

Multi-Month Summary Report: January - June 2021

Executive Summary

In February 2020, the Meat Demand Monitor (MDM) project was launched collecting data from over 2,000 U.S. consumers each month. The MDM project is funded in-part by the beef and pork checkoffs and tracks U.S. consumer preferences, views, and demand for meat with separate analysis for retail and food service channels.¹

In this report, insights from the MDM surveys conducted between January and June 2021 are outlined, providing the project's third multi-month, summary report. Data from over 12,000 survey respondents are used to examine trends for these six months.

Key insights over these six months include:

- Grocery and food service meat demand generally increased from January levels.
- Taste, Freshness, Safety, and Price persistently rank highest in importance to protein purchasing decisions.
- At-home vs. Away-from-home consumption of all three daily meals was steady.
- Across restaurant groups, the Quick Service group gained share for Lunch meals while Casual Dining gained share for Dinner meals.
- Across sources of protein for at-home consumption, the Grocery Store group continues to lead.
- Overall inclusion of beef and pork in daily meals was steady over this period.
- Consumer meat knowledge on USDA Inspection, meat doneness, pork product color, and beef grades held steady for the evaluated period.

The foregoing provides additional details on the above findings as well as new findings and analysis. We offer a multitude of focused insights from monthly ad hoc questions listed at the end of this report. Modeling of beef and pork demand determinants, by market channel and product, is also provided.



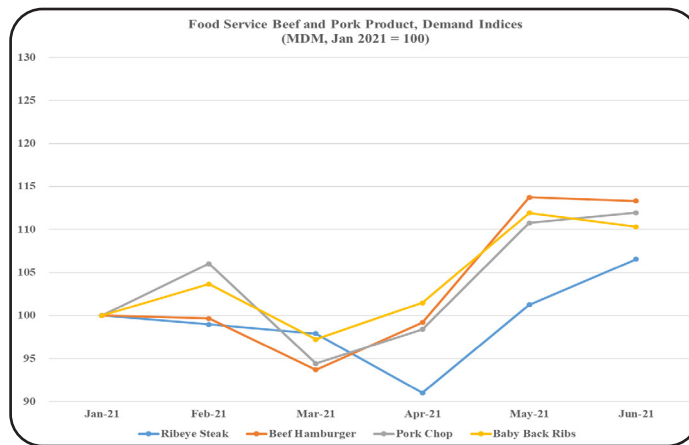
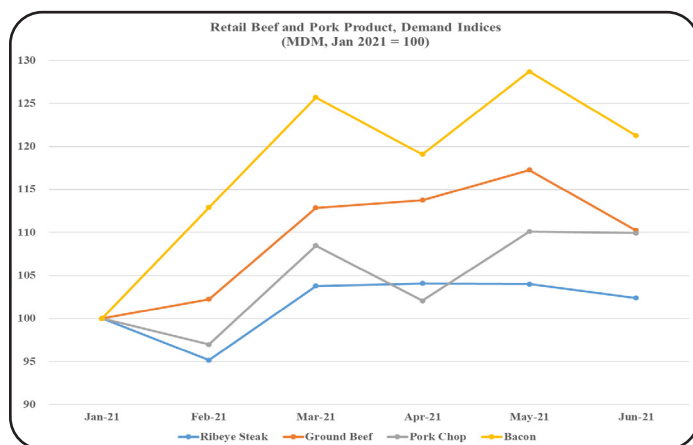
Meat Demand: Willingness to Pay Trends

Maximum willingness-to-pay (WTP) for eight different items and meals was calculated each month. WTP is shown separately for retail (grocery) and food service (restaurant, away-from-home) channels in the following table.

RETAIL		Ribeye Steak	Ground Beef	Pork Chop	Bacon	Chicken Breast	Plant-Based Patty	Shrimp	Beans and Rice
Jan-21	WTP (\$/lb)	\$16.59	\$7.13	\$6.20	\$4.43	\$7.07	\$8.08	\$8.56	\$2.50
Feb-21	WTP (\$/lb)	\$15.79	\$7.29	\$6.02	\$5.00	\$7.29	\$8.89	\$8.92	\$2.01
Mar-21	WTP (\$/lb)	\$17.21	\$8.05	\$6.73	\$5.57	\$8.19	\$8.44	\$9.38	\$2.55
Apr-21	WTP (\$/lb)	\$17.27	\$8.11	\$6.33	\$5.28	\$7.31	\$7.42	\$8.56	\$1.72
May-21	WTP (\$/lb)	\$17.25	\$8.36	\$6.83	\$5.70	\$8.19	\$9.37	\$9.46	\$2.70
Jun-21	WTP (\$/lb)	\$16.99	\$7.86	\$6.82	\$5.37	\$7.94	\$8.61	\$9.55	\$2.66

FOOD SERVICE		Ribeye Steak	Beef Ham-burger	Pork Chop	Baby Back Ribs	Chicken Breast	Plant-Based Patty	Shrimp	Salmon
Jan-21	WTP (\$/meal)	\$25.54	\$18.27	\$13.90	\$17.01	\$15.85	\$11.98	\$16.27	\$17.46
Feb-21	WTP (\$/meal)	\$25.28	\$18.21	\$14.74	\$17.63	\$16.91	\$13.00	\$16.78	\$18.03
Mar-21	WTP (\$/meal)	\$25.00	\$17.12	\$13.12	\$16.54	\$15.88	\$10.79	\$16.30	\$17.25
Apr-21	WTP (\$/meal)	\$23.25	\$18.12	\$13.68	\$17.27	\$17.01	\$12.24	\$16.76	\$16.37
May-21	WTP (\$/meal)	\$25.86	\$20.78	\$15.39	\$19.04	\$18.98	\$14.41	\$19.11	\$19.58
Jun-21	WTP (\$/meal)	\$27.21	\$20.70	\$15.56	\$18.76	\$18.67	\$13.28	\$18.82	\$19.14

The following figures present WTP estimates as index values relative to January 2021. As an example, the retail WTP index for ground beef in May 2021 was 117.25 meaning retail demand was 17% stronger in May than in January. Similarly, the food service WTP index for pork chop meals was 111.94 indicating food service demand was 12% stronger in June than in January. More broadly, both retail and food service beef and pork demand was higher in the second quarter of 2021 than in the first quarter.



As noted in previous multi-month reports, the number of times a given respondent selects each good can be used as a measure of product demand. This is viable as prices are exogenously set for the choice experiment and are held constant across respondents and time such that changes in product selection rates correspond with demand changes. As an example, differences in the frequency between respondents A and B in picking pork chops in a retail setting cannot be attributed to prices and hence reflect differences in demand.

It is useful to first summarize product selection frequency. As shown in the following tables, chicken breast is the most common Retail selection and beef hamburger is the most common Food Service selection.

Summary of Choices, Retail Setting			Summary of Choices, Food Service Setting		
Item	Mean Number of Times Chosen	Percent of Times Chosen	Item	Mean Number of Times Chosen	Percent of Times Chosen
Ribeye Steak	0.75	8.35%	Ribeye Steak	1.25	13.91%
Ground Beef	1.93	21.48%	Beef Hamburger	2.01	22.29%
Pork Chop	1.21	13.41%	Pork Chop	0.42	4.64%
Bacon	0.74	8.21%	Baby Back Ribs	0.94	10.39%
Chicken Breast	2.16	23.95%	Chicken Breast	1.27	14.13%
Plant-Based Patty	0.32	3.58%	Plant-Based Patty	0.45	4.98%
Shrimp	0.47	5.25%	Shrimp	1.24	13.75%
Beans and Rice	0.70	7.72%	Salmon	0.79	8.74%
Would Buy Something Else	0.72	8.04%	Would Buy Something Else	0.64	7.16%

While these summary statistics are useful from a simple, aggregate perspective additional analysis is needed to understand determinants of these consumer selections. Here we are interested in the two beef and two pork products presented as available to respondents, separately for the Retail and Food Service channels. The following tables summarize model results.

