Compensatory growth at pasture in weaned suckler bulls offered contrasting winter feeding levels

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Introduction

- Male cattle slaughtered as young bulls increasing
- Due to inherent production efficiency of bulls compared to steers reared similarly (O'Riordan et al., 2011)
- Traditionally high conc. diets
- Recent work to incorporate a grazing period to reduce production costs
- Optimal growth rate for first winter to exploit compensatory growth at grass unknown for bulls

Objective

- Determine most favourable growth rate during the first winter period for suckler bulls

Materials and Methods

- 120 Spring-born Charolais and Limousin sired suckler bulls
- Assigned to a: **3**

First winter growth rates

GS2, GS4, and GS6

x

2

Carcass weights

380 and 420kg

- Balanced for: Sire breed, Birth date, Initial weight, Dam breed

Materials and Methods

Production system

- First winter: 123 d
- Pasture: 99 d
  - Rotationally grazed in groups of 20
- Finishing period:
  - *ad libitum* concentrate + grass silage

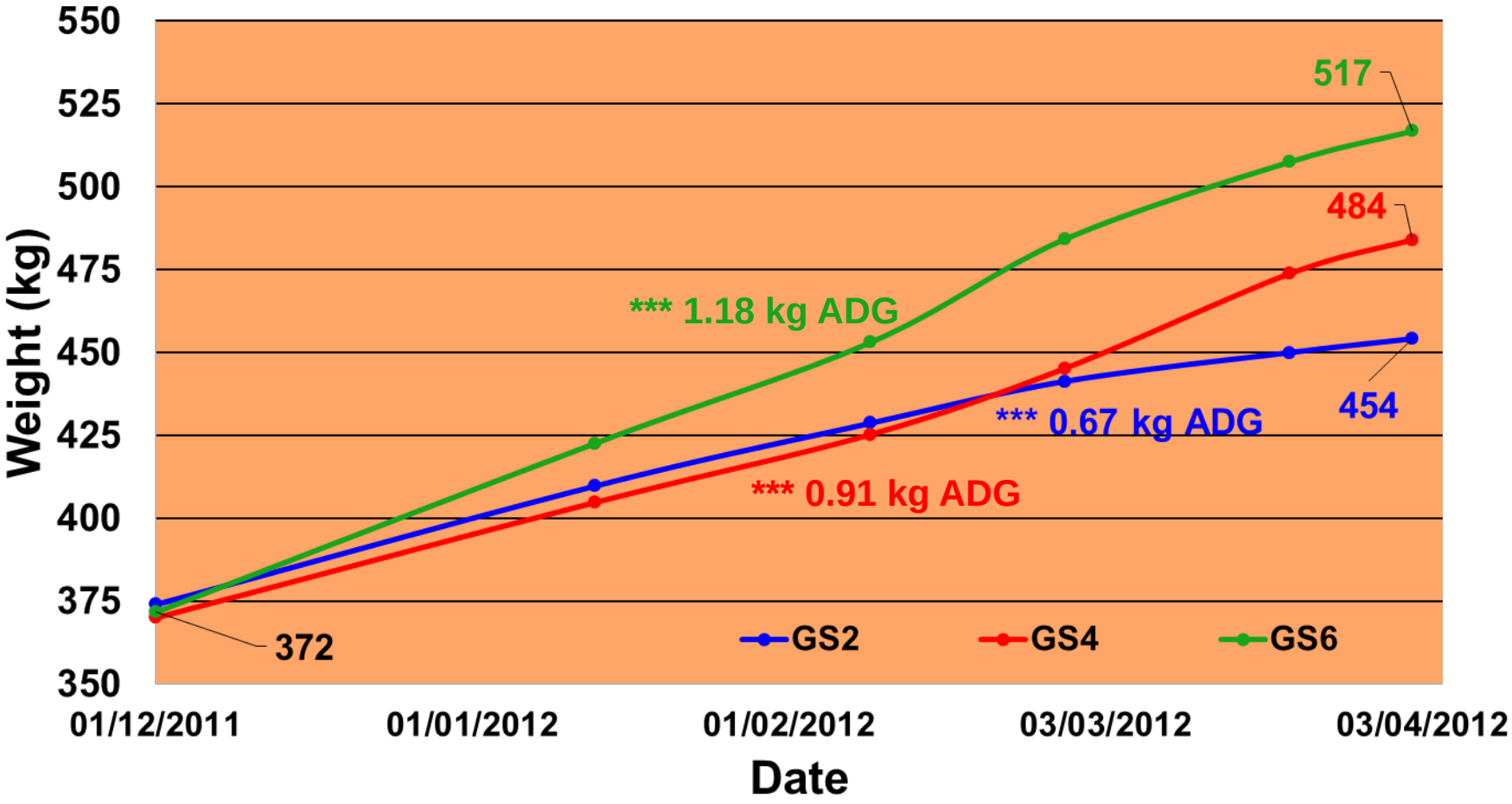
Measurements

- Intakes (pen basis)
- Live weight
- Carcass traits

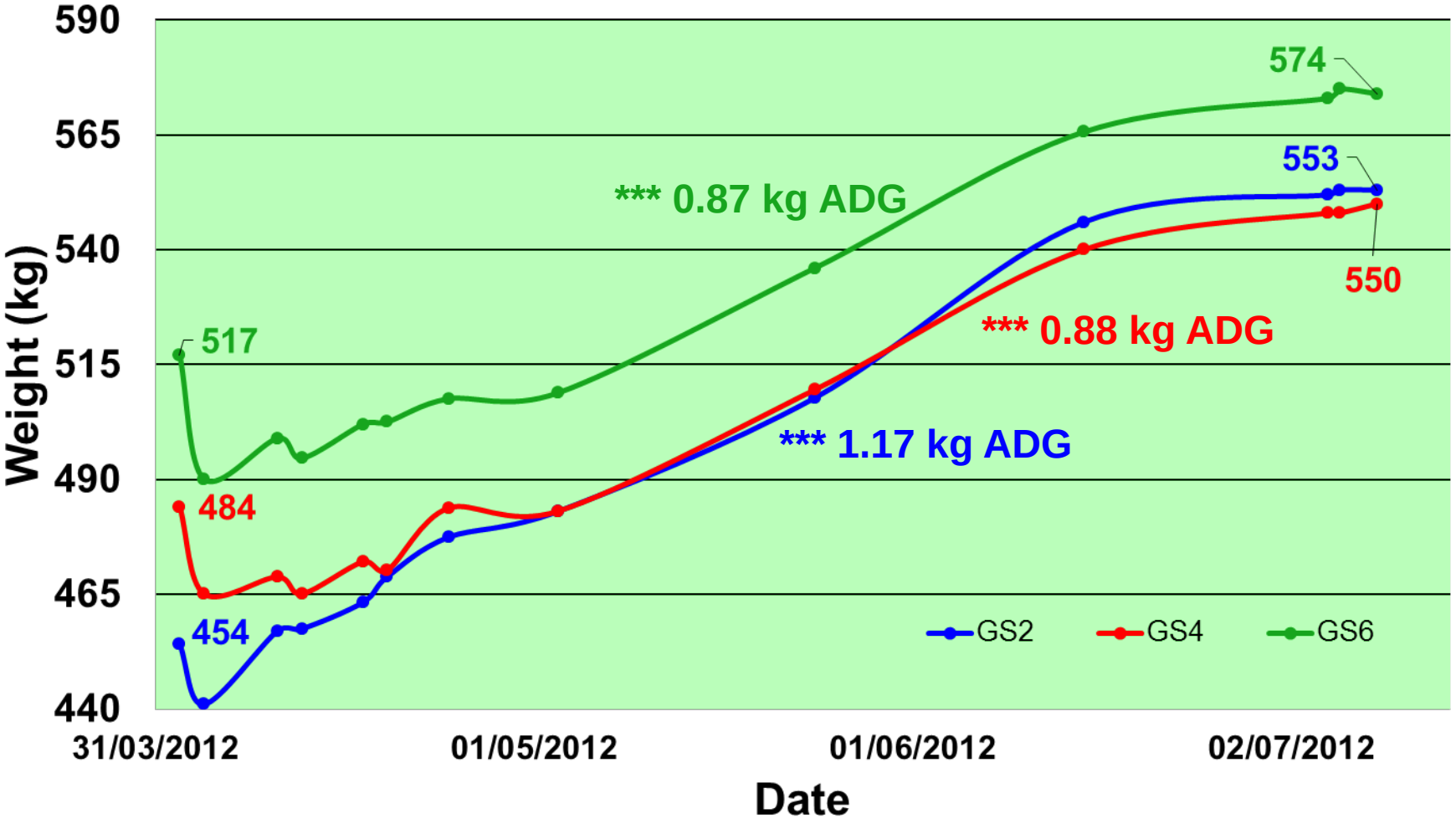
Results

- Data were analysed using Proc GLM of SAS.
- Fixed effects: Winter one growth rate, carcass weight, and sire and dam breed
- Covariate: Initial weight

