0,06	0,43
Titrateable acidity	-0,34	0,25	0,48	0,43
pH of juice	0,67	0,47	0,45	0,20
juice yield	-0,53	-0,52	-0,09	-0,52
Average air temperature	-0,03	-0,66	-0,40	0,62
sum of precipitation	0,03	0,33	0,24	-0,35
Sum of positive temperatures	-0,16	-0,64	-0,40	0,62
Sum of effective temperatures (above 5 C)	-0,12	-0,58	-0,40	0,62
Sum of active temperatures	-0,20	-0,59	-0,40	0,62
soil pH	0,03	0,35	0,66	-0,76
organic matter in the soil	0,03	0,27	0,58	-0,15
Phosphorus in the soil	0,05	0,45	0,69	-0,38
Potassium in the soil	0,00	0,16	0,72	-0,30
Mg in soil	0,06	0,21	0,77	-0,11
Ca in soil	0,08	0,42	0,75	-0,55
B in soil	0,11	0,31	0,70	-0,51
Cu in soil	-0,15	-0,05	0,32	-0,14
Mn in soil	0,08	0,46	0,65	-0,67
Zn in soil	0,11	0,38	0,72	-0,60
relation Ca: Mg in the soil	0,13	0,25	-0,90	-0,22
relation Ca: K in the soil	0,02	0,38	0,53	-0,24

Detected at harvest (-1) or later (1)

-0,37

Titrateable acidity	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
Fructose in apple juice	-0,39	0,33	-0,42	0,09
Sucrose in apple juice	0,10	0,13	0,59	0,28
Total saccharide in apple juice	-0,38	0,40	-0,27	0,22
Malic acid	0,95	0,85	0,49	0,78
Ascorbic acid	0,17	-0,30	0,44	0,36
Soluble solids	-0,34	0,25	0,48	0,43
pH of juice	-0,81	-0,42	-0,12	-0,53
juice yield	0,25	-0,17	0,32	-0,35
Average air temperature	-0,19	-0,44	-0,06	0,43
sum of precipitation	0,04	0,47	-0,03	-0,20
Sum of positive temperatures	-0,05	-0,39	0,08	0,52
Sum of effective temperatures (above 5 C)	-0,08	-0,45	0,08	0,50
Sum of active temperatures	-0,02	-0,32	0,07	0,55
soil pH	-0,14	-0,28	0,05	-0,41
organic matter in the soil	0,11	0,11	-0,12	-0,24
Phosphorus in the soil	0,28	0,10	0,09	-0,35
Potassium in the soil	0,26	0,06	0,07	0,29
Mg in soil	0,24	-0,01	0,11	0,23
Ca in soil	0,25	0,12	0,09	-0,37
B in soil	0,03	-0,08	-0,04	-0,52
Cu in soil	0,48	-0,21	0,65	0,13
Mn in soil	0,13	0,10	-0,07	-0,59
Zn in soil	0,28	0,06	0,06	-0,53
relation Ca: Mg in the soil	-0,19	0,32	-0,36	-0,53
relation Ca: K in the soil	0,12	-0,02	0,07	-0,57
Detected at harvest (-1) or later (1)			-0,61	

juice yield	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
Fructose in apple juice	-0,82	-0,76	-0,85	-0,98
Sucrose in apple juice	0,20	0,43	0,71	-0,82
Total saccharide in apple juice	-0,66	-0,46	-0,71	-0,91
Malic acid	0,33	0,10	0,42	-0,37
Ascorbic acid	0,62	0,57	0,71	0,58
Soluble solids	-0,53	0,52	-0,09	-0,52
pH of juice	-0,47	-0,66	-0,67	-0,06
Titrateable acidity	0,25	-0,17	0,32	-0,35
Average air temperature	0,02	0,31	-0,34	-0,04
sum of precipitation	-0,27	-0,41	-0,05	-0,29
Sum of positive temperatures	0,45	0,59	0,44	0,32
Sum of effective temperatures (above 5 C)	0,40	0,52	0,40	0,34
Sum of active temperatures	0,52	0,60	0,64	0,36
soil pH	0,25	0,20	-0,13	0,79
organic matter in the soil	0,31	0,36	0,19	0,07
Phosphorus in the soil	0,36	0,34	0,26	0,39
Potassium in the soil	0,24	0,28	0,04	-0,03
Mg in soil	0,26	0,23	0,17	0,16
Ca in soil	0,32	0,33	0,18	0,72
B in soil	0,34	0,43	-0,01	0,78
Cu in soil	0,11	-0,10	-0,03	0,30
Mn in soil	0,32	0,25	0,08	0,95
Zn in soil	0,26	0,28	0,19	0,79
relation Ca: Mg in the soil	0,07	0,11	0,22	0,45
relation Ca: K in the soil	0,37	0,28	0,38	0,75
Detected at harvest (-1) or later (1)			-0,37	

