

CHANGE

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Informing about higher levels of animal welfare increases sensory consumer liking of pork

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Does **individual morality** moderate information effects on the sensory experience of meat?



Herein, we use information about (German) husbandry levels differing in their measures to provide higher animal welfare.



= husbandry level 1



= husbandry level 3



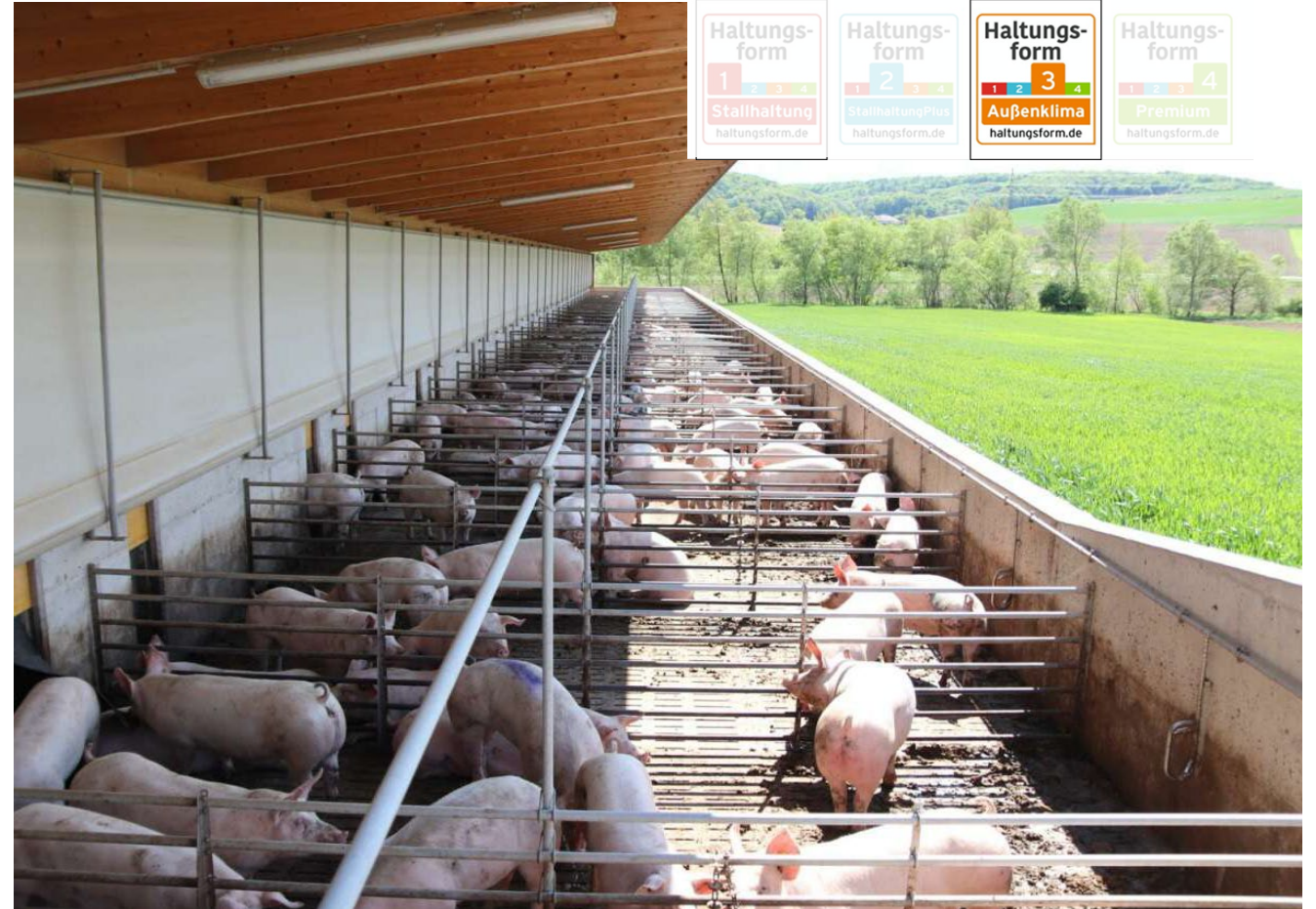
2020: 69.1%
2024: 11.5%

23.4%
71.0%

2.8%
10.3%

4.2%
6.3%

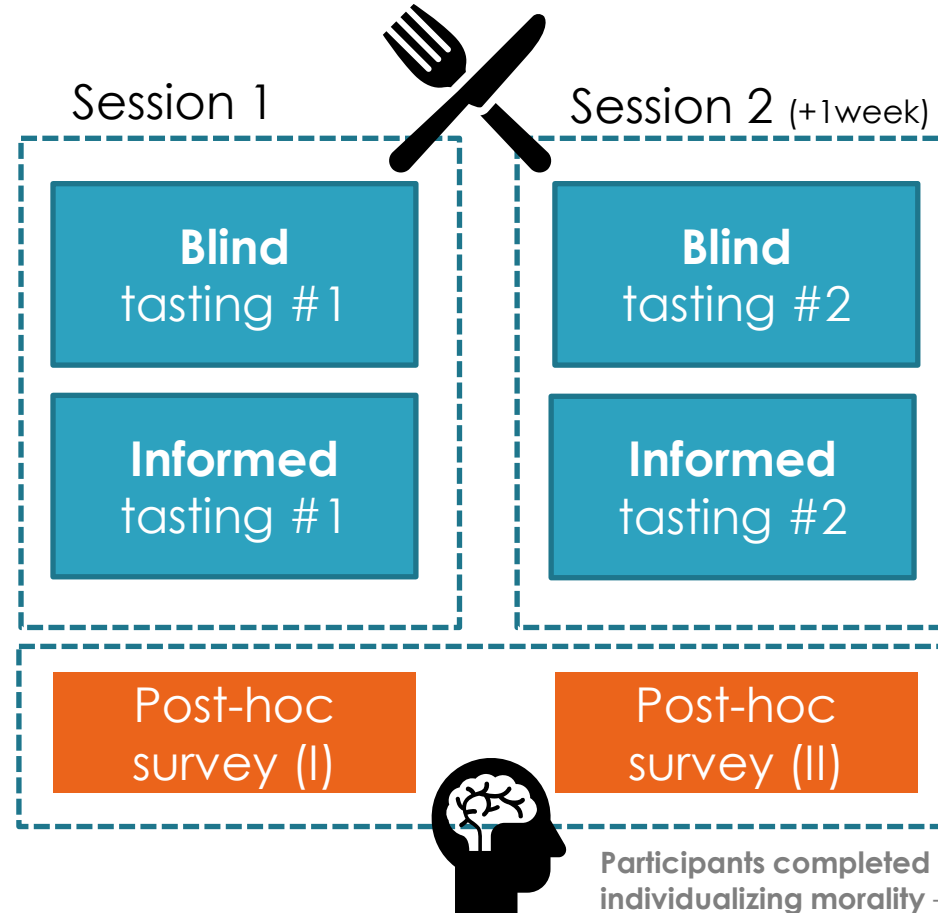
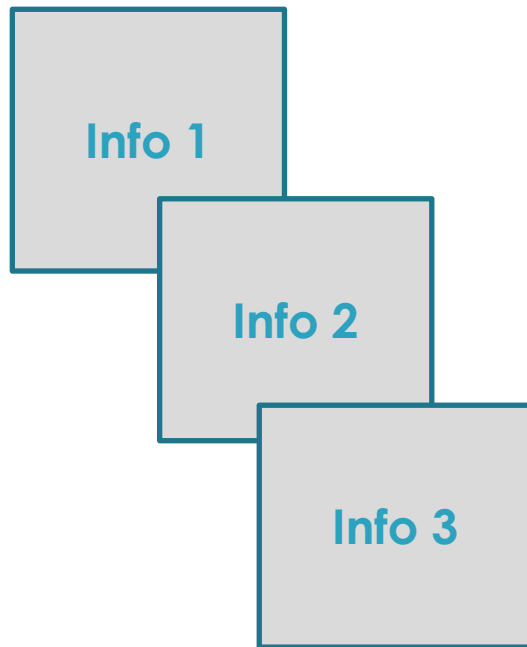
Compared to the standard (HL 1), HL3 provides higher welfare through +40% space, open front pens, and straw bedding.



All pre-recruited participants (N=295) attended two sessions in a sensory lab for a balanced evaluation of all conditions.



