

ESTABLISHING INSTITUTIONAL MARKETS FOR LOCAL PROTEINS

Summary of Blended Burger Sensory Tasting Results

April 2018

Executive Summary

The NW Food Buyers' Alliance (www.food-hub.org/nwfba) led a pilot project (Oct 2016 - March 2018) to expand institutional markets for local ranchers and fisherman in the Pacific NW. A primary goal in the near term is that at least 5,000 meals will be served using local proteins as a result of the pilot, while long term we aim to build a more reliable market for family scale ranchers and fisherman and increase access to healthy local proteins for vulnerable populations. A key strategy that was explored via this project involved testing a beef product blended with plant proteins, with the aim of making local, grass-finished beef more affordable and accessible to institutional markets. We worked with partners at Carman Ranch, a grass-finished ranching operation based in eastern Oregon, to host a blended burger sensory tasting event in February 2018 at Dick's Primal Burger in Portland, Oregon. The goal of this event was to test four different versions of the beef blend, which included blanched and raw mushrooms in ratios of 25-40%, and which also included samples mixed with a whole foods scratch starter concentrate made by NOBULL, a company based in Portland. This report summarizes feedback from the foodservice staff who attended this tasting.

Participating Foodservice Staff

Attendees included 11 institutional foodservice staff (executive chefs and foodservice or nutrition service directors/managers) from 7 different types of institutions. Cumulatively, these institutions serve just over 27,000 meals each day (ranging from 300 to 8,000).

Biggest Opportunities

After sampling four different blends, the majority of participants selected Sample #3, which consisted of a 25% raw local mushroom blend as their favorite, while Sample #4, consisting of a 25% raw mushroom blend + NOBULL, came in second. Participants indicated flavor, texture, moisture, and ability to hold together in burger form as important factors in their decision.

Although nearly two-thirds of participants had never served a blended burger before, 70% said they would probably or definitely buy these products and nearly all said they would like to serve them at least once per month, or more frequently. Top drivers for purchasing a blended beef product included: supporting local agriculture and community, cost, and nutrition. 4:1 patties were the most preferred format. The majority of participants said they would prefer to source through their current distributor, if possible.

After the tasting, Carman Ranch reported having found an affordable regional source for mushrooms and reported readiness to sell the 25% raw mushroom blend to institutions, starting immediately. The rest of this report details results from the sensory test.

