KANSAS STATE
Department of Agricultural Economics
July 2020 Summary Report

MDM: Meat Demand Monitor

The MDM tracks U.S. consumer preferences, views, and demand for meat with separate analysis for retail and food service channels. MDM is a monthly online survey with a sample of over 2,000 respondents reflecting the national population.

Multi-Month Summary Report: February - June 2020

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 February and June 2020 are outlined, providing the project's first multi-month, summary report.[i] Data from over 10,000 survey respondents are used to examine trends for the first five months of this new project.

Key insights include:

- Grocery meat demand peaked in April, while food service meat demand was lowest in April.
- Taste, Freshness, Safety, and Price persistently rank highest in importance to protein purchasing decisions, with Price increasing in importance since the pandemic began.
- Away-from-home consumption of beef and pork for all three daily meals has declined since February.
- Across restaurant groups, the Fast Casual group gained share, perhaps reflecting drive-thru or curbside capabilities, while the Local Independent group lost share.
- Across sources of protein for at-home consumption, the Grocery Store group gained prevalence while the Mass Merchandiser group lost share.
- Overall inclusion of beef and pork in daily meals remained steady over this period.
- A barometer of consumer knowledge on USDA inspection, assessing 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 COVID19 focused insights from monthly ad hoc questions introduced as the pandemic evolved. Modeling of beef and pork demand determinants, by market channel and product, is also provided. Characteristics of those self-identifying as regularly consuming animal products versus Flexitarian, Vegetarian, or Vegetarian Vegan are also determined.

i We thank Elevation Economics, LLC for valuable assistance in generating this report.

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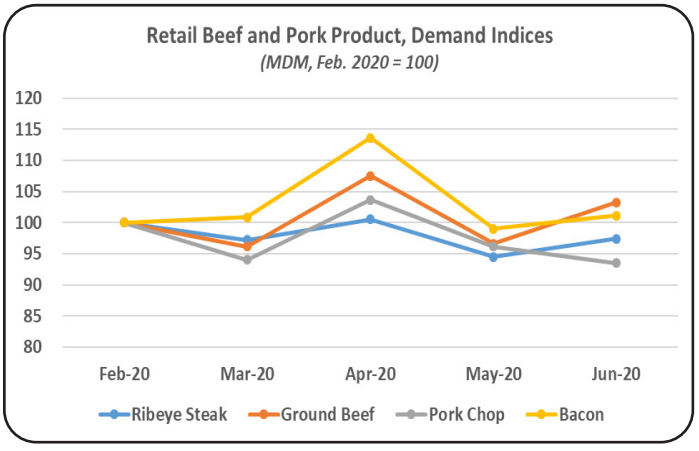
Meat Demand: Willingness to Pay Trends

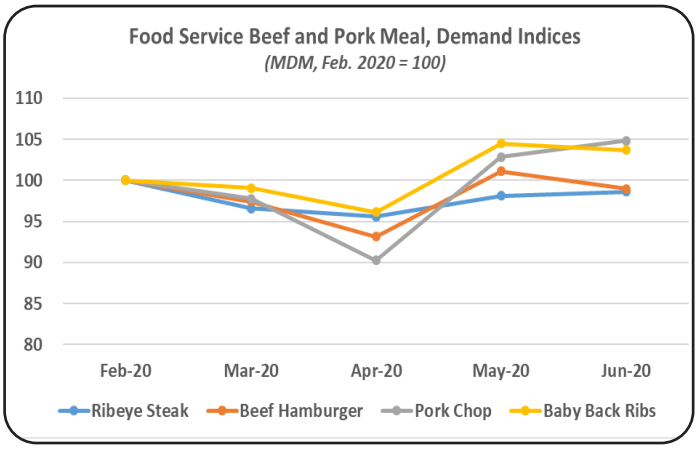
Maximum willingness-to-pay (WTP) for eight different items and meals was calculated each month. WTP is shown separately for retail (grocery) and food service (restaurant, away-from-home) channels in the following table.

RETAIL		Ribeye Steak	Ground Beef	Pork Chop	Bacon	Chicken Breast	Plant-Based Patty	Shrimp	Beans and Rice
Feb-20	WTP ($/lb)	$16.35	$7.18	$6.11	$4.45	$7.43	$7.76	$8.94	$2.08
Mar-20	WTP ($/lb)	$15.89	$6.90	$5.74	$4.49	$7.13	$7.98	$8.55	$2.12
Apr-20	WTP ($/lb)	$16.44	$7.72	$6.33	$5.06	$7.58	$8.23	$8.98	$2.56
May-20	WTP ($/lb)	$15.45	$6.94	$5.87	$4.41	$6.90	$7.57	$8.82	$1.74
Jun-20	WTP ($/lb)	$15.92	$7.41	$5.71	$4.50	$7.20	$7.52	$8.22	$1.98