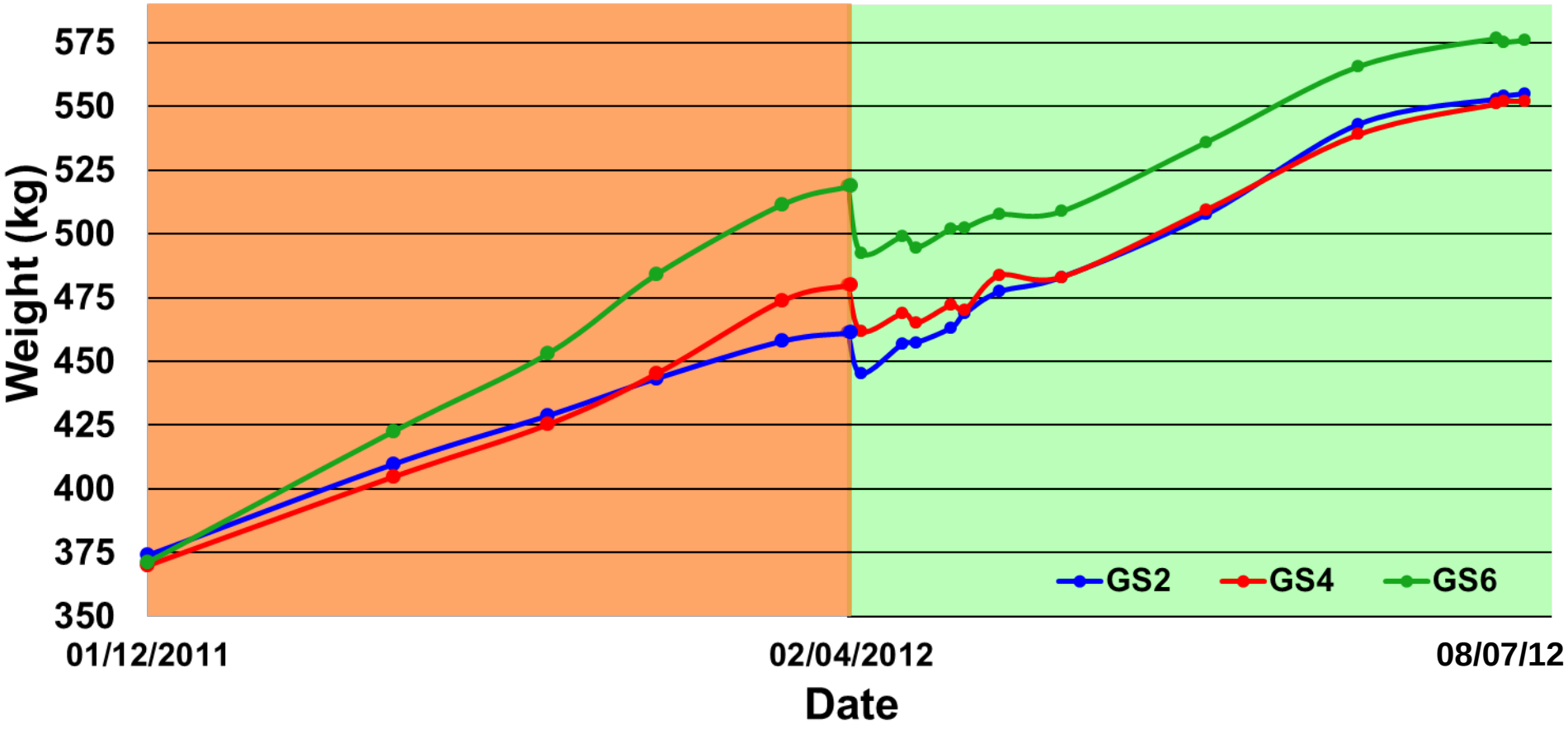
Results: First Winter



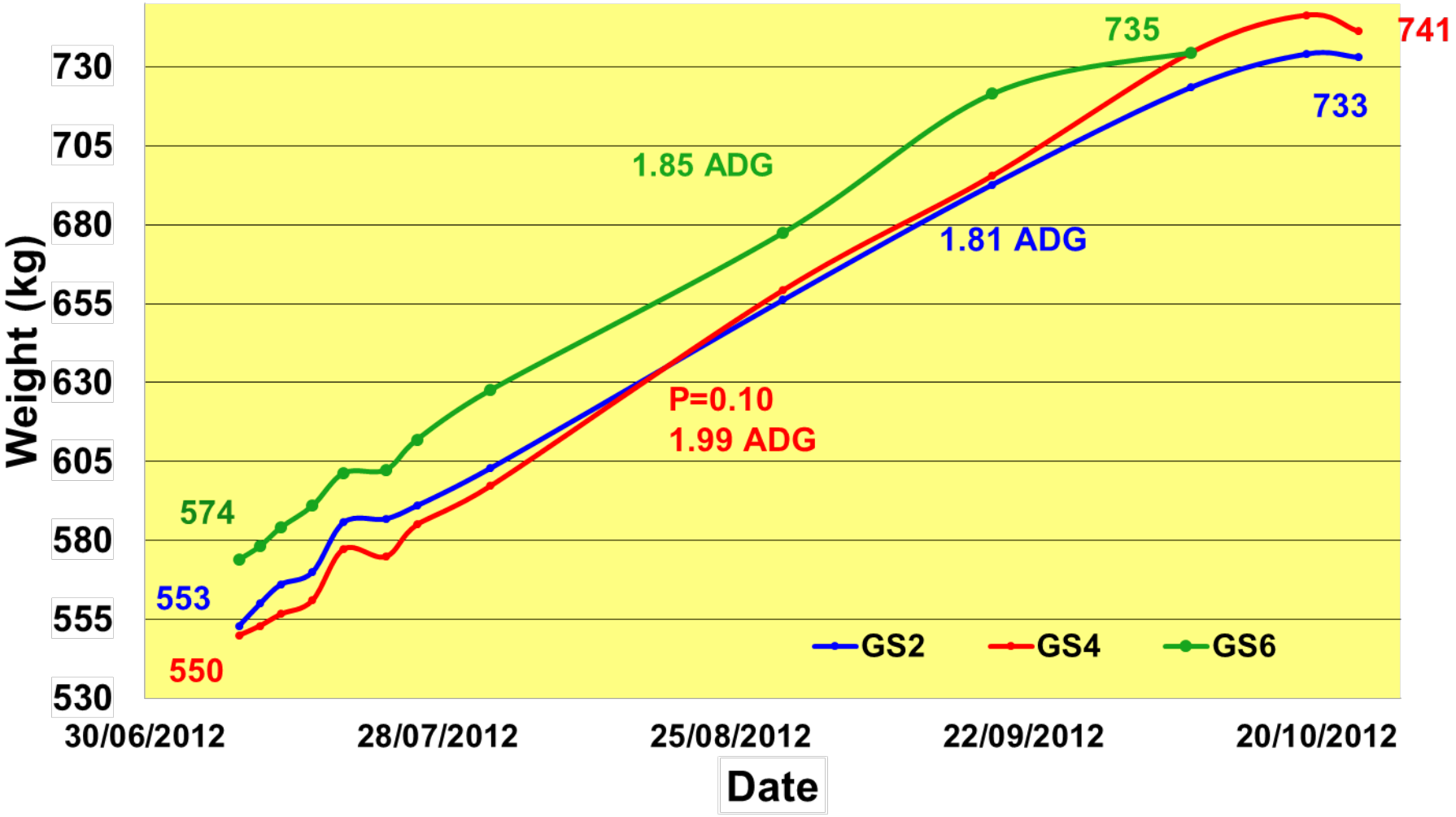
Results: Grass



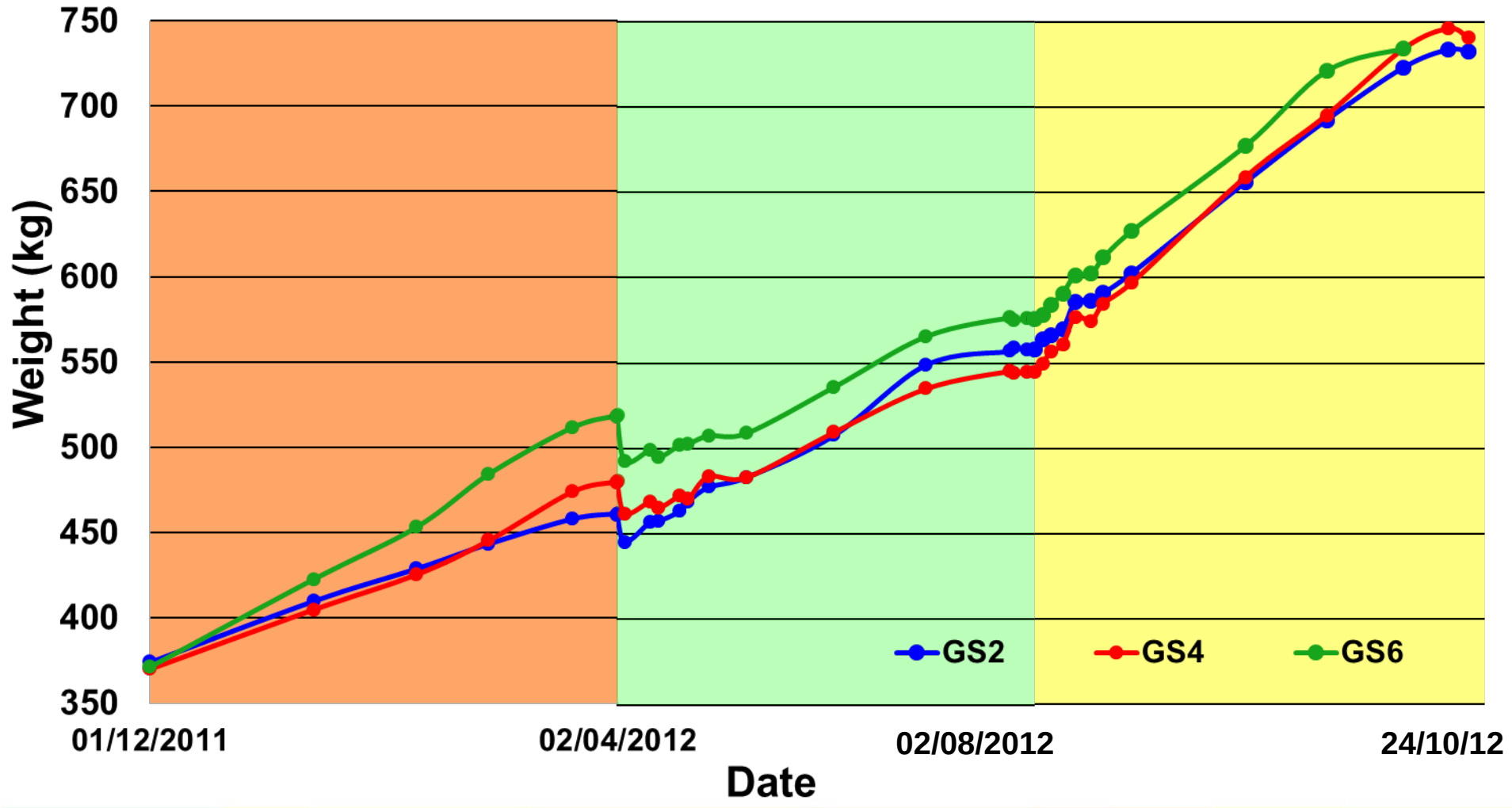
Results: First Winter / Grazing Period



Results: Finishing period



Results: Complete System



Results: Slaughter Data

	First Winter Growth Rate				
	GS2	GS4	GS6	s.e.m	Sig.
Duration of finishing period (d)	89	86	71	-	-
Slaughter weight (kg)	709	715	703	8.2	NS
Kill out proportion (g/kg)	566	564	562	3.5	NS
Carcass weight (kg)	401	403	395	5.1	NS