Total saccharide in apple juice	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
Fructose in apple juice	0,90	0,85	0,96	0,84
Sucrose in apple juice	0,35	0,54	-0,52	0,82
Malic acid	-0,01	0,52	0,22	0,32
Ascorbic acid	-0,89	-0,76	-0,85	-0,09
juice yield	-0,66	-0,46	-0,71	-0,91
Soluble solids	0,85	0,82	0,34	0,80
pH of juice	0,65	0,46	0,61	0,18
Titrateable acidity	-0,38	0,34	-0,27	0,22
Average air temperature	-0,13	-0,64	-0,23	0,31
sum of precipitation	0,25	0,47	0,58	0,02
Sum of positive temperatures	-0,48	-0,86	-0,88	0,11
Sum of effective temperatures (above 5 C)	-0,46	-0,83	-0,85	0,12
Sum of active temperatures	-0,53	-0,83	-0,96	0,08
soil pH	-0,08	0,03	0,40	-0,78
organic matter in the soil	-0,07	0,11	0,38	-0,12
Phosphorus in the soil	-0,12	0,15	0,32	-0,37
Potassium in the soil	-0,08	0,05	0,46	-0,12
Mg in soil	-0,04	0,13	0,38	-0,19
Ca in soil	-0,07	0,16	0,38	-0,64
B in soil	-0,02	0,09	0,49	-0,60
Cu in soil	-0,28	-0,11	-0,13	-0,29
Mn in soil	-0,06	0,14	0,45	-0,80
Zn in soil	-0,03	0,18	0,38	-0,65
relation Ca: Mg in the soil	0,09	0,07	-0,43	-0,31
relation Ca: K in the soil	-0,15	0,11	0,11	-0,49
Detected at harvest (-1) or later (1)			0,08	

Oxalic acid	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
Total saccharide in apple juice	0,52	0,71	0,96	0,19
Fructose in apple juice	0,74	0,90	0,95	0,64
Sucrose in apple juice	-0,02	-0,02	-0,44	0,26
Malic acid	-0,01	0,35	0,12	0,02
Ascorbic acid	-0,89	-0,96	-0,92	-0,99
juice yield	-0,63	-0,62	-0,71	-0,67
Solible solids	0,18	0,35	0,10	-0,33
pH of juice	0,27	0,49	0,47	-0,1
Titratable acidity	-0,15	0,28	-0,39	-0,32
Average air temperature	-0,30	-0,33	-0,16	-0,51
sum of precipitation	0,53	0,54	0,56	0,51
Sum of positive temperatures	-0,84	-0,85	-0,86	-0,87
Sum of effective temperatures (above 5 C)	-0,85	-0,86	-0,83	-0,91
Sum of active temperatures	-0,90	-0,91	-0,93	-0,91
soil pH	-0,10	-0,23	0,28	-0,07
organic matter in the soil	0,06	-0,08	0,28	0,31
Phosphorus in the soil	-0,08	-0,22	0,18	0,25
Potassium in the soil	-0,02	-0,19	0,32	0,28
Mg in soil	-0,05	-0,15	0,23	0,04
Ca in soil	-0,06	-0,17	0,23	0,11
B in soil	-0,05	-0,24	0,38	0,05
Cu in soil	-0,17	-0,08	-0,25	-0,12
Mn in soil	-0,07	-0,16	0,34	-0,21
Zn in soil	-0,03	-0,18	0,24	0,05
relation Ca: Mg in the soil	0,01	0,03	-0,24	-0,11
Detected at harvest (-1) or later (1)			0,16	