FOOD SERVICE		Ribeye Steak	Beef Ham-burger	Pork Chop	Baby Back Ribs	Chicken Breast	Plant-Based Patty	Shrimp	Salmon
Feb-20	WTP ($/meal)	$25.79	$18.88	$14.92	$17.69	$17.26	$13.31	$16.52	$18.08
Mar-20	WTP ($/meal)	$24.90	$18.39	$14.58	$17.53	$16.79	$12.83	$17.38	$17.27
Apr-20	WTP ($/meal)	$24.65	$17.58	$13.47	$17.01	$16.17	$11.57	$16.51	$17.12
May-20	WTP ($/meal)	$25.30	$19.09	$15.34	$18.49	$17.57	$12.76	$17.06	$17.97
Jun-20	WTP ($/meal)	$25.43	$18.69	$15.64	$18.35	$17.48	$12.63	$17.25	$18.14

The following figures present WTP estimates as index values relative to February 2020. As an example, the retail WTP index for ground beef in June 2020 was 103.24 meaning demand was 3.24% stronger in June than in February. Similarly, the food service WTP index for pork chop meals was 104.82 indicating demand was 4.82% stronger in June than in February. More broadly, retail demand peaked in April while food service demand was lowest in April for all eight evaluated items. This divergent pattern likely reflects COVID19 impacts and highlights insights offered in the Meat Demand Monitor project by separately monitoring market channels.





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In January of 2018 a report focused on beef demand determinants was submitted to the Cattlemen's Beef Board.[2] One analysis in that study leveraged choice experiment data collected in the Food Demand Survey project to gain insight separately on beef steak and ground beef demand drivers. Here, the separate Retail and Food Service focused choice experiments are conducted each month in the Meat Demand Monitor project, which enables this same process to be repeated gaining extended insights.

Specifically, 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 the frequency of product selection correspond with changes in demand. As an example, differences in the frequency between respondent A and respondent B in picking pork chops in a retail setting cannot be attributed to prices and hence reflect differences in demand.

Before modeling demand determinants directly, it is useful to summarize the frequency each product is selected. 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

Item	Mean Number of Times Chosen	Percent of Times Chosen
Ribeye Steak	0.67	7.48%
Ground Beef	1.97	21.89%
Pork Chop	1.20	13.32%
Bacon	0.69	7.66%
Chicken Breast	2.25	25.01%
Plant-Based Patty	0.27	3.01%
Shrimp	0.46	5.10%
Beans and Rice	0.70	7.75%
Would Buy Something Else	0.79	8.78%

Summary of Choices, Food Service Setting

Item	Mean Number of Times Chosen	Percent of Times Chosen
Ribeye Steak	1.24	13.76%
Beef Hamburger	2.05	22.78%
Pork Chop	0.43	4.75%
Baby Back Ribs	0.97	10.80%
Chicken Breast	1.31	14.54%
Plant-Based Patty	0.43	4.77%
Shrimp	1.22	13.52%
Salmon	0.74	8.23%
Would Buy Something Else	0.62	6.86%

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 35 years of age, being male, having household income over $100,000, and not being White.[3] Those placing higher importance on Convenience, Health, Origin/Traceability, Hormone/Antibiotic-Free, Environmental Impact, or Appearance, also have stronger demand while those placing higher importance on Price have weaker demand.[4] Respondents who are primarily responsible for grocery shopping in their household and had prior day meals including beef or pork also hold stronger demand for ribeye steak. There is no strong pattern over the five evaluated months, or day of the week.

Factors Impacting Retail Meat Demand, Regression Models (Feb. - June 2020 MDM Data)