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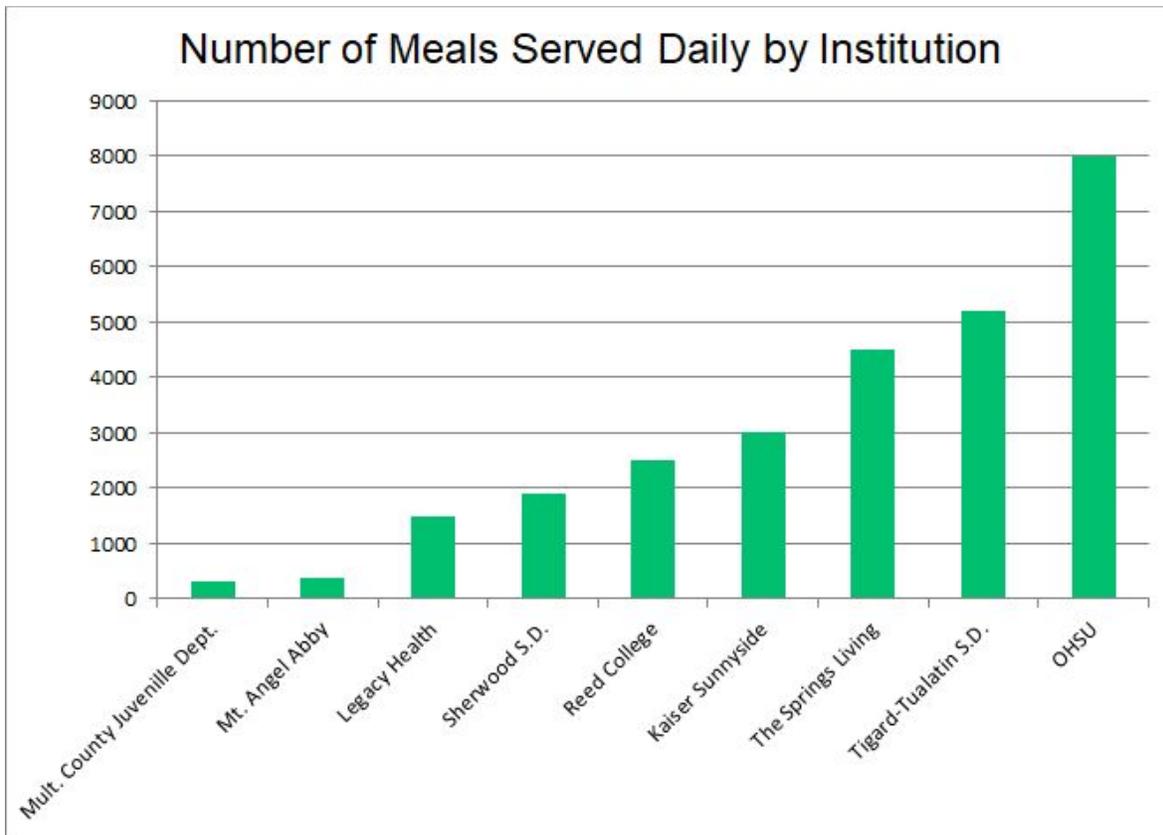
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OVERVIEW OF ATTENDEES

Attendees included 11 institutional foodservice staff (executive chefs and foodservice or nutrition service directors/managers) from 7 different types of institutions, all located in the Portland Metropolitan region of Oregon:

Institution Type	# of Institutions
Health Care Facility	5
School District	2
Assisted Living Facility	1
Faith Based Institution	1
Correctional Facility	1
Fast Casual Chain	1

The average number of meals served daily by each institution is 3,029, ranging from 300 meals/day to 8,000.



PART 1: INDIVIDUAL PRODUCT TASTING QUESTIONS

SAMPLE 1: ALL-BEEF

We served an all-beef sample first as a baseline. The intention was to prepare attendees' palates and get them in testing mode. Responses related to the all-beef sample are not summarized here since the goal was to test for differences between blended products, not in comparison to all-beef.

SAMPLE 2: 25% BLANCHED MUSHROOM BLEND

Nearly two-thirds of respondents (64%, n=7)¹ liked or very much liked the **flavor** of this sample, while about a third (27%, n=3) remained neutral, and 1 (9%) respondent disliked the flavor.

Respondents were generally neutral towards or disliked the **texture** of this sample. Only 18% (n=2) said that they liked the texture. In open-ended responses, respondents described the texture as being "soft," "delicate," "crumbly," and "too mushy." Some worried that it might fall apart in a mass foodservice setting, might lose its integrity on a bun, and might not perform on a charbroiler.

Most respondents thought the **moisture content** was too high in this sample. More than two-thirds (73%) said it was somewhat or much too moist, while 27% (n=3) said the moisture was just about right.

Almost two-thirds (63%, n=5) liked the **ratio of mushrooms to beef** in this sample. One respondent said they would prefer a higher mushroom content and two respondents said they would prefer a lower mushroom content (one said 5-10%, another was unsure).

A majority of respondents liked the **appearance** of this sample. One noted "nice color and caramelization." Almost two-thirds (63%, n=7) said it looked very or somewhat appealing, while 27% (n=3) remained neutral, and one respondent (9%) said they found it somewhat unappealing.

Overall, about half of respondents (55%, n=6) liked or very much liked this sample, while 27% (n=3) remained neutral, and 18% (n=2) disliked the sample. One noted that they "would not like in a burger." Texture was the biggest concern with this sample. Several respondents shared a concern that the product would be too delicate and crumbly to handle, that it might not hold up on a bun or flame broil well, and that it was too moist. Some respondents did say that they liked the aroma of the sample.