Quinic acid	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
Total saccharide in apple juice	-0,17	-0,77	-0,85	-0,09
Fructose in apple juice	-0,36	-0,86	-0,81	-0,58
Sucrose in apple juice	-0,09	-0,17	0,24	-0,10
Malic acid	-0,01	-0,28	0,03	0,22
Ascorbic acid	-0,89	0,97	0,91	0,96
juice yield	0,37	0,56	0,68	0,55
Soluble solids	0,13	-0,42	-0,22	0,44
pH of juice	0,17	-0,50	-0,23	-0,03
Titrateable acidity	-0,20	-0,20	0,25	0,39
Average air temperature	-0,30	0,33	-0,02	0,60
sum of precipitation	0,53	-0,54	-0,34	-0,63
Sum of positive temperatures	-0,84	0,84	0,72	0,94
Sum of effective temperatures (above 5 C)	-0,85	0,85	0,70	0,92
Sum of active temperatures	-0,90	0,89	0,86	0,95
soil pH	0,05	0,17	-0,29	0,04
organic matter in the soil	-0,17	0,02	-0,31	-0,10
Phosphorus in the soil	-0,11	0,16	-0,26	-0,06
Potassium in the soil	-0,20	0,05	-0,51	-0,17
Mg in soil	-0,16	-0,01	-0,31	0,07
Ca in soil	-0,13	0,09	-0,30	0,06
B in soil	-0,09	0,10	-0,50	0,05
Mn in soil	-0,06	0,12	-0,45	0,13
Zn in soil	-0,15	0,04	-0,32	0,02
relation Ca: Mg in the soil	0,16	0,11	0,35	0,07
Detected at harvest (-1) or later (1)			-0,37	

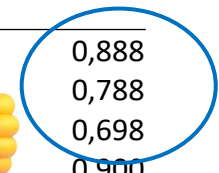
Malic acid	for all three cultivars	Auksis	Sinap Orlovski	Dabinett
Total saccharide in apple juice	-0,35	0,52	0,22	0,32
Fructose in apple juice	-0,37	0,32	-0,02	0,21
Sucrose in apple juice	0,24	0,42	0,36	0,53
Ascorbic acid	0,11	-0,34	0,10	0,09
juice yield	0,33	0,10	0,42	-0,37
Soluble solids	-0,32	0,35	0,40	0,51
pH of juice	-0,82	-0,31	0,04	-0,73
Titrateable acidity	0,95	0,85	0,49	0,78
Average air temperature	-0,30	-0,52	-0,68	0,12
sum of precipitation	0,09	0,34	0,68	0,03
Sum of positive temperatures	-0,16	-0,48	-0,46	0,25
Sum of effective temperatures (above 5 C)	-0,21	-0,53	-0,46	0,14
Sum of active temperatures	-0,11	-0,42	-0,32	0,31
soil pH	-0,12	-0,16	0,15	-0,49
organic matter in the soil	0,28	0,24	0,40	0,41
Phosphorus in the soil	0,40	0,24	0,56	0,23
Potassium in the soil	0,30	0,09	0,40	0,07
Mg in soil	0,30	0,04	0,51	-0,04
Ca in soil	0,35	0,24	0,50	-0,04
B in soil	0,14	0,07	0,31	-0,07
Cu in soil	0,36	-0,38	0,23	-0,25
Mn in soil	0,20	0,19	0,37	-0,54
Zn in soil	0,36	0,16	0,50	-0,16
relation Ca: Mg in the soil	-0,14	0,40	-0,24	-0,12
relation Ca: K in the soil	0,25	0,15	0,50	-0,08
Detected at harvest (-1) or later (1)			-0,46	

SUMMARY OUTPUT

Total saccharide in apple juice, g/100g

Regression Statistics

Multiple R	0,888
R Square	0,788
Adjusted R Square	0,698
Standard Error	0,900
Observations	51



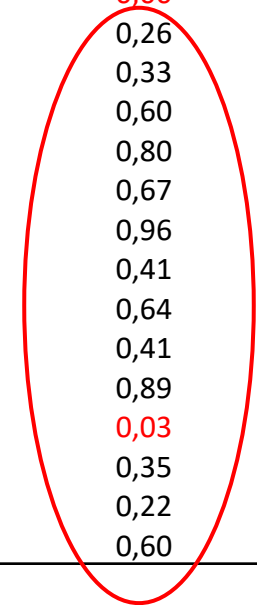
In general, juice properties are cultivar-dependent. Select a proper cultivar for the orchard site – **winterhardness** and **ripening time** (vegetation period)