Characteristics of respondents with stronger ribeye steak, retail demand include being under 55 years of age, being male, and having household income over \$100,000.² Those placing higher importance on Nutrition, Origin/Traceability, Hormone/Antibiotic-Free, Animal Welfare, Environmental Impact, and Appearance also have stronger demand - conversely those placing higher importance on Price have weaker demand.³ Respondents who had prior day meals including beef hold stronger demand for ribeye steak. There is no strong pattern over the six evaluated months, or day of the week.

Factors Impacting Retail Meat Demand, Regression Models (Jan-June 2021 MDM Data)

Parameter	Ribeye Steak		Ground Beef		Pork Chop		Bacon	
	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Intercept	0.652	0.003	1.927	0.001	1.095	0.001	0.214	0.072
Flexitarian	-0.219	0.093	-0.163	0.286	-0.198	0.079	0.043	0.521
Regularly Consume Animal Products	-0.049	0.682	0.239	0.086	0.168	0.082	0.235	0.001
Vegan Vegetarian or Vegetarian	-0.019	0.903	-0.127	0.447	0.060	0.611	0.105	0.155
Age, Under 35	0.388	0.001	0.185	0.037	-0.047	0.477	0.199	0.001
Age, 35 to 55	0.314	0.001	0.066	0.376	-0.195	0.001	0.050	0.201
Male	0.112	0.047	0.002	0.969	0.047	0.304	0.034	0.311
Married	-0.064	0.233	0.024	0.706	0.059	0.204	0.014	0.669
Children under Age of 12 in Household	0.088	0.241	0.032	0.688	0.003	0.960	0.042	0.335
College, 4-Year Degree	0.092	0.095	-0.224	0.000	0.037	0.440	-0.020	0.572
Income, Above \$100k	0.142	0.036	-0.345	0.001	-0.071	0.210	-0.022	0.604
Hispanic, Latino, or Spanish Origin	-0.037	0.706	0.143	0.166	0.067	0.419	-0.073	0.224
Race, White	-0.097	0.181	0.194	0.010	-0.051	0.402	0.059	0.184
Political Party Affiliation, Democratic	-0.005	0.929	-0.073	0.196	0.093	0.042	-0.040	0.239
Region, Northeast	-0.046	0.531	-0.035	0.692	0.136	0.046	0.043	0.399
Region, Midwest	0.018	0.811	0.027	0.746	0.172	0.012	0.073	0.119
Region, South	-0.026	0.700	0.011	0.882	0.074	0.181	0.051	0.227
PV, Freshness	-0.003	0.960	-0.084	0.121	-0.045	0.315	-0.017	0.581
PV, Taste	0.041	0.450	-0.070	0.214	-0.061	0.161	-0.054	0.110
PV, Safety	0.029	0.531	0.004	0.934	0.031	0.412	-0.012	0.683
PV, Convenience	0.098	0.050	-0.019	0.724	0.008	0.845	0.010	0.769
PV, Nutrition	0.108	0.020	-0.064	0.188	-0.065	0.105	0.024	0.410
PV, Health	0.052	0.269	-0.166	0.001	-0.103	0.012	-0.052	0.070
PV, Origin/Traceability	0.257	0.001	0.011	0.838	0.002	0.961	0.000	0.993
PV, Hormone/Antibiotic-Free	0.144	0.002	-0.069	0.154	-0.013	0.732	-0.042	0.148
PV, Animal Welfare	0.116	0.017	-0.048	0.356	0.012	0.759	-0.004	0.880
PV, Environmental Impact	0.121	0.013	-0.046	0.388	-0.045	0.270	-0.028	0.365
PV, Appearance	0.116	0.019	0.004	0.945	0.023	0.586	-0.023	0.462



Factors Impacting Retail Meat Demand, Regression Models (Jan-June 2021 MDM Data)

	<i>Ribeye Steak</i>		<i>Ground Beef</i>		<i>Pork Chop</i>		<i>Bacon</i>	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Grocery Shopping in Household, Solely or Primarily Responsible	0.000	0.998	-0.197	0.176	0.145	0.156	0.020	0.766
Grocery Shopping in Household, Typically at least One-Half	-0.021	0.872	-0.201	0.183	0.242	0.024	0.062	0.401
Prior Day Meals, Number Including Beef	0.276	0.001	0.328	0.001	0.009	0.775	0.046	0.077
Prior Day Meals, Number Including Pork	-0.030	0.490	-0.068	0.123	0.184	0.001	0.172	0.001
Prior Day Meals, Number Including Chicken	0.032	0.430	-0.066	0.127	-0.057	0.074	-0.001	0.965
Prior Day Meals, Number Including Fish/Seafood	0.088	0.061	-0.230	0.001	-0.069	0.071	0.046	0.126
Prior Day Meals, Number Including Alternative Proteins	-0.030	0.463	-0.210	0.001	-0.150	0.001	-0.062	0.012
Prior Day Meals, Number Including Other or No Protein	-0.062	0.075	-0.086	0.035	-0.109	0.000	-0.008	0.755
February	-0.152	0.090	0.218	0.030	-0.073	0.362	0.084	0.150
March	-0.032	0.709	0.173	0.081	-0.081	0.305	0.069	0.204
April	0.083	0.389	0.295	0.006	-0.044	0.575	0.133	0.020
May	-0.041	0.652	0.173	0.079	-0.047	0.556	0.096	0.108
June	-0.005	0.957	0.102	0.265	0.016	0.848	0.048	0.351
Sunday	-0.167	0.085	0.019	0.855	-0.035	0.674	0.001	0.984
Tuesday	-0.053	0.584	-0.006	0.952	-0.068	0.412	0.052	0.400
Wednesday	0.026	0.795	-0.060	0.538	0.004	0.965	-0.006	0.911
Thursday	-0.010	0.927	-0.053	0.610	-0.029	0.755	-0.090	0.119
Friday	0.019	0.861	-0.003	0.982	-0.019	0.835	-0.117	0.061
Saturday	-0.060	0.520	-0.084	0.383	-0.002	0.980	0.025	0.666
Adjusted R-square	0.0965		0.0813		0.0393		0.0379	
Number of Observations	5,743		5,743		5,743		5,743	

Moving to ground beef, retail demand is stronger for individuals who are under 35 years of age, do not have a 4-year college degree, have incomes below \$100,000, and are White. Those placing higher importance on Health or Price have weaker demand.⁴ Individuals with prior day meals including beef hold stronger ground beef demand.

Combined, difference in retail beef demand across categories include steak demand being strongest for higher-income households who place less weight on Price, and ground beef demand being strongest for those more concerned with Price. Differences in the impact of prior day meal patterns indicates ground beef demand may be more sensitive to proteins outside the red-meat sector.

Turning to pork we observe pork chop retail demand to be stronger for respondents who are not middle aged (between 35 and 55 years old), who affiliate with the Democratic party, and reside in the Northeast or Midwest region. Those placing higher importance on Health have weaker demand. Individuals with prior day meals including pork hold stronger pork chop demand.

Examining bacon retail demand reveals stronger demand for consumers who self-declare to regularly consume animal products or are under 35 years of age. Individuals with prior day meals including pork hold stronger bacon demand.

Contrasting retail pork demand patterns reveals identified household characteristics have a larger impact on pork chop than bacon demand.

Transitioning to food service, stronger ribeye steak demand aligns with individuals who are under 55 years of age. Demand is higher for households where income exceeds \$100,000 or a respondent places lower importance on Price. If beef was included more in prior day meals demand is higher.

Moving to beef hamburger, food service demand is weaker as expected by those declaring Flexitarian or Vegan Vegetarian diets and those who hold a 4-year college degree. Demand is stronger for those under 55 years of age, Hispanic, and White respondents. Those placing higher importance on Price have stronger demand. Individuals with prior day meals including beef hold stronger beef hamburger demand.