¹ Note that 11 foodservice staff participated in the sensory test. However, some of them skipped certain questions. As such, the total divisor for some questions is less than 11, meaning that the percentages shown may vary slightly in relation to the total number that responded to a particular question.

In terms of **comparisons to similar products that they purchase**, two-thirds of respondents (64%, n=7) said that they had not bought a product like this, while 27% (n=3) said it performed better, and one (9%) said it performed worse.

When asked the question: “**Would you buy this product at the right price?**” results were mixed, but generally less positive. About a third (36%, n=4) said they would not buy it, 27% (n=3) said they might buy it if some tweaks were made and an equal number (27%, n=3) said they were not sure yet. One respondent (9%) said they would buy as is. Again, comments about texture appeared to be the key concern.

SAMPLE 3: 25% RAW MUSHROOM BLEND

All of the respondents (n=11) liked (36%) or very much liked (64%) the **flavor** of this sample. One responded that this sample was the “best so far of the three tasted” (which included the all-beef control sample).

All of the respondents (n=11) liked (45%) or very much liked (55%) the **texture** of this sample. In open-ended responses, respondents described the texture as being “consistent,” “just right,” “juicy,” and “tender.” One respondent said the texture was better than the all-beef control sample. Some were confident that the sample had enough moisture to hold up when pre-cooked prior to serving and that it would also hold up in a bun.

Almost all respondents thought the **moisture content** was just about right (91%, n=10) although one respondent (9%) thought the sample was somewhat too moist.

Almost three-quarters (73%, n=8) liked the **ratio of mushrooms to beef** in this sample. One respondent (9%) said they would prefer a higher mushroom content while two respondents (18%) said they would prefer a lower mushroom content.

All respondents liked the **appearance** of this sample. Almost all (91%, n=10) said it was very appealing while one (9%) said they found it somewhat appealing.

Overall, everyone either liked (45%, n=5) or very much liked (55%, n=6) this sample. A majority of respondents also liked that the mushroom flavor came through but did not overpower the beef flavor. One respondent did share that they, “personally love but not sure school kids would like the palate” since the mushroom flavor was still present. Several respondents said the sample would hold up in a bun, and others mentioned liking the color, caramelization, and sear. The only concern was from one respondent who thought it was too moist.

In terms of **comparisons to similar products that they purchase**, about half the respondents (54%, n=6) said that they had not bought a product like this, while 36% (n=4) said it performed better, and one (9%) said the product was the same.

When asked the question: “**Would you buy this product at the right price?**” results were mixed, but generally more positive. About a third (36%, n=4) said they would buy the product as is, while another third (36%, n=4) said that they might buy if some tweaks were made. Three respondents (9%) said they were not sure yet. Some respondents would like to try tasting a 5%-15% blend and another expressed curiosity about performance in other preparations (e.g., balls, loaf, charbroiled).

SAMPLE 4: 25% RAW MUSHROOM BLEND + NOBULL CONCENTRATE

Nearly two-thirds of respondents (64%, n=7) liked (45%) or very much liked (18%) the **flavor** of this sample, while the rest either remained neutral (18%, n=2), disliked it (9%, n=1) or disliked it very much (9%, n=1).

Slightly more than half of respondents (60%, n=6) liked or very much liked the **texture** of this sample, while 40% (n=4) said that they disliked the texture. In open-ended responses, respondents had mixed descriptions with some saying things like “good texture” and “more firm”, while others used words like “mushy” and “spongy.”

Most respondents (73%, n=8) thought the **moisture content** was just about right in this sample, while the rest said the sample was somewhat too moist (27%, n=3) or much too moist (9%, n=1).²

A majority of respondents (78%, n=7) liked the **ratio of mushrooms to beef** in this sample. One respondent said they would prefer a higher mushroom content and one also said they would prefer a lower mushroom content.

