

Supplementary Table S2

Productivity and technical efficiency of suckler beef production systems: trends for the period 1990 to 2012

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Annual mean values of the 43 Charolais suckler cattle farms, of the structural, technical and economic variables for each year (constant sample from 1990 to 2012)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Annual Work Units, AWU	2,094	2,131	2,133	2,147	2,143	2,160	2,183	2,170	2,219	2,179	2,168	2,187	2,191	2,205	2,214	2,192	2,181	2,120	2,115	2,092	2,016	2,008	2,001
Utilized Agricultural Area, UAA ha	121,701	124,852	128,366	138,252	138,775	145,636	149,252	152,340	152,558	152,681	153,816	158,591	159,693	162,364	167,055	169,484	169,423	172,652	176,418	178,542	180,142	185,807	186,090
Livestock Units (LU)	123,324	129,711	134,523	137,573	142,488	148,317	155,140	158,112	159,731	159,210	163,908	170,797	168,538	166,556	168,111	169,398	171,142	173,791	179,629	182,941	185,666	182,924	181,880
UAA ha/AWU	57.645	58.190	60.106	63.387	65.472	67.737	68.341	71.550	68.903	70.574	72.365	73.530	74.028	74.659	76.896	78.783	78.840	81.477	83.141	85.307	90.509	93.026	93.225
LU/AWU	58.637	60.574	62.649	64.213	66.608	68.596	70.953	73.148	71.945	73.350	76.457	78.529	77.450	76.166	76.763	78.269	79.145	82.455	85.304	87.497	93,219	92,683	92,256
Main Forage Area, MFA ha	95,157	98,602	100,174	105,626	109,646	116,107	119,614	121,837	121,873	124,320	125,253	129,685	130,383	133,671	137,611	138,546	138,271	141,838	144,038	145,628	146,631	149,022	149,075
MFA % UAA	82.270	82.912	81.953	81.658	82.473	83.254	83.640	83.547	83.233	84.174	84.268	84.523	84.453	84.778	84.499	84.401	84.233	84.685	84.026	83.745	83.564	83.604	83.485
Crop area ha	26,544	26,250	28,192	29,626	29,129	29,523	29,639	30,479	30,660	28,361	28,562	28,906	29,287	28,693	29,443	30,938	31,153	32,380	32,914	33,511	36,785	37,015	
Cash crop area ha	19,927	19,337	20,205	18,855	16,344	17,590	17,863	19,516	19,618	16,918	17,131	15,466	16,674	13,751	16,138	16,900	16,606	15,989	18,357	19,902	18,474	22,666	23,599
Crop sidelined for feed ha	6,618	6,913	7,651	8,067	9,310	9,061	9,643	9,577	9,590	9,590	9,778	11,575	10,677	13,005	11,585	11,642	11,961	12,565	13,300	12,459	14,478	14,006	13,234
Cattle area ha (MFA+Crop sidelined for feed)	101,775	105,515	107,825	113,693	118,956	125,167	129,257	131,414	131,463	133,909	135,031	141,260	141,061	146,676	149,197	150,188	150,222	154,402	157,338	158,087	161,109	163,028	162,309
Cattle area % UAA	87.936	88.483	87.875	87.222	89,120	89,489	89,939	89,762	89,552	90,547	90,532	91,548	90,775	92,325	91,181	91,088	91,074	91,748	91,303	90,570	91,448	91,056	90,611
Specialization	83,429	82,445	81,502	85,222	86,250	85,523	86,124	85,806	84,855	86,106	85,669	88,688	86,405	89,147	86,515	88,134	86,896	87,077	89,486	86,158	85,360	88,025	86,332
Stocking rate LU/ha MFA	1,288	1,305	1,326	1,295	1,294	1,273	1,300	1,294	1,309	1,297	1,313	1,317	1,297	1,250	1,224	1,221	1,236	1,262	1,268	1,275	1,234	1,224	
Stocking rate LU/ha Cattle area	1,206	1,222	1,236	1,207	1,194	1,202	1,212	1,214	1,183	1,193	1,219	1,212	1,202	1,144	1,130	1,127	1,136	1,134	1,156	1,166	1,158	1,127	1,121
Numerical productivity	88,318	88,256	89,286	88,431	87,359	86,343	88,827	88,260	88,857	87,159	89,315	87,511	88,767	88,049	88,831	88,165	87,391	86,972	86,066	83,680	85,634	85,974	86,433
Kg live-weight produced (Kglw)	37 001,990	38 682,119	40 422,631	42 360,253	43 330,325	45 634,360	47 827,750	49 201,537	49 984,543	50 806,780	52 278,488	51 682,154	52 929,224	52 465,758	54 022,800	54 561,800	54 588,200	56 073,871	56 124,711	56 551,576	58 387,783	57 499,509	59 734,188
Kglw/LU	295,318	295,472	296,027	304,414	302,647	304,716	305,267	308,128	310,282	317,600	319,758	320,350	313,513	314,817	317,968	321,649	318,430	321,394	312,874	306,840	315,484	316,324	326,912
Kglw/AWU	17 225,479	17 932,958	18 634,730	19 483,326	20 106,259	20 791,145	21 534,999	22 424,879	22 224,363	23 158,522	24 255,026	23 619,149	24 161,850	23 770,197	24 346,805	25 034,184	25 117,354	26 416,364	26 512,621	26 868,947	29 134,811	28 964,594	30 085,909