Carcass conformation (1-15)	9.9	9.9	9.4	0.23	NS
Carcass fat (1-15)	7.5	7.5	7.0	0.23	P=0.07
Concentrate DMI (kg/d)	10.6	10.7	10.8	0.23	NS
FCR (kg DM/kg ADG)	7.3	6.9	7.3	0.23	NS

Results: Slaughter Data

	Carcass Weight (kg)			
	380	420	s.e.m	Sig.
Slaughter weight (kg)	685	733	7.1	***
Kill out proportion (g/kg)	554	573	3.0	***
Carcass weight (kg)	379	420	4.4	***
Carcass conformation (1-15)	9.3	10.2	0.20	***
Carcass fat (1-15)	6.8	7.8	0.19	***
ADG finishing period (kg)	2.04	1.75	0.065	***
Finishing period: Duration (d)	62	102	-	-
Concentrate DMI (kg/d)	10.49	10.95	0.184	NS
FCR (kg DM/kg ADG	6.6	7.8	0.19	***
ADG post weaning - slaughter (kg)	1.12	1.12	0.024	NS

Conclusion:

- Increasing first winter growth rate had short term effects on ADG.
- However due to compensatory growth at pasture, by slaughter these effects no longer visible.
- Therefore no benefit in growing at above ~0.67 kg/day during first winter.
- Increasing carcass weight:
  - significantly increased kill-out proportion, carcass conformation and carcass fat.
  - significantly decreased ADG and FCR in the finishing period

Results:

	Winter 1 Concentrate Level				
	GS2	**GS4**	**GS6**	**s.e.m**	**Sig.**
ADG first winter (kg)	0.67	0.91	1.18	0.044	***
Turnout-pasture weight (kg)	454	484	517	5.34	***
Post turnout weight (kg)	438	465	490	4.9	***
Housing weight (kg)	553	550	574	5.2	***
Slaughter weight (kg)	709	715	703	8.2	NS
ADG pasture corrected (kg)	1.17	0.88	0.87	0.034	***
ADG Finishing period (kg)	1.81	1.99	1.85	0.075	P=0.10
ADG post weaning – slaughter (kg)	1.09	1.12	1.15	0.029	NS