Factors Impacting Food Service Meat Demand, Regression Models (Jan-June 2021 MDM Data)

	<i>Ribeye Steak</i>		<i>Beef Hamburger</i>		<i>Pork Chop</i>		<i>Baby Back Ribs</i>	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Intercept	1.110	0.001	1.827	0.001	0.265	0.002	0.769	0.001
Flexitarian	-0.069	0.675	-0.613	0.008	0.032	0.614	-0.046	0.668
Regularly Consume Animal Products	0.228	0.109	-0.287	0.185	-0.002	0.966	0.274	0.002
Vegan Vegetarian or Vegetarian	0.037	0.830	-0.704	0.003	0.324	0.000	0.189	0.093
Age, Under 35	0.229	0.015	0.917	0.001	0.035	0.340	-0.146	0.046
Age, 35 to 55	0.294	0.003	0.486	0.001	0.007	0.811	-0.220	0.001
Male	0.101	0.129	-0.104	0.188	0.077	0.005	0.212	0.001
Married	-0.004	0.956	-0.053	0.517	0.030	0.274	0.045	0.387
Children under Age of 12 in Household	0.170	0.086	-0.126	0.237	0.107	0.005	0.081	0.202
College, 4-Year Degree	-0.071	0.394	-0.181	0.038	0.040	0.154	-0.031	0.600
Income, Above \$100k	0.243	0.013	-0.102	0.358	-0.019	0.572	0.087	0.192
Hispanic, Latino, or Spanish Origin	-0.147	0.139	0.337	0.016	0.070	0.157	-0.110	0.111
Race, White	-0.081	0.349	0.246	0.012	0.040	0.258	-0.120	0.067
Political Party Affiliation, Democratic	-0.205	0.003	0.023	0.778	0.045	0.099	0.005	0.910
Region, Northeast	0.043	0.670	0.065	0.601	-0.055	0.146	-0.065	0.373
Region, Midwest	0.025	0.801	0.174	0.158	-0.044	0.245	-0.025	0.734
Region, South	0.018	0.836	0.006	0.957	-0.017	0.623	-0.005	0.938
PV, Freshness	0.149	0.020	-0.208	0.004	-0.035	0.187	0.139	0.001
PV, Taste	0.125	0.057	-0.124	0.136	-0.056	0.060	0.059	0.194
PV, Safety	0.043	0.484	-0.104	0.116	0.014	0.567	0.114	0.007
PV, Convenience	0.097	0.118	-0.011	0.876	0.034	0.196	0.066	0.128
PV, Nutrition	0.019	0.755	-0.292	0.000	-0.010	0.698	0.071	0.073
PV, Health	0.037	0.528	-0.211	0.002	0.023	0.334	0.031	0.451
PV, Origin/Traceability	0.146	0.012	-0.032	0.645	0.042	0.093	-0.024	0.547
PV, Hormone/Antibiotic-Free	0.174	0.008	-0.257	0.000	0.044	0.081	0.108	0.007
PV, Animal Welfare	0.130	0.023	-0.148	0.039	0.032	0.221	0.031	0.447



Factors Impacting Food Service Meat Demand, Regression Models (Jan-June 2021 MDM Data)

	<i>Ribeye Steak</i>		<i>Beef Hamburger</i>		<i>Pork Chop</i>		<i>Baby Back Ribs</i>	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
PV, Environmental Impact	0.166	0.010	-0.091	0.264	0.041	0.117	0.072	0.083
PV, Appearance	0.262	0.001	-0.067	0.365	0.043	0.107	0.082	0.039
Prior Day Meals, Number Including Beef	0.295	0.001	0.334	0.001	0.075	0.002	0.013	0.731
Prior Day Meals, Number Including Pork	0.000	0.998	0.017	0.760	0.059	0.005	0.099	0.005
Prior Day Meals, Number Including Chicken	0.031	0.529	0.080	0.169	0.030	0.118	-0.015	0.676
Prior Day Meals, Number Including Fish/Seafood	-0.203	0.000	-0.484	0.001	0.083	0.001	0.038	0.384
Prior Day Meals, Number Including Alternative Proteins	-0.189	0.001	-0.248	0.001	-0.056	0.002	-0.024	0.517
Prior Day Meals, Number Including Other or No Protein	-0.120	0.013	0.005	0.936	-0.045	0.007	-0.038	0.225
February	-0.134	0.313	-0.183	0.171	0.050	0.339	0.099	0.234
March	-0.024	0.856	-0.158	0.235	-0.006	0.901	0.073	0.385
April	-0.366	0.002	-0.094	0.474	0.041	0.414	0.095	0.252
May	-0.385	0.001	0.009	0.948	0.006	0.905	0.090	0.255
June	-0.078	0.532	-0.061	0.647	0.021	0.652	0.006	0.941
Sunday	0.101	0.402	0.228	0.098	-0.019	0.697	-0.163	0.051
Tuesday	0.121	0.333	-0.066	0.637	0.016	0.742	-0.134	0.100
Wednesday	0.117	0.353	0.215	0.147	-0.029	0.553	-0.190	0.030
Thursday	-0.048	0.691	0.040	0.782	-0.022	0.677	-0.069	0.443
Friday	-0.013	0.923	0.152	0.309	-0.036	0.475	-0.051	0.655
Saturday	0.157	0.182	0.026	0.850	-0.034	0.472	-0.116	0.166
Adjusted R-square	0.0556		0.0998		0.1032		0.0274	
Number of Observations	5,737		5,737		5,737		5,737	



We observe pork chop food service demand to be stronger for male respondents and those who self-declare their diet as Vegan Vegetarian or Vegan. Stronger demand is held by those who have children at home. Individuals with prior day meals including beef, pork, or fish/seafood hold stronger pork chop demand.

Examining baby back ribs, food service demand reveals stronger demand for consumers sharing they regularly consume animal products or are Male. Demand is weaker for those under 55 years of age. Demand is stronger for those placing higher importance on Freshness, Safety, Hormone/Antibiotic-Free and Appearance than Price. Individuals with prior day meals including pork hold stronger baby back ribs demand.

Protein Values Trends

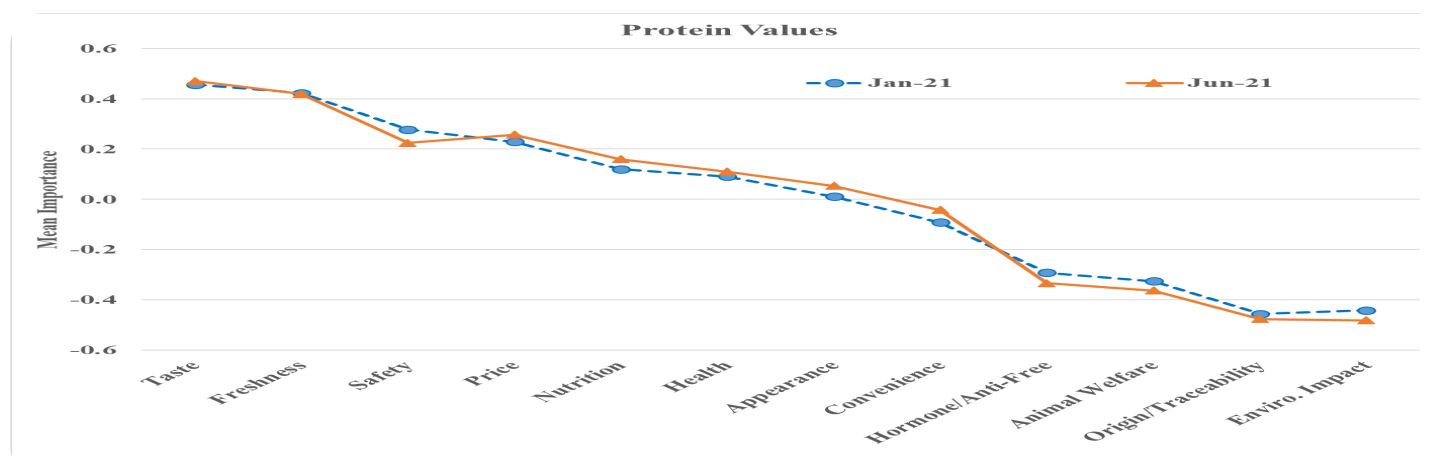
Given a list of 12 protein values, respondents are asked to indicate the four “most important” and four “least important” in importance when purchasing protein items.⁵ Relative importance is conveyed by calculating the proportion of times a protein value was selected as “most important” minus the times selected “least important.” A higher, positive number implies greater importance in making protein purchasing decisions.

The following table reports average importance scores for each month. Taste, Freshness, Safety, and Price remain top protein values. Hormone/Antibiotic-Free, Animal Welfare, Origin/Traceability, and Environmental Impact regularly rank lower. Beyond ordinal information, these scale values convey relative magnitude insights. For instance, in June, for the average respondent, Price is 2.36 times as important as Health ($0.26/0.11 = 2.36$).