	Ribeye Steak		*Ground Beef*		*Pork Chop*		*Bacon*	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Intercept	**0.506**	**0.017**	**1.725**	**0.001**	**1.088**	**0.001**	**0.540**	**0.001**
Flexitarian	-0.121	0.390	-0.057	0.707	-0.013	0.910	-0.052	0.595
Regulalry Consume Animal Products	-0.134	0.272	**0.404**	**0.002**	**0.202**	**0.037**	-0.005	0.949
Vegan Vegetarian or Vegetarian	-0.036	0.816	0.087	0.570	0.173	0.135	-0.008	0.929
Age, Under 35	**0.391**	**0.001**	**0.341**	**0.000**	**-0.198**	**0.004**	**0.176**	**0.001**
Age, 35 to 55	0.089	0.113	**0.221**	**0.005**	**-0.173**	**0.003**	**0.092**	**0.012**
Male	**0.128**	**0.010**	0.013	0.837	-0.003	0.941	0.036	0.293
Married	-0.009	0.865	0.085	0.183	0.049	0.323	0.059	0.087
Children under 12 in Household	0.105	0.179	-0.084	0.305	0.029	0.641	-0.011	0.829
College, 4-Year Degree	0.014	0.799	**-0.313**	**0.001**	-0.008	0.878	**-0.099**	**0.004**
Income, Above $100k	**0.217**	**0.002**	-0.057	0.501	0.095	0.137	-0.018	0.692
Hispanic, Latino, or Spanish Origin	0.038	0.611	**-0.230**	**0.005**	**0.207**	**0.001**	-0.057	0.230
Race, White	**-0.155**	**0.032**	0.108	0.139	0.071	0.184	-0.004	0.929
Political Affiliation, Democratic	-0.049	0.316	-0.032	0.619	-0.028	0.538	-0.035	0.296
Region, Northeast	-0.064	0.410	-0.090	0.343	0.114	0.102	-0.045	0.359
Region, Midwest	-0.079	0.278	0.081	0.394	0.105	0.119	**0.110**	**0.031**
Region, South	0.007	0.918	0.065	0.419	**0.115**	**0.044**	0.006	0.884
PV, Freshness	0.062	0.269	**-0.164**	**0.004**	-0.000	0.997	-0.048	0.136
PV, Taste	0.050	0.325	-0.115	0.079	-0.039	0.370	-0.028	0.443
PV, Safety	0.020	0.640	-0.042	0.423	0.023	0.553	-0.018	0.521
PV, Convenience	**0.156**	**0.002**	-0.029	0.614	0.014	0.743	-0.011	0.695
PV, Nutrition	0.033	0.490	**-0.109**	**0.034**	-0.046	0.246	-0.021	0.456
PV, Health	0.080	0.071	**-0.202**	**0.000**	-0.040	0.324	**-0.078**	**0.010**
PV, Origin/Traceability	**0.280**	**0.001**	**-0.106**	**0.046**	0.001	0.978	-0.022	0.473
PV, Hormone/Antibiotic-Free	**0.179**	**0.001**	**-0.120**	**0.036**	-0.030	0.422	-0.038	0.147
PV, Animal Welfare	0.041	0.371	**-0.146**	**0.005**	-0.056	0.154	0.004	0.876
PV, Environmental Impact	**0.182**	**0.001**	-0.079	0.157	-0.047	0.261	-0.017	0.594
PV, Appearance	**0.105**	**0.025**	-0.021	0.720	0.020	0.635	-0.005	0.870
Grocery Shopping, Solely/Primarily Responsible	**0.183**	**0.039**	-0.042	0.743	-0.062	0.546	-0.034	0.561
Grocery Shopping, Typically at least One-Half	0.082	0.378	-0.084	0.539	-0.014	0.899	0.013	0.832
Prior Day Meals, Including Beef	**0.234**	**0.001**	**0.256**	**0.001**	-0.014	0.655	**0.065**	**0.024**
Prior Day Meals, Including Pork	**0.099**	**0.016**	-0.064	0.179	**0.121**	**0.000**	**0.117**	**0.001**
Prior Day Meals, Including Chicken	-0.012	0.743	**-0.116**	**0.006**	-0.010	0.752	0.016	0.528
Prior Day Meals, Including Fish/Seafood	0.027	0.572	**-0.199**	**0.001**	-0.033	0.410	0.019	0.572
Prior Day Meals, Including Alternative Proteins	-0.003	0.939	**-0.275**	**0.001**	**-0.075**	**0.028**	-0.037	0.158
Prior Day Meals, Including Other or No Protein	-0.058	0.093	**-0.129**	**0.003**	**-0.152**	**0.001**	**-0.079**	**0.001**

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Factors Impacting Retail Meat Demand, Regression Models (Feb. - June 2020 MDM Data), continued

	Ribeye Steak		*Ground Beef*		*Pork Chop*		*Bacon*	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
March	-0.061	0.404	-0.007	0.938	-0.006	0.928	0.044	0.373
April	0.002	0.981	0.156	0.094	-0.012	0.855	0.066	0.143
May	-0.092	0.226	0.090	0.337	0.063	0.375	0.059	0.207
June	-0.037	0.619	0.160	0.079	-0.064	0.342	0.047	0.314
Sunday	-0.051	0.536	-0.100	0.318	0.054	0.515	0.007	0.904
Tuesday	**0.224**	**0.018**	-0.010	0.919	-0.082	0.289	-0.021	0.683
Wednesday	0.063	0.473	0.020	0.862	-0.083	0.301	0.048	0.375
Thursday	-0.007	0.927	0.005	0.961	-0.107	0.185	0.049	0.380
Friday	0.109	0.202	-0.023	0.825	0.041	0.629	0.059	0.322
Saturday	0.046	0.581	0.087	0.404	-0.028	0.727	0.032	0.555
Adjusted R-square	0.119		0.077		0.028		0.041	
Number of Observations	5,035		5,035		5,035		5,035	

Moving to ground beef, retail demand is stronger for individuals who self-declare their diet involves regular consumption of animal products, are under 55 years of age, do not hold a 4-year college degree, and are not of Hispanic, Latino, or Spanish origin. Those placing higher importance on Price, have weaker demand.[5] Individuals with prior day meals including beef hold stronger ground beef demand while those with higher prevalence of Chicken, Fish/Seafood, Alternative Proteins, or No/Other Protein consumption hold weaker demand. Compared to February, demand was stronger in April and June.