ANOVA

	df	SS	MS	F	Significance F
Regression	15	105,62	7,04	8,70	8,11E-08
Residual	35	28,33	0,81		
Total	50	133,95			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	10,018	0,925	10,832	0,00	8,14	11,90	8,14	11,90
Coded by soluble solids (2 very good, 1 good, -1 satisfy, -2 bad)	1,198	0,195	6,131	0,00	0,80	1,60	0,80	1,60
solids2	0,162	0,142	1,145	0,26	-0,13	0,45	-0,13	0,45
Continental or maritime (-1 & 1)	-0,434	0,437	-0,993	0,33	-1,32	0,45	-1,32	0,45
Quadrants	0,138	0,261	0,528	0,60	-0,39	0,67	-0,39	0,67
Quadrant2 kv	0,061	0,236	0,257	0,80	0,42	0,54	-0,42	0,54
pH	0,216	0,507	0,426	0,67	-0,42	1,25	-0,81	1,25
pH2	0,014	0,267	0,053	0,96	0,42	0,56	-0,53	0,56
organic in soil	0,264	0,317	0,832	0,41	-0,42	0,91	-0,38	0,91
organic in soil2	-0,056	0,118	-0,478	0,64	-0,29	0,18	-0,29	0,18
Phosphorus	0,003	0,003	0,837	0,41	0,00	0,01	0,00	0,01
phosphorus2	0,00000	0,000	0,140	0,89	0,00	0,00	0,00	0,00
Potassium	-0,008	0,004	-2,309	0,03	-0,02	0,00	-0,02	0,00
Potassium2	0,000	0,000	0,950	0,35	0,00	0,00	0,00	0,00
Boron	-1,028	0,816	-1,261	0,22	-2,68	0,63	-2,68	0,63
Boron2	0,525	0,989	0,531	0,60	-1,48	2,53	-1,48	2,53

Example of a multiple regression model



Genotypes by the highest juice yield 2025

Genotypes by the highest juice yield

2024

Genotype	juice yield, %
Maimu	69,9
Pig's orchard	67,9
Šampanjer	66,7
Liivika	65,9
Sidrunkollane talion	65,9
73-15-155	65,6 (63,7 - 67,6)
Pavilosta cider apple	64,5
Auksis	64,2 (48,9 - 70,6)
Sinap Orlovskii	63,1 (55,2 - 67,3)
Kerr	60,7 (52,5 - 75,9)



+ Lietuvas Pepiņš 66% in 2025

Lietuvas Pepiņš (Leedu Pepin, Lietuvos Pepinas, Glogierowka)

63.01 – 66.0

Kuku

55.5 – 65.4

Auksis

25.6 – 65.6

VF-4-102

61.4

Cidross (Nr.19-97-154)

60.6

VF-7-58

59.7

VF-3-94

60.3

Kerr

43.3 – 61.3

Sandra

61.4

Sidrunkollane taliõun

48.6 – 63.0

Genotypes with the highest soluble solids

Ritika	15.9 – 16.2
Pūres Sidrābols (P 53-1)	11.3 – 15.3
Dagda's Bitter	16.6
Lidumnieki plumapple	15.6
Black Dabinet	15.4
Dabinett	12.6 – 16.8
Pavilosta cider apple	14.8
Bērzukroga dzeltenais	14.7
Malus prunifolia	13.8 – 15.7
Kuku	17.0
VF-7-58	17.1
Hypslop	16.6
Kerr	11.2 – 14.6

Genotypes with highest soluble solids

Genotype	soluble solids, Brix%	
	fresh juice	frozen juice
Pavilosta cider apple	16,8	14,8
Dagda's Bitter	16,6	
Ritika	16,4	16,2
Dabinet	16,4 (15,9 - 16,8)	13,3
Lidumnieki plumapple	15,8	15,6
Pūres sidrābols	15,6	15,3
Black Dabinet	15,4	
H-13-97-14	14,2	14,0
Malus prunifolia	14,2	13,8
Auksis	12,4 (11,5 - 14,0)	12,0 (10,8 - 13,7)
Pig's orchard		13,4
Sliņķis		13,8
Yarlington Mill		14,1
Sinap Orlovskii		12,4 (11,8 - 13,6)

TOP 10

2024

TOP 10

Total saccharide in apple juice

Dabinett	11.4 – 17.2
Ritika	14.0 – 16.5
Kuku	16.5 – 17.7
Nr.7-15-135	17.0
Malus prunifolia Nr.9 (dzeltena plūmjlapu, yellow Chinese crab)	15.3
Hypslop	16.3
Kerr	10.3 – 14.7
Dagda's Bitter	14.7 – 16.9
H-1-03-1	11.7 – 14.1
Valentino	14.3

Dagda's Bitter	14,7
Black Dabinet	14,7
Dabinet	14,2 (11,4 - 15,4)
Ritika	14,0
Pūres sidrābols	13,7
Lidumnieki plumapple	13,5
Slinkis	12,9
H-13-97-14	12,8
Kerr	11,6 (10,3 - 12,6)
Auksis	10,9 (9,37 - 12,7)