It is also worth noting that these relative importance patterns are consistent with those found over the 2013-2018 period in the Food Demand Survey (FooDS) project.⁶ While framed generally to the broader food category, monthly FooDS reports regularly found Taste, Safety, and Price to be among the most important values for consumers; a finding consistent here early in 2021.

PROTEIN VALUES	Taste	Freshness	Safety	Price	Nutrition	Health	Appearance	Convenience	Hormone/Anti-Free	Animal Welfare	Origin/Traceability	Enviro. Impact
Jan-21	0.46	0.42	0.28	0.23	0.12	0.09	0.01	-0.09	-0.29	-0.33	-0.46	-0.44
Feb-21	0.45	0.43	0.20	0.23	0.19	0.13	0.02	-0.08	-0.32	-0.36	-0.47	-0.42
Mar-21	0.47	0.45	0.25	0.26	0.16	0.12	0.04	-0.07	-0.35	-0.37	-0.48	-0.47
Apr-21	0.39	0.38	0.20	0.28	0.17	0.11	0.08	-0.13	-0.28	-0.35	-0.42	-0.44
May-21	0.42	0.35	0.23	0.21	0.18	0.12	0.03	-0.13	-0.30	-0.34	-0.39	-0.39
Jun-21	0.47	0.42	0.22	0.26	0.16	0.11	0.05	-0.04	-0.33	-0.36	-0.48	-0.48

The relative importance of these protein values has been rather steady. The following figure compares January and June values.

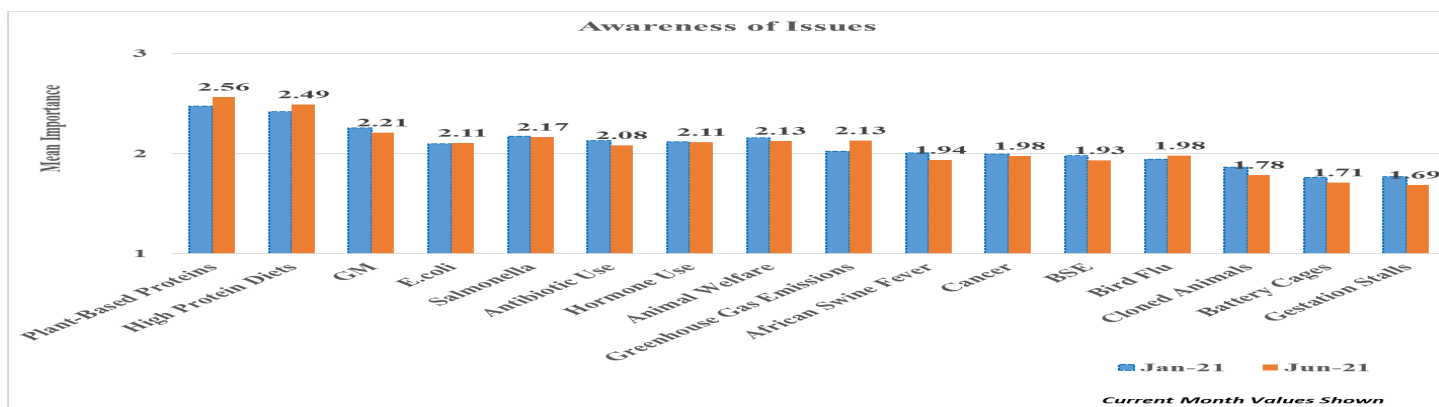


Issue Awareness Trends

A list of 16 topics is presented to respondents who indicate on a 5-point scale (1-Nothing, 2-A Little, 3-A Moderate Amount, 4-Quite a Bit, 5-A Great Deal) how much they have heard or read on each in the past two weeks. The following table reports mean scores for each month. Plant-based Proteins, High Protein Diets, Genetically Modified (GM) foods, E.coli in meat, and Salmonella in meat regularly are the topics most heard or read about.

Issue Awareness	Plant-Based Proteins	High Protein Diets	GM	E.coli	Salmonella	Antibiotic Use	Hormone Use	Animal Welfare	Greenhouse Gas Emissions	Cancer	BSE	Bird Flu	Cloned Animals	Battery Cages	Gestation Stalls	African Swine Fever
Jan-21	2.47	2.42	2.26	2.10	2.17	2.13	2.12	2.15	2.02	1.99	1.98	1.94	1.86	1.76	1.77	2.01
Feb-21	2.54	2.45	2.26	2.20	2.20	2.14	2.15	2.17	2.16	2.01	2.00	2.02	1.93	1.85	1.81	2.04
Mar-21	2.46	2.41	2.18	2.06	2.06	2.08	2.08	2.08	2.03	1.88	1.86	1.87	1.76	1.65	1.64	1.93
Apr-21	2.54	2.40	2.32	2.15	2.20	2.25	2.20	2.24	2.21	2.09	2.09	2.12	2.02	1.95	1.95	2.12
May-21	2.66	2.55	2.34	2.19	2.27	2.24	2.24	2.28	2.24	2.14	2.09	2.09	2.00	1.92	1.95	2.12
Jun-21	2.56	2.49	2.21	2.11	2.17	2.08	2.11	2.13	2.13	1.98	1.93	1.98	1.78	1.71	1.69	1.94

As shown in the following figure, comparing June with January 2021, most awareness scores have been steady.

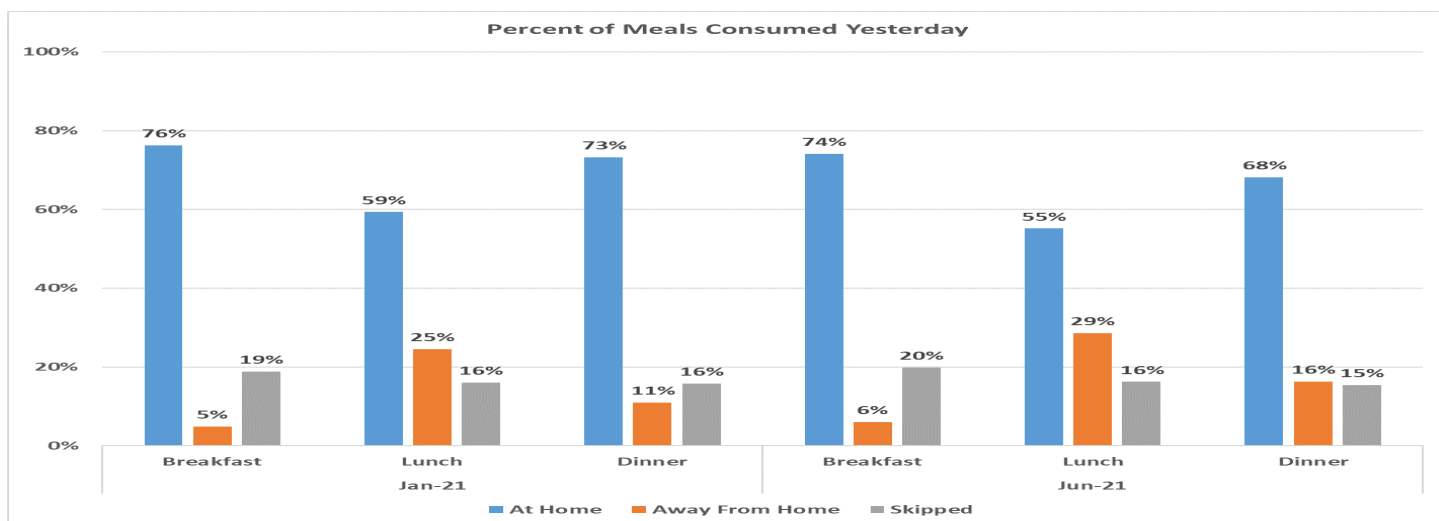


Prior Day Meal Location Trends

The prevalence of at home, away from home, and skipping each of yesterday's three main meals is captured for each respondent. The following table reports mean scores for each month. Overall, meal location held steady between January and June.