N=295
age M=41 yrs
50.2% female
30% daily meat
consumption



Four combinations of conditions (CP – CO; CI – PL; CP – PL; CI – CO) were possible with the pairs CP – CO + CI – PL and CP – PL + CI – CO being bound in order to complete all conditions within the two sessions. **The order of the condition combinations was randomized.**

Participants completed scales to assess **individualizing morality** – operationalized by the harm- and fairness-subscale of the moral-foundation-questionnaire and other control variables and demographics

Three control conditions and an MPE conditions were tested in a double blind, fully controlled sensory experiment.

1) CONTROL PURE (CP)

No info, **blind tasting** of meat of both label programs 1 vs 3



No label
HL 1 meat



No label
HL 3 meat

2) CONTROL IDENTICAL (CI)

No info, **blind tasting** of identical meat (both welfare level 3)



No label
HL 3 meat



No label
HL 3 meat

An information effect was tested while the type of meat presented was varied.

3) CONTROL ORIGINAL (CO)

(true) information on welfare level of the meat actually presented



HL 1



HL 3

4) PLACEBO (PL)

Information on welfare level, **yet identical meat** (level 3)



HL 3

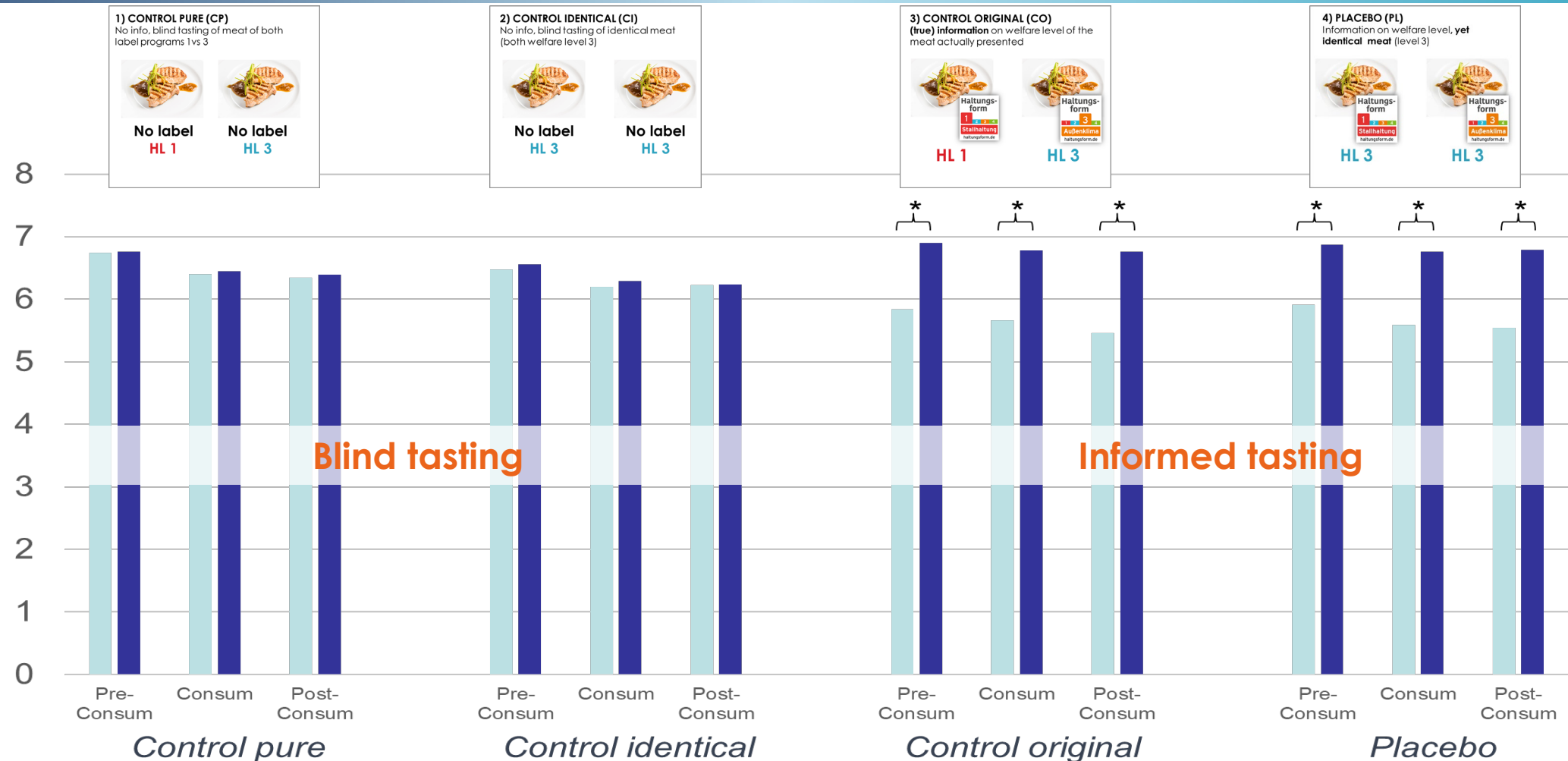


HL 3

Meat samples were double-blinded, prepared on contact plate grills (73°C) and presented to consumers.

