

Wagyu beef passes the taste test of science

August 10 2020, by Carolyn Martin



Westholme Wagyu beef is measured and sliced into the same sized portions before cooking and serving to consumer taste testing panel. Credit: University of Queensland

The unique flavor, texture and aroma of Australia's famous Wagyu beef can now be marketed using a world-first flavor profile developed by The University of Queensland in partnership with the Australian Agricultural Company (AACo).

Sensory and flavor expert Dr. Heather Smyth and the Australian Agricultural Company's Westholme brand are behind the new flavor [wheel](#), designed to provide product descriptors and to differentiate the different wagyu cuts and marbling grades.

Flavor wheels are commonly used by the wine, seafood, coffee, beer and cocoa industries to describe flavor and sensory properties, but the science has been applied to wagyu beef for the first time.

Dr. Smyth, from the Queensland Alliance for Agriculture and Food Innovation (QAAFI), said the flavor wheel will help to increase Australian wagyu's credentials and marketability for export.

"Westholme's flavor wheel has many applications and is a significant development for the industry. For example, the flavor wheel will enable exporters and chefs to select Wagyu products based on the specific sensory experience they will provide consumers—including aroma, flavor, texture and after-taste," Dr. Smyth said.

During blind taste tests of a selection of Westholme and other premium

wagyu beef samples, an experienced flavor panel identified nearly 100 words to describe wagyu based on sensory attributes across texture, aroma and flavor.

A meat scientist oversaw the cooking process to ensure each sample was grilled to medium with an internal temperature above 60°C.

"I would describe the flavor as intensely caramelized—a tender roasted juiciness, buttery and dissolving sweetness in the mouth that lingers," Dr. Smyth said. "Some cuts are more delicate with complex notes such as game meat, white pepper notes, fresh bread crust and hints of brassica."

The Westholme Wagyu flavor wheel paves the way for premium Australian beef to stand out on menus around the world and is thought to be a global first for any red meat.

"AACo wanted accurate and informative tools to describe the unique flavor and [sensory properties](#) of Westholme Wagyu, so we developed a language tool—a lexicon—which can be used for marketing and product education," Dr. Smyth said.

Dr. Heather Smyth holding Westholme Wagyu in the sensory test kitchen.



Wagyu beef samples were cooked to a perfect 60 degrees. Credit: University of Queensland

It taps into how the "terroir" – the unique environment of the vast, natural grasslands of Northern Australia where Westholme cattle are produced—and other factors such as the animals' genetics, age, gender, diet, handling and processing imparts a unique flavor signature into Westholme beef.

Quality assurance offered by the flavor wheel reinforces the provenance of premium Wagyu beef.

Dr. Smyth envisaged the flavor science could spearhead geographical indicators such as 'western Queensland Wagyu' as a clear mark of provenance and quality comparable to Coffin Bay oysters or King Island cheese.

"This research lifts Australian beef to a new standard as world-leading producers of distinctive, quality food," she said.

Westholme Wagyu beef is measured and sliced into the same sized portions before cooking and serving to consumer taste testing panel.



A consumer panellist smells the aroma of the Wagyu beef and submits feedback.
Credit: University of Queensland

AACo's CEO Mr Hugh Killen said, as Australia's premium Wagyu brand Westholme is distinctly different from other [beef](#) brands.

"We were lacking the technical information, the science, to demonstrate this to our customers, which is why we helped develop the flavor wheel," Mr Killen said.

"We wanted to be the first in the industry to show the value of our premium product at home and abroad—to clearly demonstrate the distinct flavors of home-grown, quality Australian Wagyu and then be able to properly describe these differences. There is a lack of understanding and education around Australian Wagyu and this wheel can help change that. We're extremely passionate about showcasing our product and our point of difference, but also about innovating and driving education in this space."

Provided by University of Queensland

Citation: Wagyu beef passes the taste test of science (2020, August 10) retrieved 7 August 2024 from <https://phys.org/news/2020-08-wagyu-beef-science.html>

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