Meal Location	Breakfast	Lunch	Dinner	Breakfast	Lunch	Dinner	Breakfast	Lunch	Dinner
	<i>At Home</i>			<i>Away From Home</i>			<i>Skipped</i>		
Jan-21	76%	59%	73%	5%	25%	11%	19%	16%	16%
Feb-21	77%	55%	72%	6%	30%	12%	17%	15%	16%
Mar-21	70%	58%	71%	8%	28%	14%	22%	14%	15%
Apr-21	75%	52%	64%	6%	33%	14%	19%	15%	22%
May-21	76%	49%	64%	6%	35%	15%	18%	16%	21%
Jun-21	74%	55%	68%	6%	29%	16%	20%	16%	15%

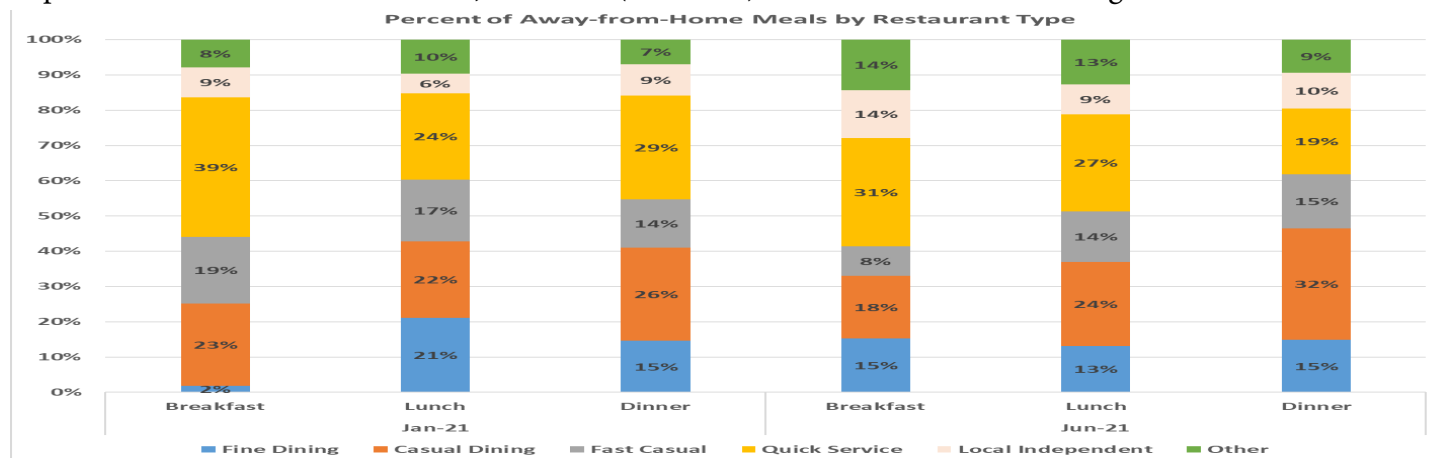
The following figure compares January and June values.



If respondents indicating consuming a meal away from home yesterday, they received a follow-up question to identify the type of restaurant from these six options: Fine Dining Restaurant (such as Ruth's Chris Steak House, The Capital Grille, Morton's Steakhouse, etc.), Casual Dining Restaurant (such as Applebee's, Olive Garden, Outback, etc.), Fast Casual Restaurant (such as Panera, Chipotle, Panda Express, etc.), Quick Service Restaurant (such as McDonald's, Subway, Chick-fil-A, etc.), Local Independent Restaurant (non-chain), and Other. The following table reports the share of visits for each restaurant type, by meal for each month.

Restaurant Type	Fine Dining	Casual Dining	Fast Casual	Quick Service	Local Independent	Other
<i>Breakfast</i>						
Jan-21	2%	23%	19%	39%	9%	8%
Feb-21	6%	18%	17%	34%	14%	13%
Mar-21	4%	16%	17%	37%	7%	19%
Apr-21	9%	21%	15%	36%	9%	10%
May-21	11%	22%	13%	33%	10%	12%
Jun-21	15%	18%	8%	31%	14%	14%
<i>Lunch</i>						
Jan-21	21%	22%	17%	24%	6%	10%
Feb-21	14%	22%	20%	25%	8%	10%
Mar-21	10%	24%	17%	27%	5%	16%
Apr-21	19%	23%	21%	24%	6%	7%
May-21	20%	21%	15%	29%	7%	8%
Jun-21	13%	24%	14%	27%	9%	13%
<i>Dinner</i>						
Jan-21	15%	26%	14%	29%	9%	7%
Feb-21	17%	28%	17%	18%	11%	8%
Mar-21	14%	28%	12%	20%	17%	9%
Apr-21	13%	28%	14%	21%	11%	12%
May-21	13%	31%	17%	20%	13%	5%
Jun-21	15%	32%	15%	19%	10%	9%

To interpret properly and fully, note the June 2021 dinner meal estimate of 32% for Casual Dining Restaurant. Combined with the earlier estimate that 16% of dinner meals were consumed away-from-home implies that over all dinner meals in June, 5.1% (0.16×0.32) occurred at a Casual Dining Restaurant.



If respondents indicate consuming a meal at home yesterday, they received a follow-up question to identify the source where the protein was purchased.⁷ The 11 options presented are: Grocery Store (such as Kroger, Safeway, etc.), Ordered Online & Picked Up from Local Grocery Store, Ordered Online from Local Grocery Store and Delivered to Your Home, Mass Merchandiser (such as Wal-Mart, Target, etc.), Club Store (such as Costco, Sam's Club, etc.), Order Online from Online Service (such as Amazon, Peapod, Fresh Direct, etc.), Farmer's Market, Butcher Shop or Meat Market, Natural Foods Store (such as Whole Foods, Sprouts, etc.), Meal Kits (such as Blue Apron, Hello Fresh, etc.) , and Other. The following table reports the share for each source, by meal for each month. The subsequent figure compares January and June values.

The Grocery Store group (considering in-store, online, and deliver modes collectively) remained the leading source of protein for at-home meals. The Ordered Online from Local Grocery Store group's share generally increased since January. While widely discussed in the general media, the combined sourcing of protein from Farmer's Markets, Butcher Shops or Meat Markets, and Natural Foods Stores remains small at 6% or less in each month.