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 self-declare their diet involves regular consumption of animal products, are over 55 years of age, are of Hispanic, Latino, or Spanish origin, and reside in the South region. Individuals with prior day meals including pork hold stronger pork chop demand while those with higher prevalence of Alternative Proteins or No/Other Protein consumption hold weaker demand.

Examining bacon retail demand reveals stronger demand for consumers under the age of 55, without a 4-year college degree, and residing in the Midwest. Those who place higher importance on Health have weaker demand. Individuals with prior day meals including pork or beef hold stronger bacon demand while those with higher prevalence of No/Other Protein consumption hold weaker demand.

Contrasting retail pork demand patterns reveals different impacts of age and region. Furthermore, retail pork demand appears less sensitive than beef to stated importance of the 12 evaluated protein values.

Transitioning to food service, stronger ribeye steak demand aligns with individuals who self-declare as Vegan Vegetarian or Vegan. This observation is perhaps puzzling, but may reaffirm past observations of stated diet desires not fully aligning with actual meat purchasing behavior. Demand is higher if household income exceeds $100,000 or a respondent places higher importance on Freshness, Safety, Origin/Traceability, Animal Welfare, Environmental Impact, and Appearance. If beef was included more in prior day meals demand is higher while inclusion of chicken, fish/seafood, alternative proteins, or other/no protein in yesterday's meals leads to lower demand.

Moving to beef hamburger, food service demand is weaker as expected by those declaring Flexitarian or Vegan Vegetarian diets. Demand is stronger for those under 55 years of age or do not hold a 4-year college degree. Those placing higher importance on Price have weaker demand. Individuals with prior day meals including beef hold stronger beef hamburger demand while those with higher prevalence of Fish/Seafood or Alternative Proteins consumption hold weaker demand.

Factors Impacting Food Service Meat Demand, Regression Models (Feb. - June 2020 MDM Data)

	Ribeye Steak		*Beef Hamburger*		*Pork Chop*		*Baby Back Ribs*	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Intercept	**1.389**	**0.001**	**1.549**	**0.001**	**0.365**	**0.000**	**0.727**	**0.001**
Flexitarian	**-0.281**	**0.053**	**-0.498**	**0.008**	0.058	0.424	-0.041	0.652
Regulalry Consume Animal Products	0.085	0.517	0.096	0.564	-0.058	0.264	**0.305**	**0.001**
Vegan Vegetarian or Vegetarian	**0.374**	**0.028**	**-0.451**	**0.018**	**0.217**	**0.003**	-0.022	0.824
Age, Under 35	0.128	0.220	**1.151**	**0.001**	-0.024	0.553	**-0.218**	**0.004**
Age, 35 to 55	0.098	0.311	**0.637**	**0.001**	-0.030	0.393	-0.127	0.076
Male	0.087	0.205	-0.010	0.901	**0.125**	**0.001**	**0.219**	**0.001**
Married	0.085	0.283	-0.118	0.144	**0.065**	**0.028**	0.046	0.410
Children under 12 in Household	0.089	0.372	0.185	0.102	**0.095**	**0.016**	0.059	0.382
College, 4-Year Degree	**-0.240**	**0.003**	**-0.372**	**0.001**	0.037	0.347	0.017	0.776
Income, Above $100k	**0.315**	**0.001**	**-0.217**	**0.053**	0.047	0.305	-0.025	0.727
Hispanic, Latino, or Spanish Origin	0.079	0.394	-0.029	0.792	0.029	0.478	0.096	0.169
Race, White	-0.073	0.367	0.177	0.060	-0.036	0.295	-0.070	0.247
Political Affiliation, Democratic	-0.037	0.573	-0.128	0.088	-0.000	0.989	0.081	0.111
Region, Northeast	-0.155	0.134	0.132	0.290	**0.097**	**0.027**	-0.059	0.493
Region, Midwest	-0.169	0.097	-0.101	0.380	**0.073**	**0.054**	0.006	0.936
Region, South	-0.099	0.253	-0.047	0.639	**0.111**	**0.003**	-0.118	0.078
PV, Freshness	0.121	0.055	**-0.232**	**0.002**	-0.032	0.328	0.067	0.197
PV, Taste	0.046	0.487	-0.071	0.346	-0.010	0.733	0.046	0.342
PV, Safety	0.102	0.088	-0.113	0.106	0.031	0.208	0.048	0.326
PV, Convenience	0.109	0.084	-0.101	0.144	0.057	0.072	0.050	0.342
PV, Nutrition	0.008	0.884	**-0.151**	**0.022**	0.033	0.267	-0.030	0.482
PV, Health	0.014	0.830	**-0.332**	**0.001**	0.025	0.311	0.074	0.085
PV, Origin/Traceability	**0.212**	**0.001**	**-0.136**	**0.047**	**0.070**	**0.017**	0.079	0.088
PV, Hormone/Antibiotic-Free	0.006	0.922	**-0.188**	**0.002**	**0.057**	**0.019**	0.044	0.345
PV, Animal Welfare	**0.168**	**0.006**	-0.128	0.076	0.038	0.130	0.001	0.991
PV, Environmental Impact	**0.128**	**0.035**	**-0.210**	**0.003**	**0.077**	**0.010**	-0.001	0.985
PV, Appearance	**0.223**	**0.000**	-0.100	0.152	0.024	0.468	**0.092**	**0.044**
Prior Day Meals, Including Beef	**0.235**	**0.001**	**0.269**	**0.001**	0.006	0.776	0.028	0.448
Prior Day Meals, Including Pork	0.050	0.319	0.012	0.857	**0.117**	**0.001**	**0.127**	**0.002**
Prior Day Meals, Including Chicken	**-0.117**	**0.016**	0.013	0.812	-0.005	0.823	0.062	0.084
Prior Day Meals, Including Fish/Seafood	**-0.127**	**0.031**	**-0.310**	**0.000**	0.053	0.241	0.049	0.268
Prior Day Meals, Including Alternative Proteins	**-0.106**	**0.021**	**-0.134**	**0.012**	-0.043	0.056	**-0.107**	**0.006**
Prior Day Meals, Including Other or No Protein	**-0.105**	**0.020**	0.002	0.973	**-0.047**	**0.013**	**-0.073**	**0.049**

