

Crit	Calving month	Δ milk alp	Δ milk total	Δ d	p-value
Lact #	9	5.3	16.9	0.0070	1.16E-01
	10	7.0	17.5	-0.0036	5.74E-01
	11	11.3	18.8	-0.0071	4.55E-04
	12	16.2	19.8	-0.0077	1.69E-03
	1	18.9	19.4	-0.0066	4.61E-01
	2	21.4	19.8	-0.0080	1.00E+00
Pregnancy stage	9	23.2	2.5	0.0333	2.16E-15
	10	18.4	4.3	0.0278	1.98E-20
	11	12.1	4.1	0.0250	1.40E-27
	12	6.4	3.6	0.0203	6.84E-18
	1	2.5	2.9	0.0161	1.63E-04
	2	1.0	2.8	0.0202	1.93E-01
THI-3d	9	3.2	0.2	0.0065	1.78E-01
	10	1.8	0.3	0.0039	1.17E-01
	11	1.3	0.4	0.0030	1.28E-01
	12	0.1	0.1	0.0004	1.00E+00
	1	0.8	0.6	0.0023	5.38E-01
	2	1.5	1.7	0.0046	4.96E-02
THI-30d	9	0.1	0.0	0.0002	1.00E+00
	10	2.3	0.3	0.0049	3.57E-02
	11	1.9	0.5	0.0044	5.24E-03
	12	0.8	0.4	0.0022	3.10E-01
	1	0.6	0.5	0.0018	1.00E+00
	2	1.0	1.1	0.0030	5.30E-01
CSI-3d	9	-1.3	-0.1	-0.0026	1.00E+00
	10	-0.1	0.0	-0.0002	1.00E+00
	11	-0.7	-0.2	-0.0017	1.00E+00
	12	-0.4	-0.2	-0.0011	1.00E+00
	1	-0.5	-0.4	-0.0015	1.00E+00
	2	-0.8	-0.9	-0.0023	9.23E-01
CSI-30d	9	-0.7	0.0	-0.0014	1.00E+00
	10	-0.2	0.0	-0.0004	1.00E+00
	11	0.2	0.1	0.0005	1.00E+00
	12	0.2	0.1	0.0004	1.00E+00
	1	-0.6	-0.5	-0.0018	9.44E-01
	2	-1.4	-1.6	-0.0043	7.45E-02
Precipitations in sping	9	9.3	0.5	0.0189	3.77E-16
	10	8.4	1.2	0.0181	1.22E-32
	11	7.2	2.0	0.0171	6.47E-44
	12	6.0	2.9	0.0159	3.93E-39
	1	5.5	4.2	0.0159	2.09E-25
	2	5.1	5.8	0.0157	1.52E-19

Crit	Calving month	Δ milk alp	Δ milk total	Δ d	p-value
Biogeographical region	9	10.4	0.6	0.0209	3.82E-20
	10	9.2	1.3	0.0198	9.38E-47
	11	8.2	2.3	0.0196	1.69E-73
	12	6.9	3.3	0.0183	3.84E-59
	1	5.3	4.0	0.0152	4.47E-19
	2	5.1	5.9	0.0159	2.37E-11
Altitude	9	5.3	0.3	0.0107	6.72E-07
	10	5.3	0.7	0.0115	1.18E-18
	11	5.6	1.6	0.0133	1.35E-44
	12	4.6	2.2	0.0121	1.10E-37
	1	3.6	2.8	0.0104	2.57E-14
	2	3.7	4.2	0.0115	5.20E-12
Difference in altitude	9	1.2	0.1	0.0025	1.00E+00
	10	1.1	0.2	0.0023	3.30E-01
	11	2.2	0.6	0.0052	2.27E-07
	12	2.6	1.3	0.0070	2.14E-13
	1	3.5	2.7	0.0101	3.84E-15
	2	3.8	4.3	0.0118	2.59E-13
Aspect (100m)	9	0.4	0.0	0.0008	1.00E+00
	10	0.8	0.1	0.0018	6.76E-01
	11	0.3	0.1	0.0006	1.00E+00
	12	0.3	0.1	0.0007	1.00E+00
	1	0.3	0.2	0.0008	1.00E+00
	2	-0.2	-0.3	-0.0008	1.00E+00
Aspect (1km)	9	1.6	0.1	0.0032	5.04E-01
	10	1.1	0.2	0.0025	1.78E-01
	11	0.8	0.2	0.0020	7.99E-02
	12	0.7	0.4	0.0020	8.61E-02
	1	0.5	0.4	0.0015	1.00E+00
	2	0.4	0.4	0.0012	1.00E+00
Height	9	7.7	14.9	-0.0137	7.31E-04
	10	8.5	14.5	-0.0125	4.68E-06
	11	9.9	14.7	-0.0091	3.89E-04
	12	11.5	14.7	-0.0089	9.68E-03
	1	11.2	12.4	-0.0022	1.00E+00
	2	11.9	10.9	0.0105	9.12E-01
Foot angle	9	2.8	6.6	-0.0095	1.32E-02
	10	3.3	6.2	-0.0079	2.60E-03
	11	4.8	7.2	-0.0082	3.21E-03
	12	7.4	8.4	-0.0065	4.39E-01
	1	9.6	9.3	-0.0025	1.00E+00
	2	11.1	9.4	-0.0005	1.00E+00

Sup. Mat. S1: For each criterion and calving month, the between-group difference in milk production in the alp and over the total lactation cycle is reported, together with the Δ d (reflecting how differently the two groups are impacted by alping) and its associated significance.