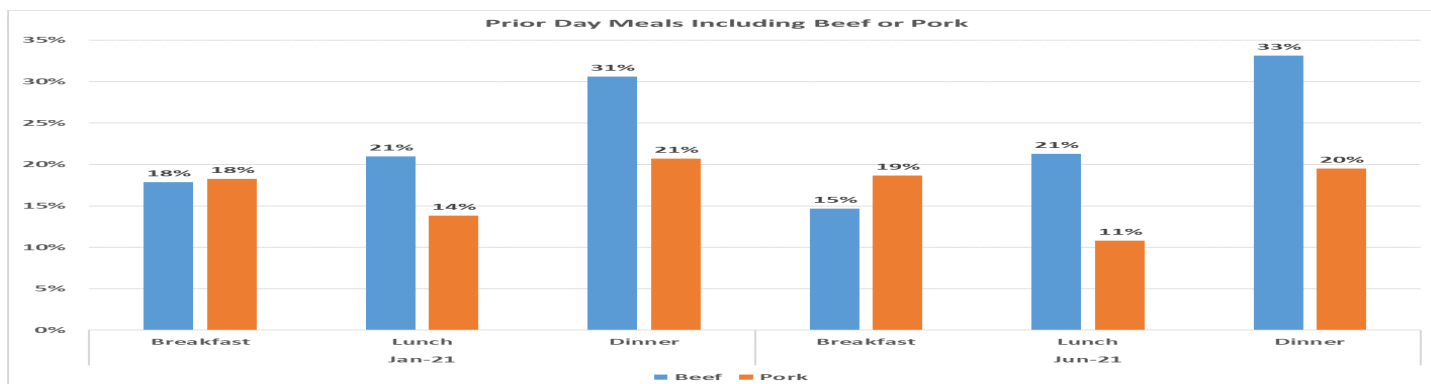
Protein Source, At-Home Meal	Grocery Store (such as Kroger, Safeway, etc.)	Ordered Online & Picked Up from Local Grocery Store	Ordered Online from Local Grocery Store and Delivered	Mass Merchandiser (such as Wal-Mart, Target, etc.)	Club Store (such as Costco, Sam's Club, etc.)	Order Online from Online Service (such as Amazon, Peapod, Fresh Direct, etc.)	Farmer's Market	Butcher Shop or Meat Market	Natural Foods Store (such as Whole Foods, Sprouts, etc.)	Meal Kits (such as Blue Apron, Hello Fresh, etc.)	Other
Breakfast											
Jan-21	54%	7%	4%	20%	6%	2%	2%	1%	3%	1%	2%
Feb-21	50%	4%	5%	23%	6%	4%	1%	1%	3%	1%	2%
Mar-21	54%	7%	6%	20%	6%	2%	0%	0%	2%	0%	3%
Apr-21	48%	7%	7%	19%	5%	5%	1%	1%	3%	1%	2%
May-21	49%	5%	6%	21%	5%	6%	1%	1%	3%	1%	1%
Jun-21	49%	6%	7%	18%	8%	3%	1%	1%	3%	0%	4%
Lunch											
Jan-21	55%	3%	4%	21%	5%	1%	1%	1%	2%	1%	5%
Feb-21	55%	5%	5%	20%	6%	2%	0%	1%	1%	0%	4%
Mar-21	57%	4%	2%	17%	6%	1%	2%	1%	3%	1%	7%
Apr-21	56%	3%	3%	19%	6%	2%	2%	1%	2%	1%	6%
May-21	53%	4%	3%	22%	5%	3%	1%	1%	1%	1%	5%
Jun-21	58%	5%	4%	16%	6%	2%	0%	2%	1%	0%	7%
Dinner											
Jan-21	57%	4%	3%	18%	6%	1%	1%	2%	2%	1%	5%
Feb-21	56%	3%	3%	19%	6%	2%	0%	1%	2%	1%	6%
Mar-21	56%	2%	3%	16%	7%	2%	1%	2%	2%	1%	9%
Apr-21	60%	4%	3%	14%	6%	1%	1%	2%	1%	1%	6%
May-21	53%	3%	5%	20%	5%	3%	0%	2%	2%	1%	7%
Jun-21	58%	2%	3%	16%	6%	2%	1%	2%	2%	1%	8%

Protein Consumption Frequency Trends

The rate beef and pork are included in prior day meals, separately for breakfast, lunch, and dinner, is captured for each respondent. The following table reports mean prevalence for each month. Both beef and pork remain steady as common center-of-plate items in each meal.

Beef & Pork Inclusion	Breakfast	Lunch	Dinner	Breakfast	Lunch	Dinner
	<i>Beef</i>			<i>Pork</i>		
Jan-21	18%	21%	31%	18%	14%	21%
Feb-21	17%	23%	30%	18%	16%	20%
Mar-21	12%	21%	31%	17%	11%	16%
Apr-21	19%	24%	30%	19%	14%	21%
May-21	19%	23%	31%	21%	15%	22%
Jun-21	15%	21%	33%	19%	11%	20%

The following figure compares January and June values.

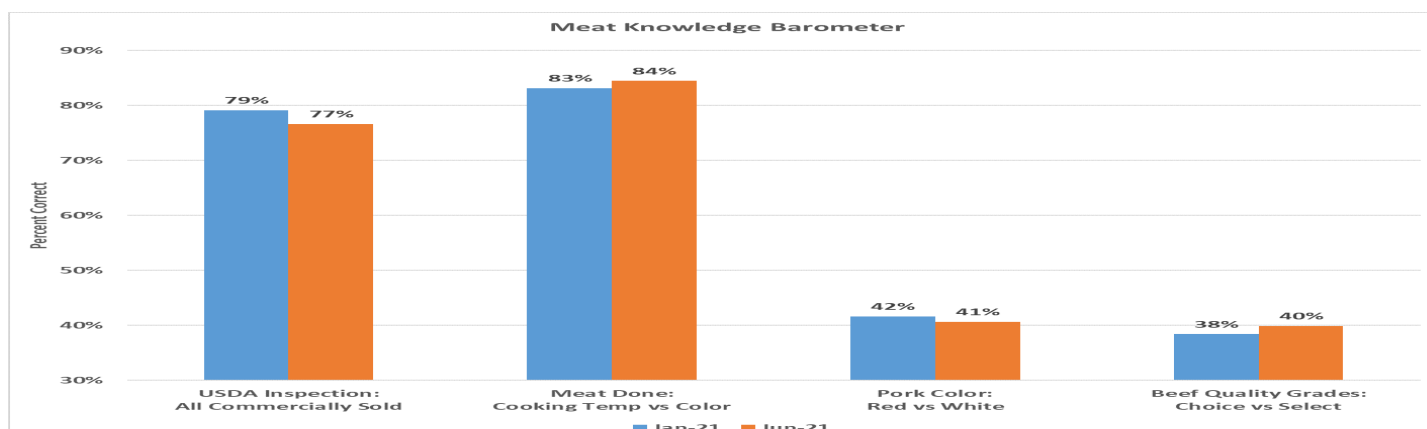


Meat Knowledge Trends

Four measures of meat knowledge are included in each month's survey. The following table reports mean prevalence of correct responses to these True/False questions. No clear trend is apparent currently regarding these four assessments of consumer meat knowledge.

Meat Knowledge	USDA Inspection: All Commercially Sold	Meat Done: Cooking Temp vs. Color	Pork Color: Red vs. White	Beef Quality Grades: Choice vs. Select
Jan-21	79%	83%	42%	38%
Feb-21	80%	83%	41%	37%
Mar-21	79%	85%	42%	39%
Apr-21	77%	86%	36%	36%
May-21	79%	82%	38%	32%
Jun-21	77%	84%	41%	40%

The following figure compares January and June values.

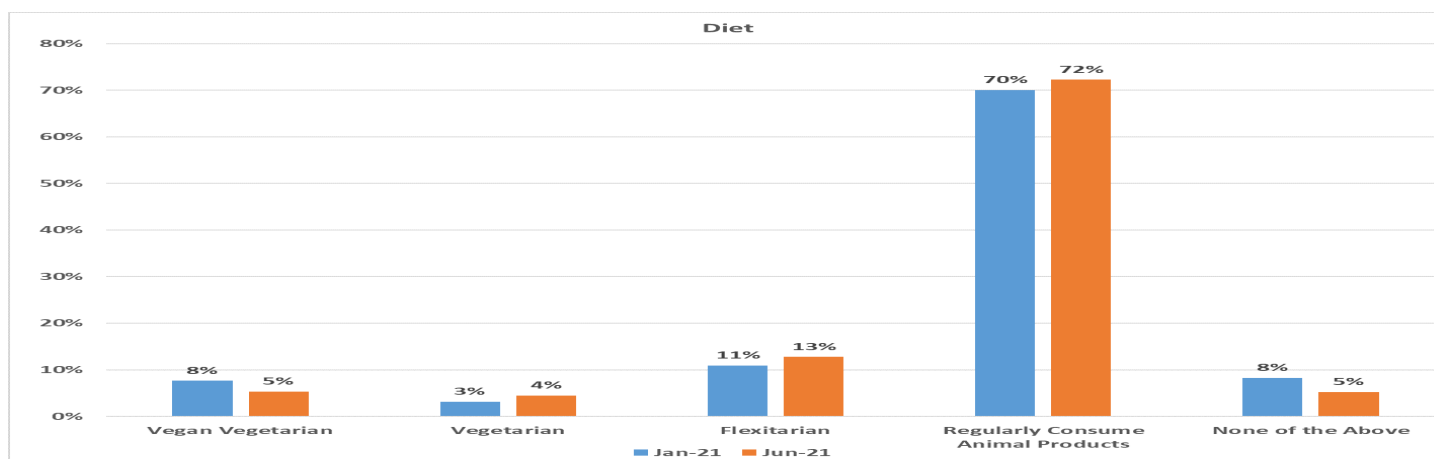


Personal Diet Trends

Each respondent answers a multiple-choice question allowing self-identification of personal diets. Presented options are Vegan Vegetarian (do not eat meat, fish, dairy, eggs, honey or any food derived from animals), Vegetarian (do not eat meat or fish, but do eat dairy and eggs), Flexitarian/Semi-Vegetarian (mostly follow a vegetarian diet, but occasionally eat meat or fish), Regularly consume meat, fish/seafood, or products derived from animals, and None of the above. The following table reports mean prevalence of each diet.