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Factors Impacting Food Service Meat Demand, Regression Models (Feb. - June 2020 MDM Data), continued

	Ribeye Steak		*Beef Hamburger*		*Pork Chop*		*Baby Back Ribs*	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
March	-0.080	0.443	0.003	0.978	-0.019	0.707	-0.001	0.993
April	-0.012	0.912	-0.110	0.363	-0.054	0.248	0.004	0.958
May	-0.138	0.184	0.041	0.726	0.010	0.824	0.098	0.212
June	-0.058	0.572	-0.039	0.733	0.029	0.567	0.066	0.389
Sunday	-0.089	0.450	0.091	0.510	0.005	0.920	0.068	0.448
Tuesday	-0.057	0.644	0.104	0.443	-0.018	0.711	-0.100	0.268
Wednesday	-0.020	0.872	-0.011	0.933	-0.006	0.922	-0.051	0.597
Thursday	-0.153	0.194	-0.045	0.735	-0.033	0.543	-0.078	0.394
Friday	0.110	0.411	0.132	0.377	-0.076	0.153	-0.064	0.486
Saturday	0.023	0.861	0.062	0.652	-0.081	0.093	0.026	0.796
Adjusted R-square	0.048		0.091		0.079		0.030	
Number of Observations	5,067		5,067		5,067		5,067	

We observe pork chop food service demand to be stronger for respondents who self-declare their diet Vegan Vegetarian or Vegan. Stronger demand is held by those who are male, married, have children at home, and do not live in the West. Demand is stronger if Origin/Traceability, Hormone/Antibiotic-Free, and Environmental Impact are more important. Individuals with prior day meals including pork hold stronger pork chop demand while those with higher prevalence of No/Other Protein consumption hold weaker demand.

Examining baby back ribs, food service demand reveals stronger demand for consumers sharing they regularly consume animal products, are male, or place high importance on Appearance. Demand is weaker for those under 35 years of age. Individuals with prior day meals including pork hold stronger baby back ribs demand while those with higher prevalence of Alternative Proteins or No/Other Protein consumption hold weaker demand.