2024

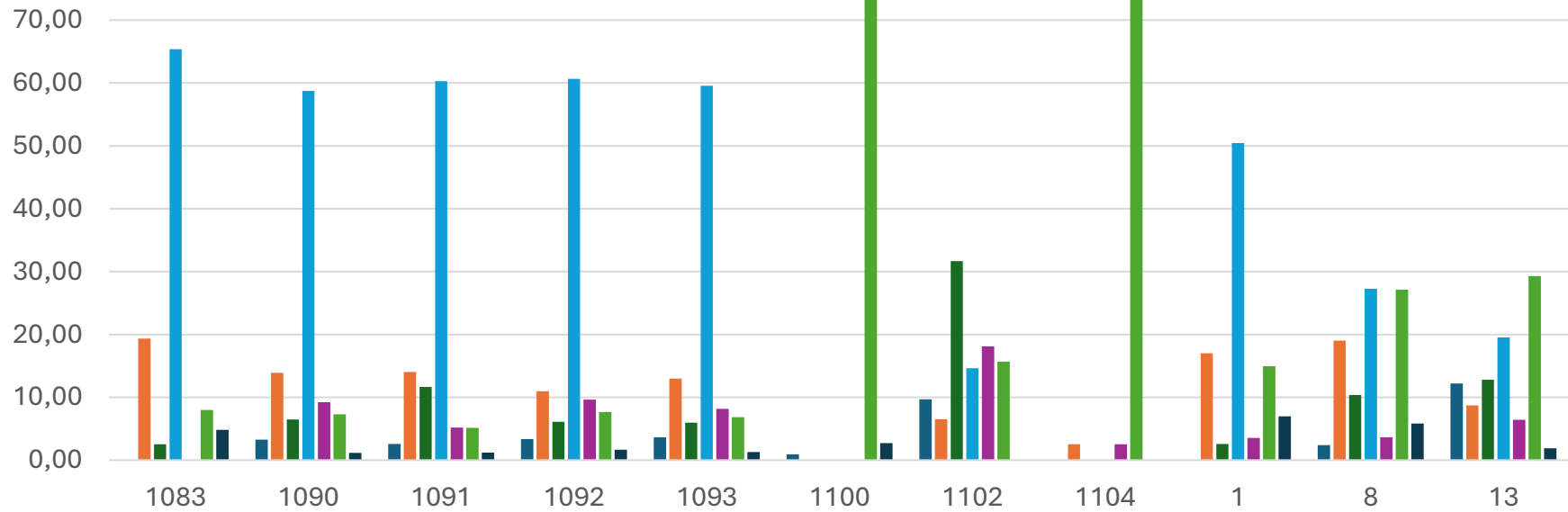
TOP 10

TOP
10

'AUKSIS' (2024)



1083	Tori
1090	Jaanihanso
1091	Kodas
1092	Polli
1093	Kloostrimetsa
1100	Kloostrimetsa (own juice)
1102	Jaanihanso (own juice)
1104	Tori (own juice)
1 (LV)	LatHort
8 (LV)	LAUSKIS
13 (LV)	Tālavas SIA



- acetic acid, butyl ester
- 2-hexenal
- 2-hexen-1-ol (E)
- hexanal
- acetic acid, hexyl ester
- 1-butanol, 2-methyl, acetate
- 1-hexanol

2-Hexenal

Aldehyde with a distinctly fresh aroma; gives fruit juices a natural freshness and herbal note.

1-Hexanol

A combination of alcohol with the aroma of grass, and plants; gives juices a touch of naturalness.