Most respondents liked the **appearance** of this sample. More than two-thirds (73%, n=8) said it looked very or somewhat appealing, while 18% (n=2) remained neutral, and one respondent (9%) said they found it somewhat unappealing.

Overall, 60% of respondents (n=6) liked or very much liked this sample, while one remained neutral, and 30% (n=3) disliked or very much disliked the sample. Flavor was the biggest concern with this sample. Several respondents shared that they liked the flavor, but that they preferred the burger with either slightly less or without the addition of NOBULL. Several respondents thought NOBULL improved the sear and that the product would hold up in flame broiling. One respondent suggested the sample would be “good for meatloaf or meatballs.”

In terms of **comparisons to similar products that they purchase**, slightly less than half of respondents (45%, n=5) said it performed better, and six (55%) said they have not bought a product like this.

² Numbers add up to more than 11 since one respondent selected both Just about right and Somewhat too moist.

When asked the question: “**Would you buy this product at the right price?**” results were mixed, but generally more positive. Slightly less than half (45%, n=5) said they would buy it, while equal numbers (18%, n=2) said they might buy it if some tweaks were made, would not buy it, or were not sure yet. Some commented that it had a lower flavor profile or would prefer that flavoring was not added.

SAMPLE 5: 40% RAW MUSHROOM BLEND + NOBULL CONCENTRATE

A majority of respondents (78%, n=7) liked (56%) or very much liked (22%) the **flavor** of this sample, while one disliked and another disliked very much the flavor.

60% respondents (n=6) liked or very much liked the **texture** of this sample, while two (20%) said that they disliked or very much disliked the texture and another two (20%) remained neutral. In open-ended responses, respondents used words like “soft,” “mushy,” and “a bit crumbly.”

Most respondents (67%, n=6) thought the **moisture content** was just about right in this sample, while the rest (n=4) said the sample was somewhat too moist.

A majority (78%, n=7) disliked the **ratio of mushrooms to beef** in this sample, while two respondents (22%) liked the mushroom content. One respondent noted, “all you taste is mushrooms.”

Most respondents liked the **appearance** of this sample. A majority (80%, n=8) said it looked very (50%) or somewhat appealing (30%), while one remained neutral and another said they found it somewhat unappealing.

Overall, a majority of respondents (80%, n=8) liked (40%) or very much liked (40%) this sample, while 20% (n=2) disliked it or disliked it very much. The high mushroom content was the biggest concern with this product. One respondent noted that they, “liked the flavor but not as a beef patty,” and another shared that the sample had “slightly too much mushroom flavor for the basic burger.” Several respondents said that the sample had great flavor, but was more “like a meatloaf.” One respondent shared a concern of whether this would flame broil well.

In terms of **comparisons to similar products that they purchase**, slightly more than half of respondents (55%, n=6) said that they had not bought a product like this, while 36% (n=4) said it performed better, and one (9%) said it was the same.