Protein Values Trends

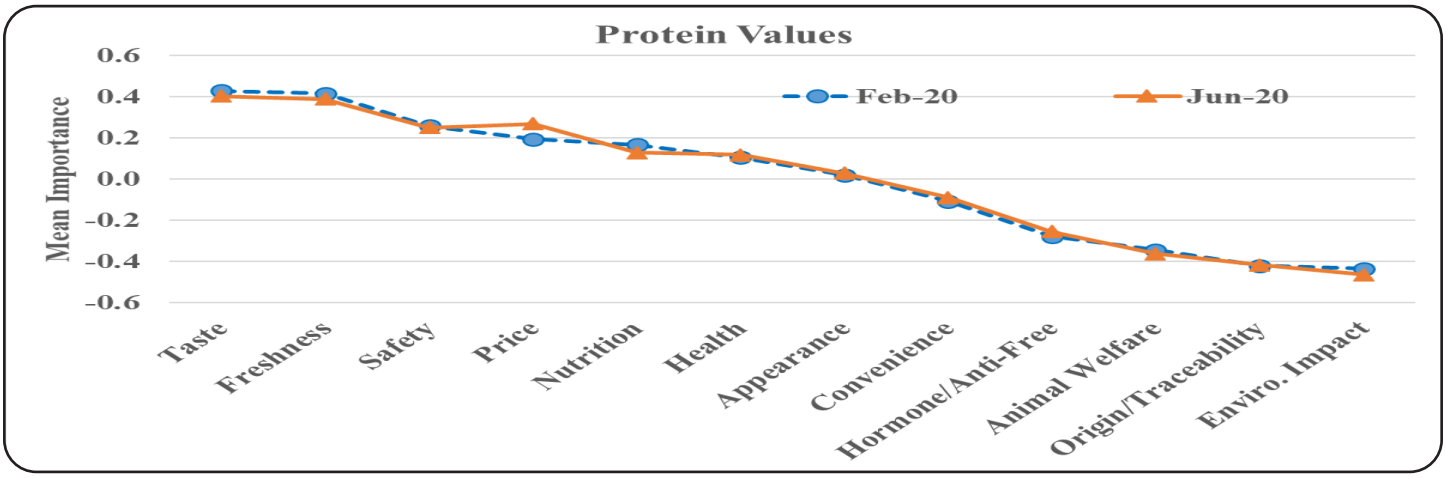
Given a list of 12 protein values, respondents are asked to indicate the four "most important" and four "least important" in importance when purchasing protein items.[6] Relative importance is conveyed by calculating the proportion of times a protein value was selected as "most important" minus the times 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 2.08 times as important as Nutrition (0.27/0.13 = 2.08) while Convenience is 4.65 times as important as Origin/Traceability.

It is also worth noting that these February-June 2020 relative importance patterns are consistent with those found over the 2013-2018 period in the Food Demand Survey (FooDS) project.[7] 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.

PROTEIN VALUES	Taste	Fresh-ness	Safety	Price	Nutri-tion	Health	Appear-ance	Conve-nience	Hormone/ Anti-Free	Animal Welfare	Origin/ Traceability	Enviro. Impact
Feb-20	0.43	0.41	0.26	0.19	0.17	0.11	0.02	-0.11	-0.28	-0.34	-0.42	-0.43
Mar-20	0.45	0.41	0.25	0.26	0.16	0.11	0.01	-0.11	-0.30	-0.38	-0.41	-0.46
Apr-20	0.43	0.45	0.24	0.24	0.18	0.11	0.02	-0.11	-0.29	-0.37	-0.46	-0.43
May-20	0.39	0.42	0.24	0.26	0.14	0.13	0.00	-0.13	-0.30	-0.36	-0.38	-0.42
Jun-20	0.40	0.39	0.25	0.27	0.13	0.12	0.03	-0.09	-0.25	-0.36	-0.42	-0.46

Comparing June with February 2020, the importance of Price has grown the most. This may reflect household economic impacts from the COVID19 pandemic beginning in March with stay-at-home orders and related societal adjustments. More broadly, the relative importance of these protein values has been rather steady. The following figure compares February and June values.



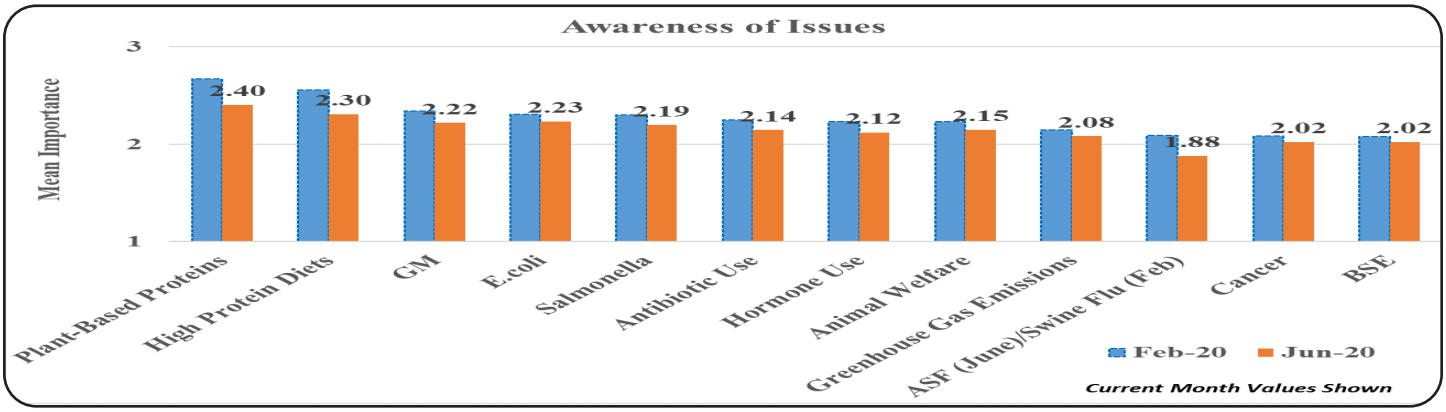
Issue Awareness Trends

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. In February and March "Swine Flu" was included and was replaced by "African Swine Fever" in April.