Diet	<i>Vegan Vegetarian</i>	<i>Vegetarian</i>	<i>Flexitarian</i>	<i>Regularly Consume Animal Products</i>	<i>None of the Above</i>
Jan-21	8%	3%	11%	70%	8%
Feb-21	8%	5%	11%	70%	6%
Mar-21	6%	5%	12%	71%	6%
Apr-21	7%	6%	13%	65%	9%
May-21	8%	5%	13%	66%	7%
Jun-21	5%	4%	13%	72%	5%

The following figure compares January and June values.



Ad Hoc Questioning Insights

Each month, a unique set of ad hoc questions is included. The specific wording of each ad hoc question is available in the full survey instruments posted online.

Below is a list by month of these questions with response frequencies included in parentheses.⁸ Given the multitude of questions here, readers are encouraged to draw top-line conclusions from base frequencies that are reported.

At times, questions are intentionally repeated from prior months and in other instances questions are only asked in one month. In cases where different versions were randomly assigned, key words (e.g. food, beef, or pork) or values (e.g. 15% or 30%) varied over treatments to reveal differences in responses.

January

Have you, or someone in your family obtained the coronavirus?

Yes (21.44%)

No (78.56%)

As a result of the coronavirus pandemic, did you or someone in your family experience a change in employment status (laid off, furloughed, reduced hours, fired, etc.)?

Yes (33.11%)

No (66.89%)

How would you describe the amount of meat your household currently has on-hand at home (e.g. in refrigerator or freezer)?

More meat on-hand than normal (20.12%)

Same amount as normal (67.68%)

Less meat on-hand than normal (12.20%)

Thinking of the last time you were buying food for at-home consumption, which of the following best describes the set of meat options available?

The volume and type of meat options available seemed normal and consistent with the past (72.57%)

The volume and type of meat options available did not seem normal and consistent with the past (27.43%)

Those selecting “did not seem normal” received a corresponding follow-up question: Please indicate which of the following would describe your observation (check all that apply):

- ☐ Lower overall volume of beef available (16.39%)
- ☐ Lower overall volume of pork available (10.14%)
- ☐ Lower overall volume of chicken available (11.34%)
- ☐ Different variety of beef cuts/products available (6.28%)
- ☐ Different variety of pork cuts/products available (2.78%)
- ☐ Different variety of chicken cuts/products available (2.37%)
- ☐ Other (2.72%)

There is significant interest around the development of an available coronavirus vaccine. What best describes your expectations regarding when a vaccine will be available to you?

- ☐ September 2020 (2.49%)
- ☐ October 2020 (3.05%)
- ☐ November 2020 (4.03%)
- ☐ December 2020 (4.80%)
- ☐ January 2021 (9.26%)
- ☐ February 2021 (12.22%)
- ☐ March 2021 (17.11%)
- ☐ April 2021 (12.54%)
- ☐ May 2021 (7.41%)
- ☐ June 2021 (8.44%)
- ☐ July-December 2021 (9.58%)
- ☐ 2022 or Later (2.84%)
- ☐ Never, I do not believe a vaccine will be developed and available to me (6.23%)

If you had a vaccine available, what best describes the changes you would likely make regarding meals, dining-in at restaurants (eating on-site)?

- ☐ immediately have more dine-in meals at restaurants (19.09%)
- ☐ slowly begin to have some more dine-in meals at restaurants (38.27%)
- ☐ would not change the number of dine-in meals at restaurants (42.64%)

In your own words please describe how you expect your BEEF consumption in 2021 to compare with 2020?

Open-ended responses were summarized in a Word Cloud in the January base report.

In your own words please describe how you expect your PORK consumption in 2021 to compare with 2020?

Open-ended responses were summarized in a Word Cloud in the January base report.

February

Have you, or someone in your family obtained the coronavirus?

Yes (23.20%)

No (76.80%)

As a result of the coronavirus pandemic, did you or someone in your family experience a change in employment status (laid off, furloughed, reduced hours, fired, etc.)?

Yes (34.26%)

No (65.74%)

How would you describe the amount of meat your household currently has on-hand at home (e.g. in refrigerator or freezer)?

More meat on-hand than normal (24.30%)

Same amount as normal (63.75%)

Less meat on-hand than normal (11.95%)

Thinking of the last time you were buying food for at-home consumption, which of the following best describes the set of meat options available?

The volume and type of meat options available seemed normal and consistent with the past (76.76%)

The volume and type of meat options available did not seem normal and consistent with the past (23.24%)

Those selecting “did not seem normal” received a corresponding follow-up question: Please indicate which of the following would describe your observation (check all that apply):

- ☐ Lower overall volume of beef available (14.98%)
- ☐ Lower overall volume of pork available (10.40%)
- ☐ Lower overall volume of chicken available (11.10%)
- ☐ Different variety of beef cuts/products available (6.41%)
- ☐ Different variety of pork cuts/products available (1.89%)
- ☐ Different variety of chicken cuts/products available (1.83%)
- ☐ Other (1.71%)

There is significant interest around the development of an available coronavirus vaccine. What best describes your expectations regarding when a vaccine will be available to you?

- o September 2020 (2.97%)
- o October 2020 (2.63%)
- o November 2020 (2.52%)
- o December 2020 (5.02%)
- o January 2021 (8.44%)
- o February 2021 (16.07%)
- o March 2021 (14.43%)
- o April 2021 (9.42%)
- o May 2021 (8.79%)
- o June 2021 (9.01%)
- o July-December 2021 (10.48%)
- o 2022 or Later (3.54%)
- o Never, I do not believe a vaccine will be developed and available to me (6.70%)

If you had a vaccine available, what best describes the changes you would likely make regarding meals, dining-in at restaurants (eating on-site)?

- o immediately have more dine-in meals at restaurants (22.43%)
- o slowly begin to have some more dine-in meals at restaurants (38.93%)
- o would not change the number of dine-in meals at restaurants (38.64%)

Please indicate how trustworthy is information about meat and livestock from the following sources?

Respondents selected 5 of 15 presented sources as Most and 5 as Least trustworthy.

How much do you know about each of the following meat and livestock sources?

Respondents were provided a 5-point Likert scale spanning from Nothing (1) to A Great Deal (5).

A scatterplot showing the relationship of perceived trust and one's knowledge of a source was included in the February base report.

March

Have you, or someone in your family obtained the coronavirus?

Yes (22.73%)

No (77.27%)

As a result of the coronavirus pandemic, did you or someone in your family experience a change in employment status (laid off, furloughed, reduced hours, fired, etc.)?

Yes (32.05%)

No (67.95%)

How would you describe the amount of meat your household currently has on-hand at home (e.g. in refrigerator or freezer)?

More meat on-hand than normal (19.21%)

Same amount as normal (68.00%)

Less meat on-hand than normal (12.79%)

Thinking of the last time you were buying food for at-home consumption, which of the following best describes the set of meat options available?

The volume and type of meat options available seemed normal and consistent with the past (75.00%)

The volume and type of meat options available did not seem normal and consistent with the past (25.00%)

Those selecting “did not seem normal” received a corresponding follow-up question: Please indicate which of the following would describe your observation (check all that apply):

- ☐ Lower overall volume of beef available (15.83%)
- ☐ Lower overall volume of pork available (9.90%)
- ☐ Lower overall volume of chicken available (11.64%)
- ☐ Different variety of beef cuts/products available (5.35%)
- ☐ Different variety of pork cuts/products available (2.49%)
- ☐ Different variety of chicken cuts/products available (2.82%)
- ☐ Other (1.65%)

April

Have you, or someone in your family obtained the coronavirus?

Yes (21.90%)

No (78.10%)

As a result of the coronavirus pandemic, did you or someone in your family experience a change in employment status (laid off, furloughed, reduced hours, fired, etc.)?

Yes (30.52%)

No (69.48%)

How would you describe the amount of meat your household currently has on-hand at home (e.g. in refrigerator or freezer)?