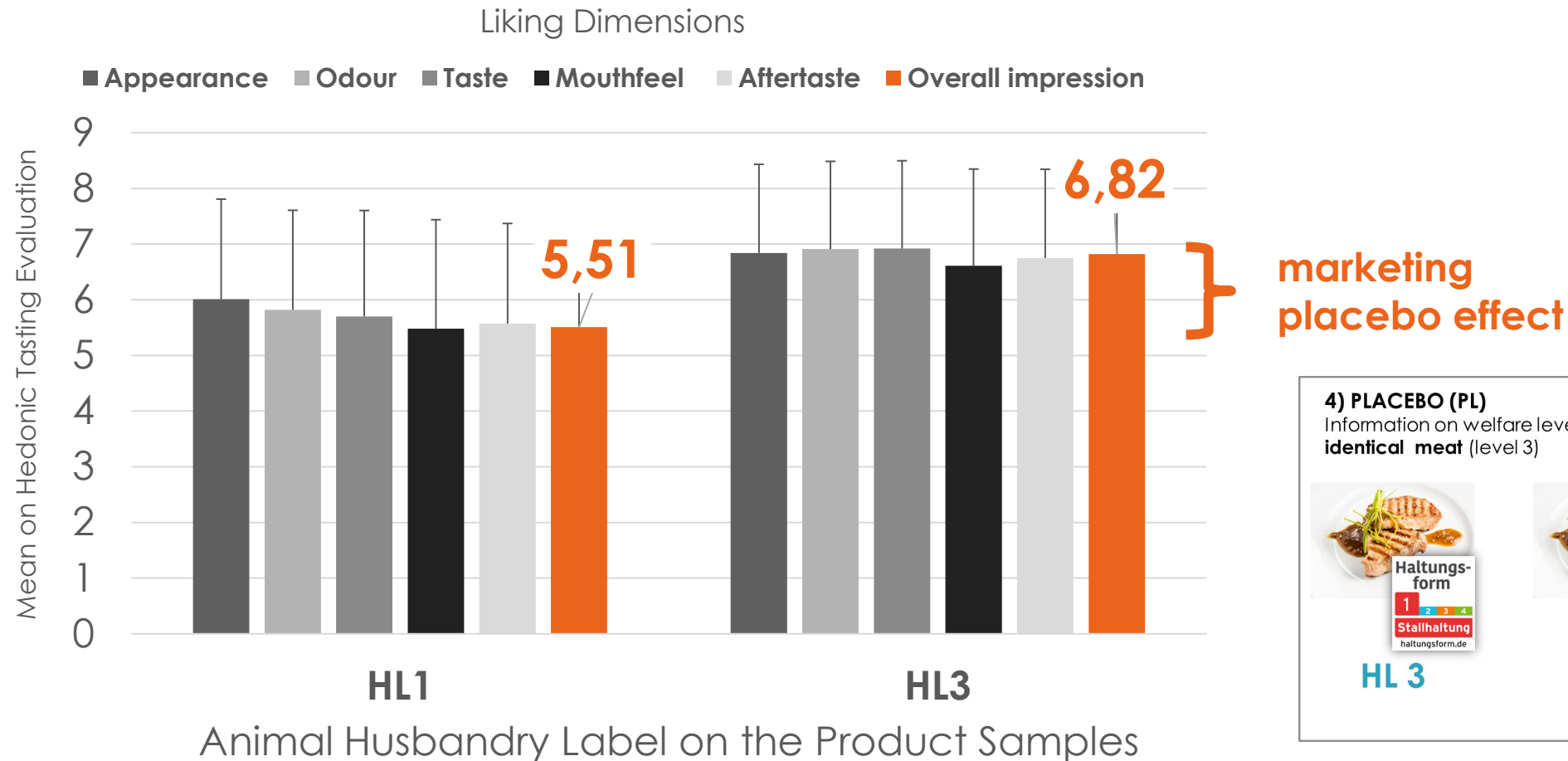


HL 3 labeling increases consumer liking regardless what type of meat was actually presented.