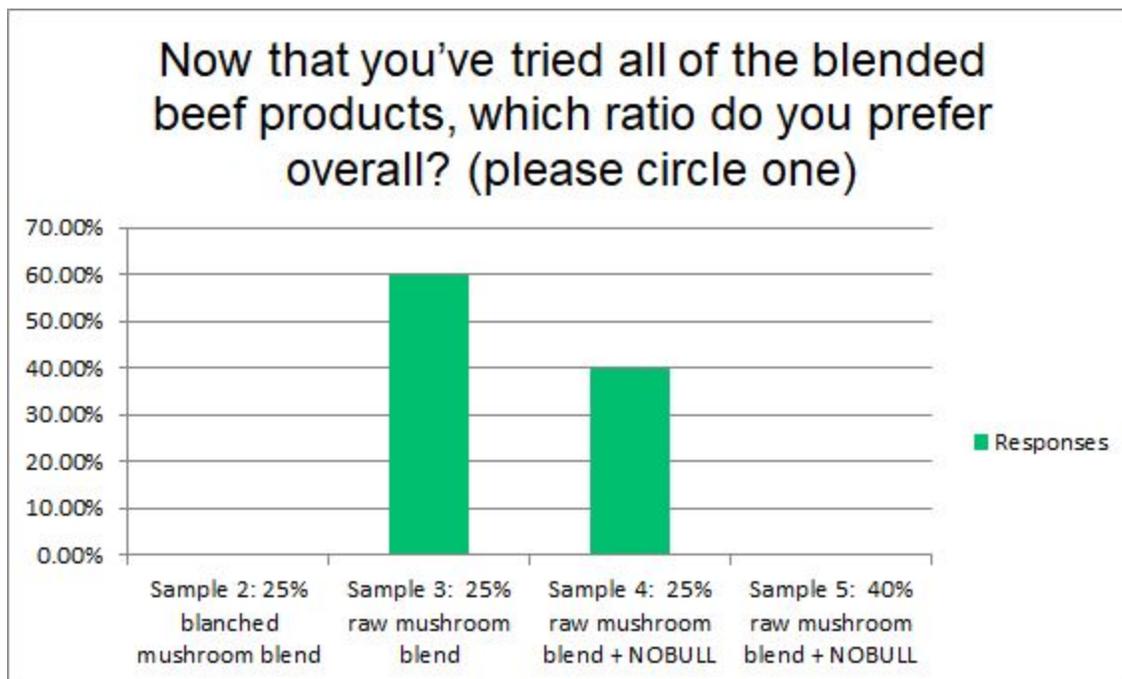
When asked the question: “**Would you buy this product at the right price?**” results were mixed, but generally less positive. About a third (36%, n=4) said they would not buy it, another third said they might buy it if some tweaks were made, 27% (n=3) said they would buy it as is, and one respondent (9%) remained neutral.

PART 2: OVERALL IMPRESSIONS AND INSTITUTIONAL PURCHASING CONSIDERATIONS

Preferred Product

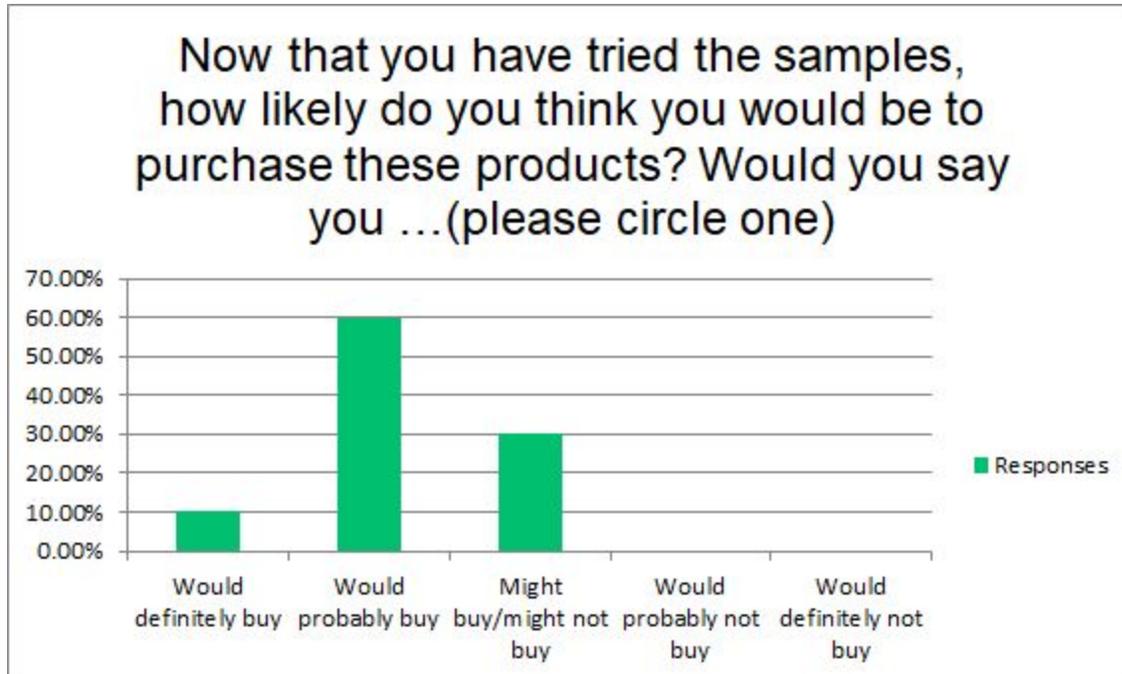
After the tasting of individual samples was completed, attendees were asked to share their overall reactions and to respond to questions about specific institutional purchasing considerations.

