Relationships between Igenity panel scores and measured daily gain and carcass traits in Finnish beef bulls

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Introduction:
Identification of SNP markers tied to economically important traits with beef production are included in commercial DNA tests. Relatively little work has been done to validate the marker panels currently sold and marketed by commercial genotyping companies.

In the present study:
The objective was to assess the relationships of growth and carcass traits (EUROP-classification) to Igenity panel scores.

Data and hair samples were collected from Atria beef breed bull test station from 193 bulls of five different breeds.

Data was used to assess relationships between measured traits and Igenity panel scores.

Across all breeds the average daily gain between 0-365 days was 1.4 kg/d. The average slaughter weight was 387 kg, the carcass conformation score (EUROP) 9.0 (R+) and EUROP-fat class 2.9.

Data were used to assess the relationships of measured growth and carcass traits and Igenity panel scores for average daily gain (ADG), fat thickness, red meat yield and rib eye area (REA).

Results:

- Negative correlation (-0.18) between measured daily gain and Igenity ADG score
- No correlations between red meat yield and fat thickness with observed EUROP conformation and EUROP fat score
- A significant correlation (0.35) between Igenity panel score for REA with EUROP conformation score was observed

Table 1. Correlations between Igenity panel scores and measured traits.

	Igenity panel score			
Measured traits	ADG	Red meat yield	Fat thickness	REA
Birth weight, kg	-0,37 ***	0,23**	-0,12 (*)	0,22 **
200 day weight, kg	-0,10	-0,08	0,01	-0,06
365 day weight, kg	-0,21 **	0,09	-0,01	0,25 ***
Slaughter weight, kg	-0,35 ***	0,15 (*)	-0,06	0,32 ***
Conformation score, 1-15 (EUROP)	-0,32***	0,14	0,03	0,35 ***
Fat score, 1-5 (EUROP)	0,29***	-0,08	0,08	-0,18*
ADG 0-200 d, kg/d	-0,05	-0,12 (*)	0,03	-0,10
ADG 200-365 d, kg/d	-0,19**	0,18 *	-0,02	0,34 ***
ADG 0-365 d, kg/d	-0,18*	0,08	-0,01	0,23 **

Statistical significance: (*) P<0.10, * P<0.05, ** P<0.01, *** P<0.001.

Conclusions:
The limited material in the present study did not show clear evidence of functionality of the commercial genetic test with measured traits in Finnish production system.