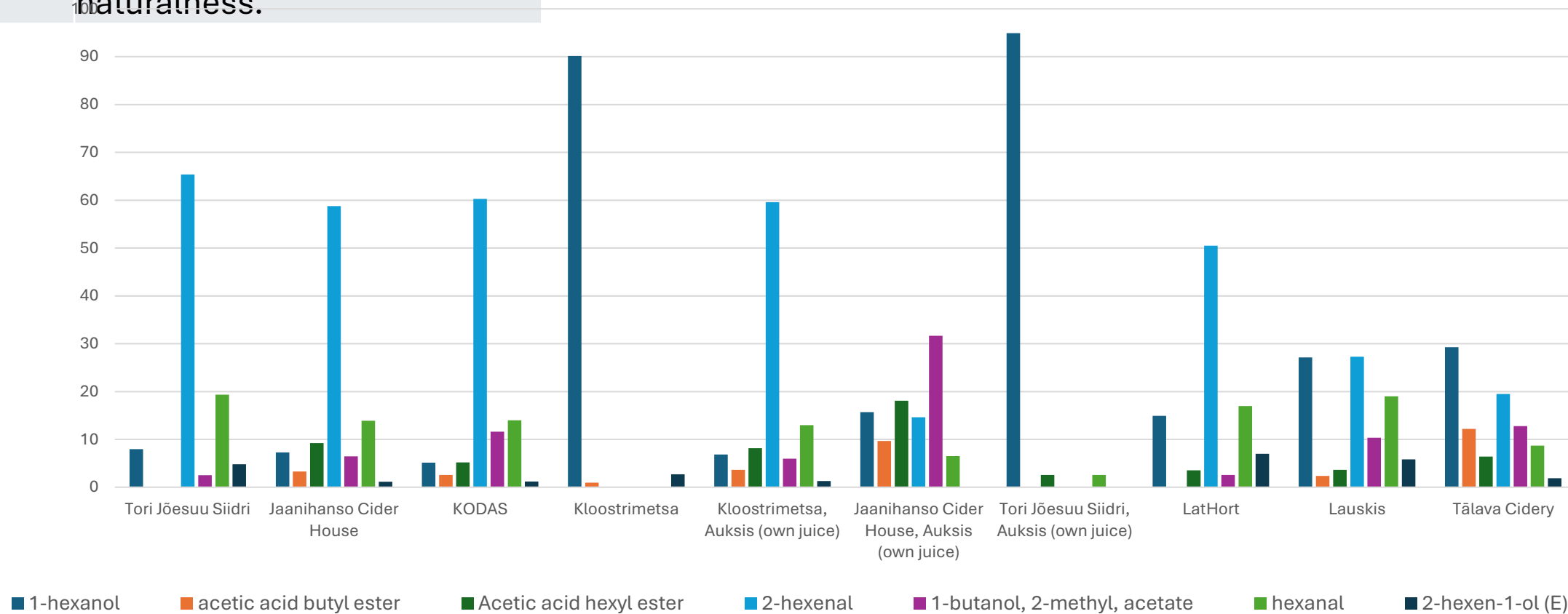
2-Hexenal

Aldehyde with a distinctly fresh aroma; gives fruit juices a natural freshness and herbal note.

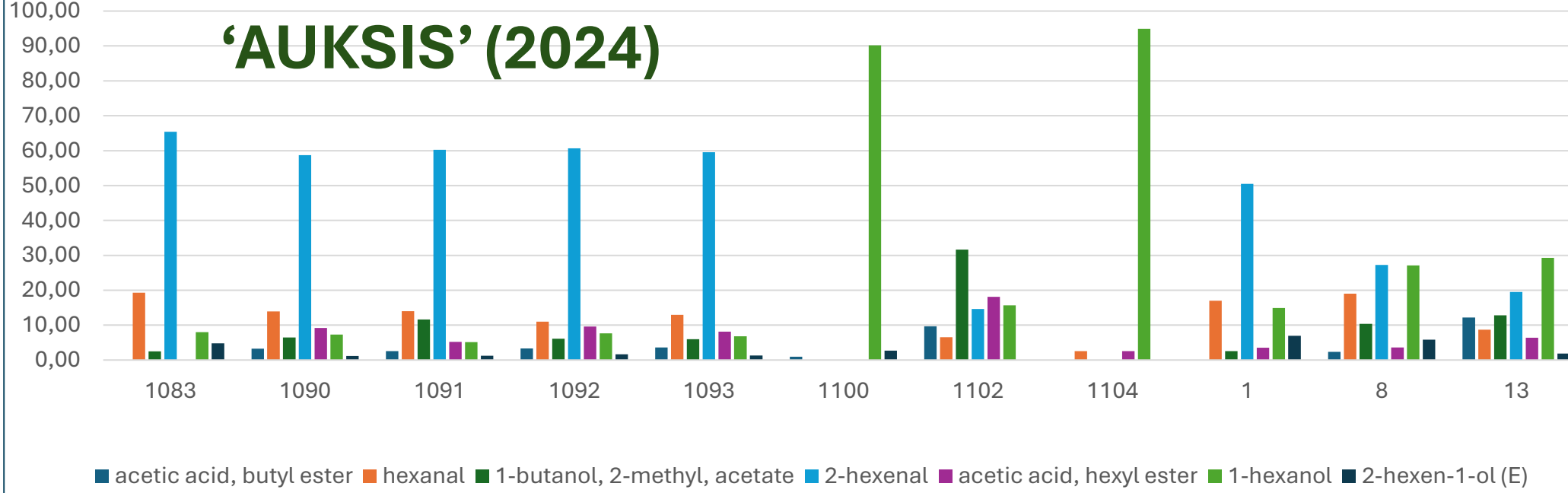
1-Hexanol

A combination of alcohol with the aroma of grass, and plants; gives juices a touch of naturalness.