When asked to pick their favorite sample, **the majority of participants preferred Sample #3: 25% raw mushroom blend** (60%, n=6), with Sample #4: 25% raw mushroom blend + NOBULL coming in second (40%, n=4). None of the participants selected Sample #2 or Sample #5. In open-ended responses, participants indicated flavor, texture, moisture, and ability to hold together in burger form as important factors in their decision. Some offered specific feedback or suggestions such as, “liked texture better on #4 but liked taste best on #3,” and, “slightly less NOBULL would allow beef flavor to come through.”



Likelihood to Buy

Over two-thirds (70%, n=7) of respondents said they would probably (n=6) or definitely (n=1) buy these products. About one-third (30%, n=3) were neutral and none said they would not buy. Two open-ended responses indicate cost as the determining factor.



Institutional Purchasing Considerations

Attitudes

All respondents (n=10) indicated their overall attitude toward purchasing a blended beef product as positive or very positive.

Drivers

When asked to rank their primary drivers for purchasing a blended beef product, respondents selected, in order of importance:

1. Supporting local agriculture/community (avg score = 4.75, n=8)
2. Cost (avg score = 4.6, n=10)
3. Nutrition (avg score = 4.11, n=9)
4. Climate (avg score = 3.71, n=7)
5. Demand (avg score = 3.29, n=7)

Two respondents also indicated that flavor was a primary driver for them via open-ended response, while one noted, "selling Cory's cows."

Frequency

Nearly two-thirds of respondents (64%, n=7) have never served a blended burger product before. About one quarter of respondents (27%, n=3) serve a blended burger product every 4-6 months and one respondent (9%) indicated they serve a blended burger product 2-3 times per month.

A majority of respondents (n=9) would like to serve a blended burger product at least once a month (two-thirds of these, n=6, said they would like to serve them once a week or more than once a week). One respondent would like to serve a similar product “daily systemwide,” while another indicated “if affordable and local” (otherwise they would probably serve only once or twice a year).

Scratch made

About two-thirds of respondents (67%, n=6) currently make their own blended beef product from scratch, and none of them currently purchase a blended beef product. No respondents indicated the ratio used in their scratch blends.

Using frozen blends

Blended burgers perform better and are safer to use from frozen. When asked if they had any concerns about using frozen products and whether they prefer fresh or frozen, no respondents expressed concerns and all respondents indicated that frozen works for their operations and is generally preferred. One respondent did note they are, “interested in bulk thaw performance.”

