

## NE-SARE Goose Sensory Evaluation

Gozzard City team member Suzanne Podhaizer studied Sensory Evaluation at the University of Vermont. In February, she coordinated a taste test, comparing information about birds from our three test groups.

**Goal:** To determine and describe differences in the flavors and textures of goose between the experimental groups of geese and compare goose to other types of locally available poultry.

### Methods: Comparison Between Groups of Geese

In a blind taste test, participants sampled meat from birds in each of our three test groups, prepared in two different ways – confit and seared breast.

**Training:** Eight participants were given evaluation forms to fill out, in order to track their responses to the various products. These forms included terms that are typically used to describe cooked poultry (selected from the meat-tasting protocol compiled by American Livestock Breeds Conservancy, in collaboration with Slow Food USA & Chefs Collaborative), a comparison of how similar the products are to each other, and a preference rating of the three products. Participants were coached in how to fill out the forms properly.

**Cooking:** Legs were cooked at a 300-degrees fahrenheit in goose fat, seasoned only with salt (which was applied by weight), until the meat was falling off the bone (four hours). Breasts were patted dry, seasoned with salt (by weight), the fat was rendered, and the meat was seared to an internal temperature of 135-degrees. The breasts were rested for five minutes prior to slicing and serving.

**Tasting:** Meats were presented on color-coded plates, confit first, and breast second. Water was provided so participants could clear their palates.

#### Difference from Proposal:

Although we planned to do a tasting of liver, too, because of the way we processed and packaged livers, we were unable to isolate livers from the different groups for the taste test.

We added a question about which “labelling” terms are the most compelling.

### Results:

**Grass vs. Grain:** Participants were asked to guess which of the groups received the least grain, the middle amount of grain, and the most grain. 3 of the 8 participants claimed that they didn’t have enough information to make any guess. Of those who guessed, two guessed all groups

correctly. Two only guessed on one group, but got that group correct. One guessed completely wrong.

However, answers to other questions indicate that even if they can't articulate the distinctions between grass-fed and grain-fed meats, participants **could** detect the differences. For instance, all participants labelled meat from the yellow group using words such as tough, chewy, musky, gamey, grassy, and natural; and meat from the blue group using words such as fatty, tender, greasy, buttery and tasting of corn.

**Qualitative Results:** Participants wrote as many descriptors as they found appropriate for each product. For each group, we selected the words that were unique to each taster's assessment of each product (if they said fatty every time, we didn't record it). Terms that indicate difference between the group fed the least grain and the group fed the most grain are in bold.

**Comparison Between the Groups:** Participants were asked to indicate how different or similar the products were from one another, on a scale of 1 (totally different) – 5 (exactly the same). Because of the small sample size there is very low statistical significance. Nonetheless, participants scored the groups that got the least grain (yellow) and most grain (blue) as most different from one another (2.6 for confit, 2.6 for breast). The group that got the least grain (yellow) and the group that got the middle amount of grain (red) as somewhat similar (2.8 for confit, 2.8 for breast), and the group that got the middle amount of grain (red) and the group that got the most grain (blue) as most similar (3.1 for confit, 3.1 for breast). Note that the participants were totally consistent in their rankings of the two products.

Results suggest that even if they can't fully articulate the differences in the products, they are detecting them.

**Preference:** Participants ranked the meats on a scale from 1 to 5, with one being "hate it" and 5 being "love it." In the confit category, participants preferred the blue product, ranking it at 4.3. The red product scored 3.9, and the yellow 3.6. Because the legs of the birds were slightly different sizes (blue group larger, yellow group smaller), and the blue birds had the most fat to begin with, while the yellow group had the least, we hypothesize that the smaller legs from the yellow group might have become overcooked in the same amount of time that it took the legs from the blue group to cook perfectly.

The breast ranking showed different results. In this category, the red group received the highest score of 4.2, the blue group scored 3.8, and the yellow group scored 3.3. Participants indicated that the red group meat had the richest flavor, "like steak," while the blue group was milder, and the yellow group was more chewy and less tender.

Both goose farmers have eaten geese from the different groups at different times, and prefer the meat from the red group birds.

**Compelling Words:** Participants were asked to rank a set of 15 words that could be used on labels to describe meat products, to assess which ones are most appealing. They were asked to indicate which terms would make them **more likely** to purchase a product.

Number of respondents:

8 of 8:	organic
7 of 8:	local; grassfed
6 of 8:	pastured
5 of 8:	heritage; Vermont-raised
3 of 8:	delicious; from Cabot, Vermont
1 of 8:	sustainable
0 of 8:	natural; green; fatty; lean; luxurious; healthy

## Methods: Goose vs Other Poultry

To make the results of our tasting more robust, and gather more data that would be useful to prospective and current goose farmers, we also had our tasters do a blind comparison of four types of poultry breast (chicken, turkey, duck, and goose), and rank them by preference.

**Methods:** In a blind taste test, participants sampled breast meat from four different kinds of birds. They evaluated the aroma and taste of each sample, indicated a price they'd be willing to pay for that meat in the store, and indicated their overall preferences.

**Training:** The same as above.

**Cooking:** Breasts were salted by weight, and cooked to an internal temperature appropriate to the product: 160-degrees for chicken and turkey, and 130-degrees for duck and goose. Each meat was rested for five minutes prior to serving, so the internal temperature could rise by five degrees (to 165 and 135 respectively), and so the juices could redistribute. Meats were served one at a time, beginning with the lightest-tasting meat (chicken), progressing to the most flavorful meat (turkey, duck, goose).

**Tasting:** Meats were cooked and served one at a time, beginning with the lightest-tasting meat (chicken), progressing to the most flavorful meat (turkey, duck, goose). Water was provided so participants could clear their palates.

## Results:

**Aroma/Taste Descriptors:**

Chicken: Described by participants as smelling natural and fresh, and tasting light, juicy and mild.

Turkey: Described by participants as smelling pleasant and meaty, and tasting buttery and savory.

Duck: Described by participants as smelling savory and earthy, and tasting rich and liver-y

Goose: Described by participants as smelling meaty and intense, and tasting robust and savory.

**Taste Ranking:** On a scale of 1 to 5, with 1 being unappealing and 5 being very appealing. Rankings are averages of the participants' responses.

Chicken: 3.44

Turkey: 3.31

Duck: 4.28

Goose: 4.56

**Price:** Participants indicated how much they would be willing to pay for each product. Dollar amounts are averages of the participants' responses.

Chicken: \$7.90 (without one outlier who said \$15, average would have been \$6.86)

Turkey: \$6.90

Duck: \$11.70

Goose: \$13.00

**Favorite Breast Meat:** Each participant was asked to rank the meats in order from favorite to least favorite.

	<b>1 - Least favorite</b>	<b>2</b>	<b>3</b>	<b>4 - Favorite</b>
<b>Chicken</b>	4	3	x	x
<b>Turkey</b>	3	3	x	2
<b>Duck</b>	x	1	5	2
<b>Goose</b>	x	x	2	5

**Analysis:** Overall, participants found goose to be the most delicious of the four meats, and the one they were willing to pay the most for.