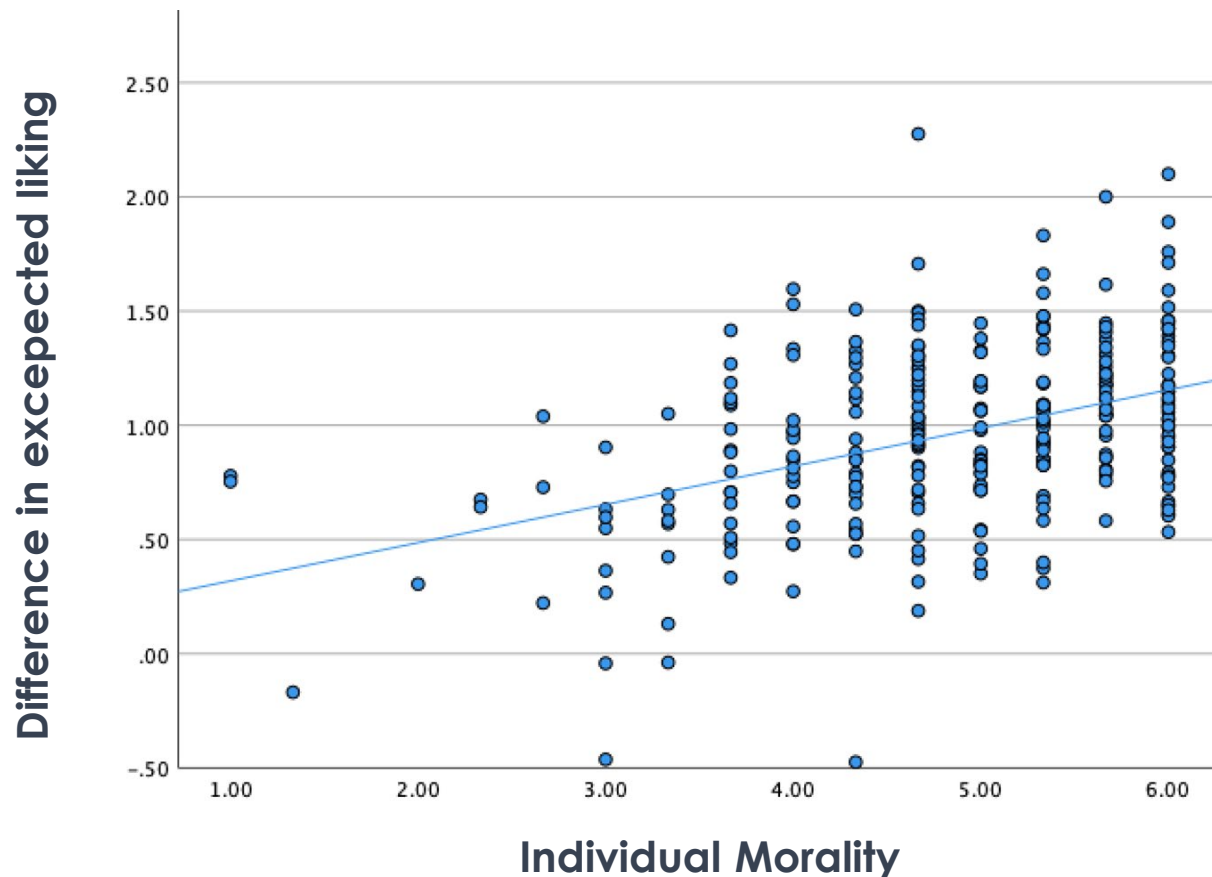


Note. * significant results of the RM-ANOVA Control identical: pre-consumption: $F(1, 292) = 107.473, p \leq .001, \eta_p^2 = .269$; consumption: $F(1, 292) = 102.251, p \leq .001, \eta_p^2 = .259$; post-consumption: $F(1, 292) = 175.49, p \leq .001, \eta_p^2 = .375$; Placebo: pre-consumption: $F(1, 286) = 116.057, p \leq .001, \eta_p^2 = .289$; consumption: $F(1, 286) = 140.016, p \leq .001, \eta_p^2 = .329$; post-consumption: $F(1, 286) = 175.56, p \leq .001, \eta_p^2 = .38$.

The marketing placebo, i.e. labelling the very same product with higher welfare level increases all sensory ratings.



Individual Morality affected the size of the Placebo effect (aka information on welfare).



Individual Morality (on the Moral Foundation of Fairness) has a **significant moderating effect on pre-consumption (expected liking)** of the Placebo condition.

($F(1, 284) = 7.244, p = .008, \eta p^2 = .025$)

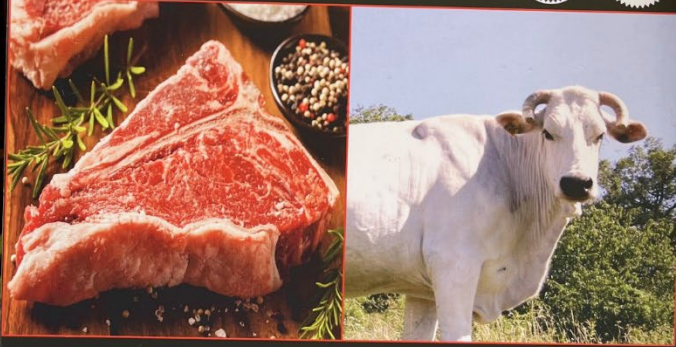