Kglw/ha MFA	380,559	386,559	394,886	394,520	392,600	390,066	398,589	401,332	408,172	409,979	419,502	399,530	407,323	394,931	390,943	393,042	394,584	397,033	395,487	392,484	405,411	392,287	403,885
On-farm fattened animals % animals sold	40,994	46,959	41,448	41,496	42,195	41,645	44,409	43,172	41,188	39,733	43,377	45,183	44,471	42,165	37,560	37,338	35,238	36,003	35,877	37,006	37,485	35,475	36,628
On-farm fattened males % males sold	41,507	42,803	38,500	40,729	38,669	38,007	41,716	39,139	36,033	35,568	34,375	34,518	31,769	30,851	27,078	26,669	24,733	26,178	24,170	27,982	26,615	25,929	26,154
On-farm fattened kglw % kglw produced	45,461	52,957	47,729	47,045	47,167	47,805	50,875	50,610	49,628	47,324	49,890	52,398	53,338	50,672	46,096	44,953	43,185	43,438	43,232	44,387	44,758	43,692	44,259
On-farm fattened € % € from animals sold	44,730	51,267	46,145	45,763	45,875	46,698	50,325	49,297	47,761	45,472	48,453	52,378	49,072	46,673	43,379	42,430	40,086	41,130	41,142	41,447	42,139	41,068	42,232
Concentrates kg/LU	489,517	476,369	497,861	479,459	490,037	494,953	538,445	560,417	590,998	555,176	558,569	592,779	625,558	758,975	669,136	688,660	686,783	618,910	674,742	675,634	717,612	731,411	720,475
Purchased concentrates kg/LU	235,212	240,315	254,363	219,599	224,283	224,191	238,418	254,360	278,222	262,465	267,723	278,848	310,916	400,079	373,776	320,640	328,640	367,782	336,970	340,214	338,441	344,289	362,534
On-farm produced concentrates kg/LU	254,304	236,053	243,500	259,859	265,755	270,402	291,607	306,056	312,076	292,711	290,846	313,932	314,643	358,897	295,359	368,021	338,516	311,130	337,774	335,420	379,170	387,122	357,941
Concentrates kg/kglw	1,630	1,619	1,688	1,567	1,612	1,607	1,745	1,889	1,739	1,737	1,955	2,005	2,426	2,093	2,140	2,133	1,906	2,141	2,171	2,263	2,299	2,170	
Purchased concentrates kg/kglw	0,782	0,813	0,867	0,716	0,738	0,719	0,768	0,821	0,890	0,821	0,838	0,933	1,015	1,301	1,170	1,011	1,080	0,940	1,061	1,102	1,056	1,080	
On-farm produced concentrates kg/kglw	0,847	0,806	0,822	0,851	0,874	0,887	0,948	0,999	0,989	0,989	1,022	0,991	1,125	0,923	1,129	1,053	0,997	1,079	1,070	1,206	1,219	1,084	
Feed self-sufficiency	87,493	87,857	87,309	87,746	87,427	87,337	86,457	85,710	84,992	85,876	85,710	84,763	83,998	79,229	82,879	82,362	82,448	84,227	82,816	82,710	81,603	80,513	81,684
Total feed self-sufficiency	94,164	94,049	93,696	94,562	94,398	94,430	94,106	93,738	93,178	93,554	93,339	92,998	92,251	88,643	90,626	92,015	91,327	92,388	91,675	91,507	91,549	90,667	91,073
Kglw produced without concentrates	30 878,410	32 318,342	33 084,927	35 806,239	36 823,764	38 128,068	37 955,224	39 471,219	41 103,584	42 566,906	43 466,266	40 050,137	41 510,932	38 604,377	41 523,353	44 090,542	43 553,704	43 238,287	40 231,820	42 778,288	43 582,886	39 253,289	43 975,299
Kglw produced without concentrates % kglw	84,475	84,001	83,488	85,427	86,184	84,878	80,914	81,920	83,230	84,807	83,908	79,012	79,596	74,371	79,246	82,344	82,129	79,247	74,359	78,060	77,259	70,152	75,491
Maize % MFA	5,682	5,926	5,410	6,111	4,456	4,373	4,737	4,569	4,116	4,075	3,417	3,313	3,324	3,115	3,293	3,050	2,760	2,561	2,507	2,532	2,494	2,754	3,070
Mowed area % grassland	38,279	34,953	41,116	40,116	37,140	37,558	37,256	39,070	41,116	41,791	41,744	39,953	41,140	38,302	44,628	42,093	43,465	45,442	44,116	45,498	46,349	47,372	
Grass silage % grassland	6,826	7,171	9,219	10,524	10,176	10,525	10,770	13,684	13,276	14,378	14,430	13,684	14,210	13,250	15,111	15,501	15,205	10,134	17,514	19,069	19,167	24,536	21,140
Nitrogen fertilizers kg N/ha MFA	34,547	36,746	37,535	34,309	33,540	33,697	34,051	40,351	39,180	38,198	36,085	29,329	32,518	29,959	30,325	24,266	26,958	26,776	19,926	19,069	23,458	22,241	25,001
Cereal yield 100kg/ha	44,959	49,108	48,377	47,485	42,531	45,708	51,429	48,837	52,577	47,816	51,877	42,892	53,901	36,771	49,279	46,540	47,880	39,235	46,145	53,866	45,421	48,092	46,919
Nitrogen fertilizers kg N/ha UAA	49,725	50,926	50,952	45,745	44,652																		