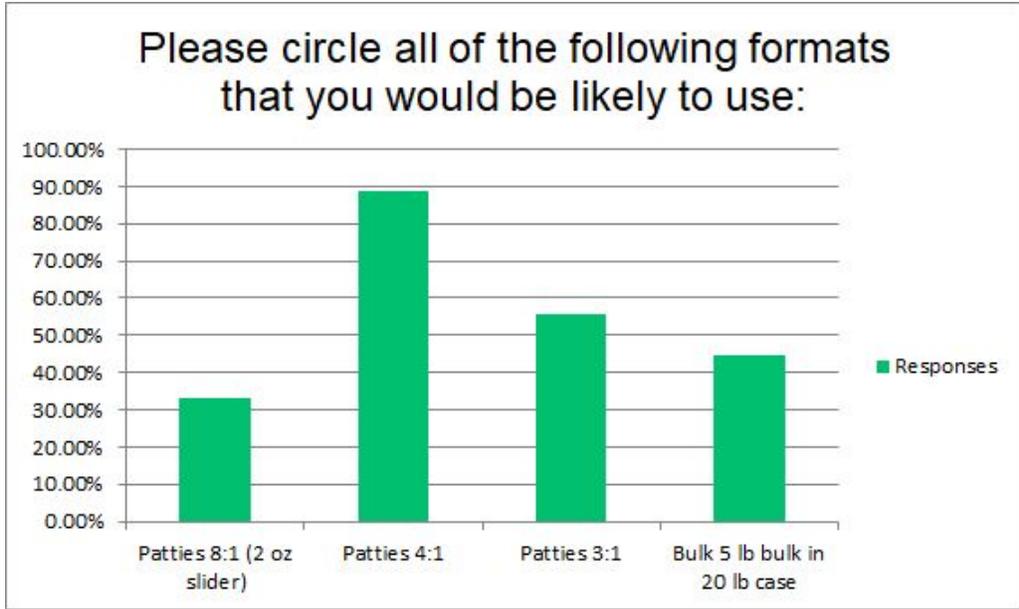
Purchasing limitations

When asked about group purchasing requirements or purchasing limitations, responses indicated some purchasing thresholds and some limitations in terms of food safety or certifications, including:

- Federal and state purchasing/procurement rules/reg. Quotes and RFP. \$3500 for micro-purchasing.
- Need 3 quote comparisons when making purchases over 35,000/year.
- Can buy from anyone, just under \$10,000/year.
- Purchase from co-op.
- HACCP guidelines, no definite restrictions.
- Just no added preservatives.
- Antibiotic-free, grass-fed.

Preferred Formats

When asked to select the formats they’d be likely to use (respondents could select multiple formats), regular sized patties were the top choice with 89% (n=8) saying they would use 4:1 patties and 56% (n=5) saying they would use 3:1 patties. Five pound bulk in a 20 pound case would be used by 44% (n=4), while 2 oz sliders (8:1 patties) were selected by one-third of respondents (33%, n=3). In open-ended responses, meatballs (n=2), meatloaf (n=1), and taco blend (n=1) were listed as other formats that respondents would like to see.



Preferred Distribution

Most respondents (70%, n=7) said they would prefer to source these products through their current distributors. Current distributors respondents listed include: Sysco, FSA, Pacific Seafood, Alexis, and US Foods. 40% (n=4) listed direct purchasing as an ideal method. Open-ended responses included one respondent who was flexible, one who had a preference for direct if they could meet a minimum delivery threshold, and a note about a current relationship with Carman Ranch.



Price Sensitivity

When asked the question: “How much can you pay for a product like this as part of a regular burger menu option?” results varied from \$.60 per portion to between \$2.00-\$6.00 per pound and “the lowest price that is profitable for you [Carman Ranch].”

Complete responses (n=9):

- We currently pay between \$0.60 and \$1.00
- \$0.60 - \$0.80
- About \$1.50 [?] per 5 oz portion; \$4 per lb
- My amount/meal is \$3.18 which must include all other meal components. \$2.00/lb is probably do-able.
- \$4.50/lb.
- Not sure, \$5-\$6/lb
- less than a pure beef product
- The lowest price that is profitable to you.
- Similar to our cost now, or less if possible.

Additional Comments

Several respondents (n=3) want further information/testing on cooking blended burger patties in institutional ovens. One respondent points out “schools mostly have ovens only” so this would be a major factor in their capacity to buy and serve these products. Schools also need documentation on how a patty meets the USDA meal component, and if/how it can meet a 2 ounce meat equivalent.