'AUKSIS' (2025)

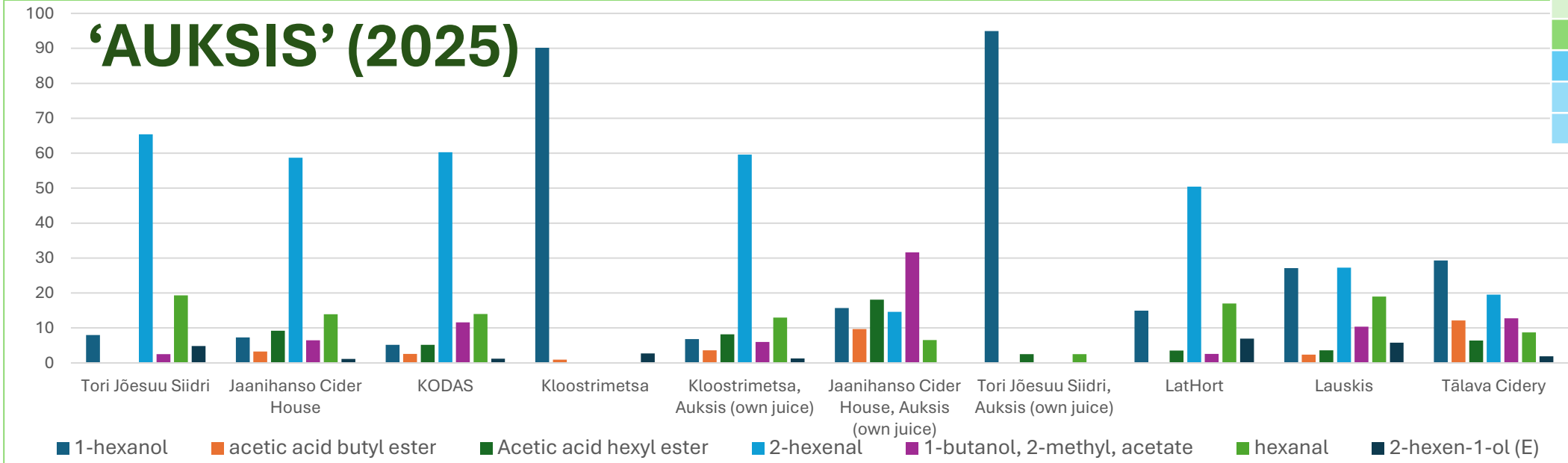


'AUKSIS' (2024)



1083	Tori
1090	Jaanihanso
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'AUKSIS' (2025)



2-Hexenal
Aldehyde with a distinctly fresh aroma; gives fruit juices a natural freshness and herbal note.

1-Hexanol
A combination of alcohol with the aroma of grass, and plants; gives juices a touch of naturalness.

CIDERS

Chemical name	Nr.1 AGA, NORWAY	Nr.2 TALAVA	Nr.3 JEPIS	Nr.4 MURBUDU ROSE	Nr.5 MURBUDU LIO	Nr.6 LAUSKIS	Nr.7 ABULS KERR	Nr.8 SABILE KS1-24
Sorbic Acid (sour, fatty)		8.37	3.40	8.13				
Butanoic acid, ethyl ester (fruity, sweet)	0.90		4.55	0.95	0.54	0.28	0.81	0.66
Phentylethyl Alcohol (green, grassy, aldehydic)						10.94	5.27	
Hexanoic acid, ethyl ester (fruity, sweet)	4.36	1.83	3.12	5.20	2.14	2.43	5.13	7.05
Octanoic acid (fruity, sweet)	11.97	11.04	22.08	13.26	13.21	9.89	19.27	
Acetic acid, hexyl ester (fruity, sweet)	2.96	0.21		3.88	3.05		2.57	2.72
n-Decanoic acid (sour, fatty)	5.47	9.04	8.58	7.73	13.30	7.02	13.93	
Octanoic acid, ethyl ester (fruity, sweet)	16.88	2.82	8.40	10.91	12.68	6.08	16.36	23.49
Decanoic acid, ethyl ester (fruity, sweet)	4.71	1.04	3.25	3.94	9.07	3.10	5.54	18.04
Carbon dioxide (neutral, mild)	0.49	10.52	5.25	4.97	5.60	7.47	1.29	3.95
Hydrazine, methyl- (neutral, mild)	20.28	24.64	6.62				4.05	
Acetic acid (sour, fatty)		4.71	2.78		1.59	5.95	2.69	3.11
1-Propanol, 2-methyl- (alcoholic, fusel)	1.25	0.96		2.95	1.50	0.93		4.47
1-Butanol (alcoholic, fusel)	0.88	0.82	1.04	1.18	1.21	1.59	0.80	0.90
Ethyl acetate (fruity, sweet)	5.76	6.08	2.96	3.60	4.80	12.98	3.06	6.23
1-Butanol, 3-methyl- (alcoholic, fusel)	16.12	12.51	22.12	22.79	13.86	15.19	7.66	22.57