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	Swine Flu	African Swine Fever
Feb-20	2.67	2.56	2.34	2.30	2.30	2.25	2.23	2.23	2.15	2.08	2.08	2.06	1.86	1.80	1.78	2.09	
Mar-20	2.61	2.46	2.29	2.14	2.20	2.16	2.15	2.14	2.11	2.06	1.98	2.03	1.88	1.82	1.80	2.12	
Apr-20	2.43	2.40	2.27	2.15	2.15	2.14	2.10	2.15	2.03	2.02	1.96	2.05	1.79	1.72	1.72		1.81
May-20	2.39	2.29	2.19	2.09	2.10	2.12	2.08	2.14	2.03	1.99	1.97	1.96	1.79	1.76	1.74		1.82
Jun-20	2.40	2.30	2.22	2.23	2.19	2.14	2.12	2.15	2.08	2.02	2.02	2.03	1.89	1.88	1.83		1.88

As shown in the following figure, comparing June with February 2020, most awareness scores have declined perhaps reflecting increased focus on COVID19.

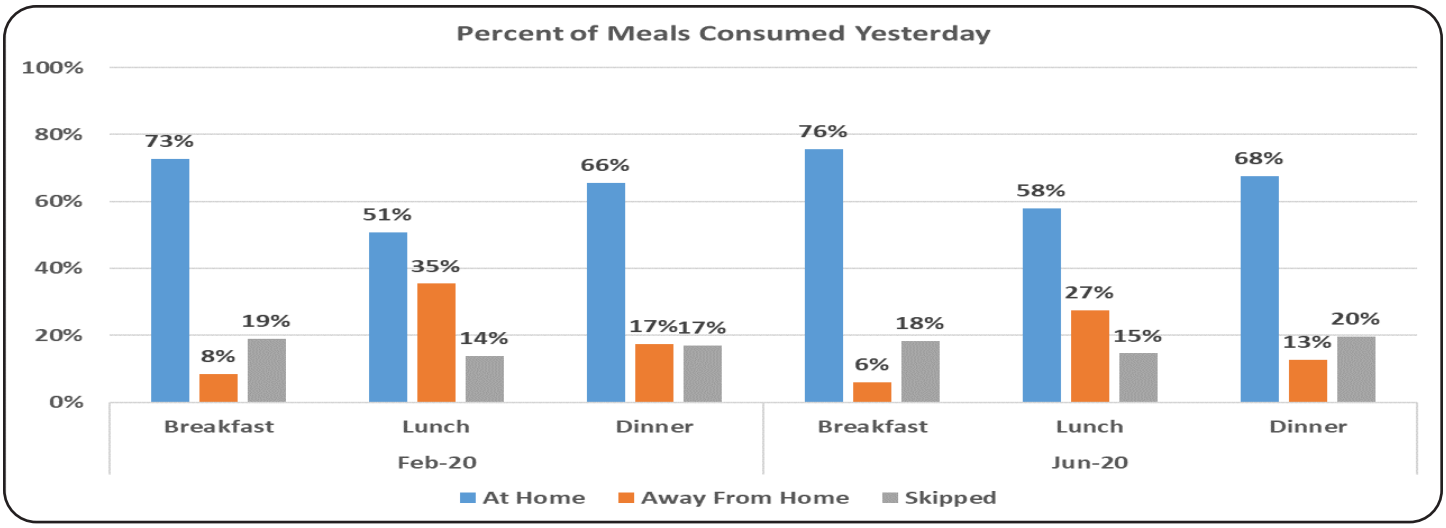


Prior Day Meal Location Trends

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. The decrease in away from home, and corresponding increase in at home consumption of all three meals since February likely reflects the COVID19 pandemic.