More meat on-hand than normal (21.25%)

Same amount as normal (70.26%)

Less meat on-hand than normal (8.49%)

Thinking of the last time you were buying food for at-home consumption, which of the following best describes the set of meat options available?

The volume and type of meat options available seemed normal and consistent with the past (77.98%)

The volume and type of meat options available did not seem normal and consistent with the past (22.02%)

Those selecting “did not seem normal” received a corresponding follow-up question: Please indicate which of the following would describe your observation (check all that apply):

- ☐ Lower overall volume of beef available (12.11%)
- ☐ Lower overall volume of pork available (9.20%)
- ☐ Lower overall volume of chicken available (9.16%)
- ☐ Different variety of beef cuts/products available (5.94%)
- ☐ Different variety of pork cuts/products available (2.38%)
- ☐ Different variety of chicken cuts/products available (2.41%)
- ☐ Other (1.22%)

Which of the following best describes your knowledge and involvement with “Meatless Monday”?

- ☐ I have never heard of “Meatless Monday” (57.26%)
- ☐ I have heard of “Meatless Monday” but have never consciously participated (27.44%)
- ☐ I infrequently participate in “Meatless Monday” (8.20%)
- ☐ I regularly participate in “Meatless Monday” (7.10%)

Which of the following is true of the last package of beef products you purchased? Please check all that apply.

Steak

- ☐ Never Purchased or Cannot Remember Last Purchase (20.13%)
- ☐ Labeled Organic (9.78%)
- ☐ Labeled Free of Added Hormones (14.17%)
- ☐ Labeled Free of Added Antibiotics (14.47%)
- ☐ Labeled Natural (16.75%)
- ☐ Labeled As Animal Welfare Friendly (7.78%)
- ☐ None of the Above (0%)

Ground Beef/Hamburger

- ☐ Never Purchased or Cannot Remember Last Purchase (13.78%)
- ☐ Labeled Organic (13.43%)
- ☐ Labeled Free of Added Hormones (15.45%)
- ☐ Labeled Free of Added Antibiotics (16.88%)
- ☐ Labeled Natural (18.22%)
- ☐ Labeled As Animal Welfare Friendly (6.88%)
- ☐ None of the Above (0%)

Roast

- ☐ Never Purchased or Cannot Remember Last Purchase (22.85%)
- ☐ Labeled Organic (10.18%)
- ☐ Labeled Free of Added Hormones (15.08%)
- ☐ Labeled Free of Added Antibiotics (14.57%)
- ☐ Labeled Natural (14.38%)
- ☐ Labeled As Animal Welfare Friendly (5.72%)
- ☐ None of the Above (0%)

Which of the following is true of the last package of pork products you purchased? Please check all that apply.

Bacon

- ☐ Never Purchased or Cannot Remember Last Purchase (15.88%)
- ☐ Labeled Organic (7.95%)
- ☐ Labeled Free of Added Hormones (13.42%)
- ☐ Labeled Free of Added Antibiotics (12.87%)
- ☐ Labeled Natural (16.87%)
- ☐ Labeled As Stall-Free (6.27%)
- ☐ Labeled As Animal Welfare Friendly (5.28%)
- ☐ None of the Above (0%)

Pork Chops

- ☐ Never Purchased or Cannot Remember Last Purchase (18.67%)
- ☐ Labeled Organic (8.74%)
- ☐ Labeled Free of Added Hormones (11.85%)
- ☐ Labeled Free of Added Antibiotics (14.17%)
- ☐ Labeled Natural (15.44%)
- ☐ Labeled As Stall-Free (6.63%)
- ☐ Labeled As Animal Welfare Friendly (4.88%)
- ☐ None of the Above (0%)

Sausage

- ☐ Never Purchased or Cannot Remember Last Purchase (17.21%)
- ☐ Labeled Organic (7.96%)
- ☐ Labeled Free of Added Hormones (13.17%)
- ☐ Labeled Free of Added Antibiotics (14.33%)
- ☐ Labeled Natural (16.17%)
- ☐ Labeled As Stall-Free (6.58%)
- ☐ Labeled As Animal Welfare Friendly (5.04%)
- ☐ None of the Above (0%)

May

Have you, or someone in your family obtained the coronavirus?

Yes (25.03%)

No (74.97%)

As a result of the coronavirus pandemic, did you or someone in your family experience a change in employment status (laid off, furloughed, reduced hours, fired, etc.)?

Yes (38.11%)

No (61.89%)

How would you describe the amount of meat your household currently has on-hand at home (e.g. in refrigerator or freezer)?

More meat on-hand than normal (22.77%)

Same amount as normal (65.26%)

Less meat on-hand than normal (11.97%)

Thinking of the last time you were buying food for at-home consumption, which of the following best describes the set of meat options available?

The volume and type of meat options available seemed normal and consistent with the past (77.10%)

The volume and type of meat options available did not seem normal and consistent with the past (22.90%)

Those selecting “did not seem normal” received a corresponding follow-up question: Please indicate which of the following would describe your observation (check all that apply):

- ☐ Lower overall volume of beef available (10.93%)
- ☐ Lower overall volume of pork available (9.01%)
- ☐ Lower overall volume of chicken available (9.59%)
- ☐ Different variety of beef cuts/products available (5.61%)
- ☐ Different variety of pork cuts/products available (2.85%)
- ☐ Different variety of chicken cuts/products available (3.63%)
- ☐ Other (1.79%)

June

Have you, or someone in your family obtained the coronavirus?

Yes (28.70%)

No (71.30%)

As a result of the coronavirus pandemic, did you or someone in your family experience a change in employment status (laid off, furloughed, reduced hours, fired, etc.)?

Yes (34.72%)

No (65.28%)

How would you describe the amount of meat your household currently has on-hand at home (e.g. in refrigerator or freezer)?

More meat on-hand than normal (16.81%)

Same amount as normal (68.40%)

Less meat on-hand than normal (14.80%)

Thinking of the last time you were buying food for at-home consumption, which of the following best describes the set of meat options available?

The volume and type of meat options available seemed normal and consistent with the past (83.19%)

The volume and type of meat options available did not seem normal and consistent with the past (16.81%)

Those selecting “did not seem normal” received a corresponding follow-up question: Please indicate which of the following would describe your observation (check all that apply):

- ☐ Lower overall volume of beef available (16.03%)
- ☐ Lower overall volume of pork available (9.74%)
- ☐ Lower overall volume of chicken available (12.18%)
- ☐ Different variety of beef cuts/products available (8.18%)
- ☐ Different variety of pork cuts/products available (3.30%)
- ☐ Different variety of chicken cuts/products available (2.42%)
- ☐ Other (1.46%)

Endnotes

- 1) MDM project details including survey instruments and individual monthly reports are available here: <https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data>
- 2) Meat demand determinants modeling results are summarized here to immediately follow from the previously presented information on choice experiment based mean willingness-to-pay and respondent selection frequency. Regression results should be interpreted relative to omitted, base case characteristics. For instance, the impact of age is interpreted relative to the base group which is respondents over 55 years of age. Protein values (PV) are effects coded (+1 if selected to be in the most important group, -1 if in the least important group, and 0 if not selected implying moderate importance) with Price being omitted.
- 3) The 12 Protein Values examined each month are summarized in the next section of this report.
- 4) The impact of Price importance is implied by the negative sum of parameter estimates on the other 11 Protein Values.
- 5) Note also that in a December 2019 pre-launch, trial run of the Meat Demand Monitor base survey instrument, one-half of respondents were asked to reveal “protein” values as shown here and the other one-half were presented “meat” values. The cardinal and ordinal conclusions were the same, supporting use of “protein” as utilized since full project launch in February 2020.
- 6) Additional details on the now concluded FooDS project are available here: http://www.agecon.okstate.edu/agecon_research.asp
- 7) This follow-up is omitted for respondents indicating “Other or No Protein” was consumed.
- 8) Note presented frequencies reflect respondent weights derived over the entire study period. Accordingly, small differences may appear from values reported in individual, base month reports where respondent weights for a given month are used.

Additional MDM Project details including survey questions, past report releases, and a description of methods are available online at:
<https://www.agmanager.info/livestock-meat/meat-demand/monthly-meat-demand-monitor-survey-data>

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