This is the first indication that individual morality might influence the taste perception of meat that suggests higher animal welfare.

- **Indication of better husbandry conditions enhances consumers' sensory appreciation of meat.**
 - even after accounting for factors like objective product quality and experiment-related confounds.
- Individual **moral beliefs** about **fairness and harm moderate the effect** on taste expectations.

Measures to increase animal welfare serve both, the animals and the consumer.

**LA NOSTRA SELEZIONE
DI BISTECHE**
.....
OUR STEAKS SELECTIONS

BISTECCA DI CHIANINA CERTIFICATA IGP
BISTECCA DI BOVINO ADULTO RAZZA CHIANINA CERTIFICATA,
COTTA AL SANGUE CON OLIO
EXTRAVERGINE DI REGGELLO (MIN. KG. 1,2)



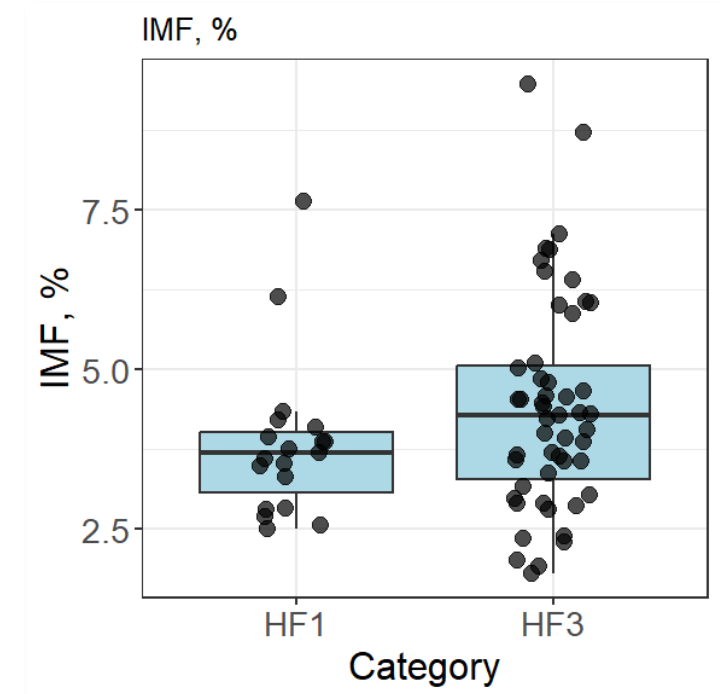
CHIANINA STEAK
THE CHIANINA STEAK (STEAK OF CHIANINA CERTIFICATED)
THE VALUABLE AND TIPICAL BEEF OF TUSCANY
COOKED RARE/MEDIUM, WITH JUST
EXTRA VIRGIN OLIVE OIL FROM REGGELLO (MIN. KG. 1,2)

**BISTECCA
ALLA FIorentina**



Physico-chemical analyses revealed little/no differences between the meat samples of HL 1 and HL 3.