CIDERS

Chemical name	Nr.1 AGA, NORWAY	Nr.9 PLUME LP	Nr.10 HERBST	Nr.11 WILD	Nr.12 TORI AU	Nr.13 TORI TAL	Nr.14 JAANIHAN SO AU	Nr.15 SEAAIA KLOOST RIMETSA	Nr.16 JAANIHAN SO LI
Sorbic Acid (sour, fatty)									
Butanoic acid, ethyl ester (fruity, sweet)	0.90	0.45	0.64	0.21	0.47	0.32		0.10	0.55
Phentylethyl Alcohol (green, grassy, aldehydic)		8.02	7.40	14.10	8.80	6.00	9.19	4.50	4.57
Hexanoic acid, ethyl ester (fruity, sweet)	4.36	4.68	5.67	1.12	4.16	4.32	3.29	0.70	2.01
Octanoic acid (fruity, sweet)	11.97	10.56	3.02		4.33	9.60	6.33	1.35	4.20
Acetic acid, hexyl ester (fruity, sweet)	2.96	2.21			1.12	5.03		0.10	0.12
n-Decanoic acid (sour, fatty)	5.47	10.42	6.25	0.28	3.08	12.98	2.81	1.63	0.96
Octanoic acid, ethyl ester (fruity, sweet)	16.88	7.00	12.13	2.26	12.68	14.21	12.00	0.80	4.65
Decanoic acid, ethyl ester (fruity, sweet)	4.71	3.14	15.71	1.17	7.54	14.87	3.31	0.52	0.70
Carbon dioxide (neutral, mild)	0.49	4.28	8.03		4.37	2.12	3.06	1.46	5.07
Hydrazine, methyl- (neutral, mild)	20.28		12.79		14.20	17.61	6.53		
Acetic acid (sour, fatty)		1.33	0.98	1.00	0.88	0.58	5.36	4.33	2.21
1-Propanol, 2-methyl- (alcoholic, fusel)	1.25		0.93	0.42	1.56		2.35	0.51	0.88
1-Butanol (alcoholic, fusel)	0.88	0.74	1.07	0.33	0.23	0.20	0.33	0.18	0.46
Ethyl acetate (fruity, sweet)	5.76	4.52	3.10	2.85	12.38	2.59	9.30	8.83	3.98
1-Butanol, 3-methyl- (alcoholic, fusel)	16.12	20.00	12.72	13.07	15.37	3.96	20.41	6.56	18.37

CIDERS

Sugars, acids

Chemical name	Nr.1 AGA, NORWAY	Nr.2 TALAVA	Nr.3 JEPIS	Nr.4 MURBUDU ROSE	Nr.5 MURBUDU LIO	Nr.6 LAUSKIS	Nr.7 ABULS KERR	Nr.8 SABILE KS1-24
Saccharides, g /100 g	3.85	3.36	1.22	3.19	0.68	1.81	0.70	0.72
Malic acid, (g/L)	5.39	0.64	5.73	9.26	5.38	1.83	4.40	5.56

Chemical name	Nr.1 AGA, NORWAY	Nr.9 PLUME LP	Nr.10 HERBST	Nr.11 WILD	Nr.12 TORI AU	Nr.13 TORI TAL	Nr.14 JAANIHANSO AU	Nr.15 SEAAIA KLOOSTRIMETSA	Nr.16 JAANIHANSO LI
Saccharides, g /100 g	3.85	0.97	1.07	5.21	1.47	0.85	1.29	1.02	3.27
Malic acid, (g/L)	5.39	8.46	1.95	3.04	4.41	6.49	0.81	0.10	0.65