	HL1 (n=20)	HL3 (n=51)	<i>p</i>
pH _U	5.44	5.50	.03
i.m. fat content (NIR)	3.84	4.43	.106
L* (brightness)	58.4	57.5	.189
a* (redness)	3.69	4.15	.154
cooking loss, %	22.5	22.1	.699
shear force, N	9.74	9.93	.868



¹sous-vide cooked, ² MORS razor shear

Prior to any tasting, all participants were informed about the welfare label to ensure a common understanding.

Textual summary

Mindestanforderungen für Programme, die Kriterien für Betriebe mit Schweinemast festlegen				
	Haltungsform 1 2 3 4 Stallhaltung haltungform.de	Haltungsform 1 2 3 4 StallhaltungPlus haltungform.de	Haltungsform 1 2 3 4 Außenklima haltungform.de	Haltungsform 1 2 3 4 Premium haltungform.de
Platz	• Mindestfläche 0,75 m ² /Tier	• Mindestfläche 0,825 m ² /Tier (mind. 10 % mehr Platz)	• Mindestfläche 1,05 m ² /Tier (mind. 40 % mehr Platz)	• Mindestfläche 1,5 m ² /Tier (mind. 100 % mehr Platz)
Haltung	• Stallhaltung	• Stallhaltung	• Stallhaltung mit Außenklima- reizen; mind. Offenfrontstall	• Stallhaltung mit ständigem Zugang zu Auslauf oder Frei- landhaltung
Beschäftigung	• organisches, rohfaserreiches Beschäftigungsmaterial	• organisches, rohfaserreiches Beschäftigungsmaterial • zusätzlich Raufutter	• organisches, rohfaserreiches Beschäftigungsmaterial • zusätzlich Stroh (als Einstreu oder Raufutter) oder vergleich- bares Material	• organisches, rohfaserreiches Beschäftigungsmaterial: Stroh oder vergleichbare Substrate
Fütterung	• QS-zugelassene bzw. QS-anerkannte Futtermittel	• QS-zugelassene bzw. QS-anerkannte Futtermittel	• Futtermittel ohne Gentechnik	• Futtermittel ohne Gentechnik. • mind. 20% Futtermittel aus dem eigenen Betrieb bzw. aus der Region
Tiergesundheitsmonito- ring	• 1. Befunddatenerfassung am Schlachthof (Eingabe in QS- Datenbank) • 2. qualifiziertes Antibiotika- monitoring	• 1. Befunddatenerfassung am Schlachthof (Eingabe in QS- Datenbank) • 2. qualifiziertes Antibiotika- monitoring	• Befunddatenerfassung am Schlachthof und qualifiziertes Antibiotikamonitoring ab 2022 verpflichtend • bis dahin ein dokumentiertes Tiergesundheitsmonitoring auf dem Betrieb inkl. Antibiotika- monitoring	• Befunddatenerfassung am Schlachthof und qualifiziertes Antibiotikamonitoring ab 2022 verpflichtend • bis dahin ein dokumentiertes Tiergesundheitsmonitoring auf dem Betrieb inkl. Antibiotika- monitoring
verpflichtende Programmtteil- nahme	QS oder als vergleichbar anerkannt	Initiative Tierwohl oder als ver- gleichbar anerkannt	Teilnahme an einem in der Haltungsform registriertem Programm	
ergänzende Hinweise	*Programme, die Kriterien für tierhaltende Betriebe gemäß den Anforderungen der EG-Öko-Verordnung oder gemäß den Anforderungen der ökologischen Anbauverbänden, die einen höheren Qualitätsstandard garantieren als die EG-Öko-Verordnung, festlegen, werden der Premium-Stufe zugeordnet.			

Audio-visual display (1 min. video)