Meal Location	Breakfast	Lunch	Dinner	Breakfast	Lunch	Dinner	Breakfast	Lunch	Dinner
		At Home			*Away From Home*			*Skipped*	
Feb-20	73%	51%	66%	8%	35%	17%	19%	14%	17%
Mar-20	72%	52%	70%	8%	33%	13%	21%	15%	17%
Apr-20	78%	66%	77%	5%	22%	10%	18%	12%	14%
May-20	78%	62%	73%	5%	23%	10%	17%	15%	17%
Jun-20	76%	58%	68%	6%	27%	13%	18%	15%	20%

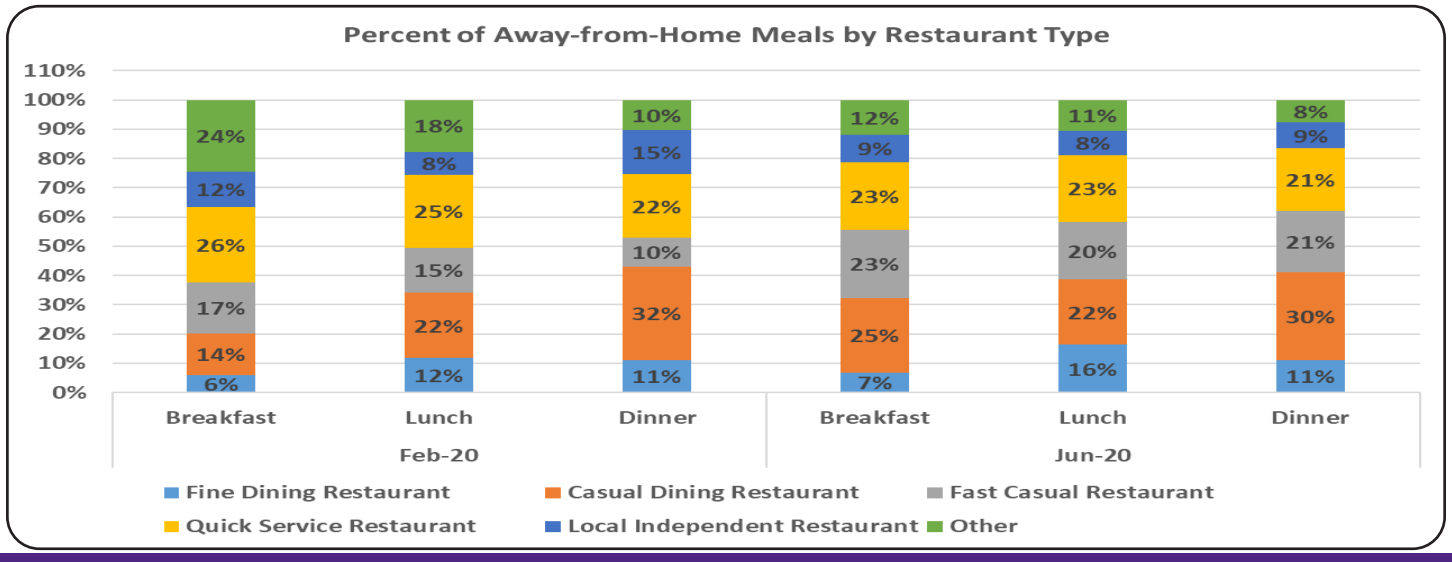
The following figure compares February and June values.



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
			Breakfast			
Feb-20	6%	14%	17%	26%	12%	24%
Mar-20	9%	14%	16%	26%	5%	31%
Apr-20	6%	7%	21%	37%	4%	25%
May-20	8%	23%	10%	34%	6%	20%
Jun-20	7%	25%	23%	23%	9%	12%
			Lunch			
Feb-20	12%	22%	15%	25%	8%	18%
Mar-20	15%	25%	13%	23%	7%	17%
Apr-20	14%	18%	13%	32%	6%	16%
May-20	17%	23%	15%	25%	7%	13%
Jun-20	16%	22%	20%	23%	8%	11%
			Dinner			
Feb-20	11%	32%	10%	22%	15%	10%
Mar-20	13%	33%	16%	18%	9%	11%
Apr-20	18%	28%	19%	20%	6%	9%
May-20	14%	20%	23%	30%	7%	8%
Jun-20	11%	30%	21%	21%	9%	8%

To interpret properly and fully, note the June 2020 dinner meal estimate of 30% for Casual Dining Restaurant. Combined with the earlier estimate that 13% of dinner meals were consumed away-from-home implies that over all dinner meals in June, 3.8% (0.13*0.30) occurred at a Casual Dining Restaurant.



The figure above compares February and June values. This marks the increase in share by the Fast Casual Restaurant group, and decline in the Local Independent Restaurant and Other groups. This shift may reflect more prevalent, existence of drive-thru, curbside, etc. capabilities and lower reliance on sit-down, onsite dining for the Fast Casual Restaurant group.

If respondents indicate consuming a meal at home yesterday, they received a follow-up question to identify the source where the protein was purchased.[8] 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 February and June values.

Once considering in-store, online, and delivery modes collectively, an increase in share for the Grocery Store group is clearly revealed. For all three meals, protein procurement from grocery stores using online ordering was higher in May and June than February likely reflecting pandemic-induced changes in household food procurement. The Mass Merchandiser group declined fairly consistently since February. 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 was below 7% in each month.

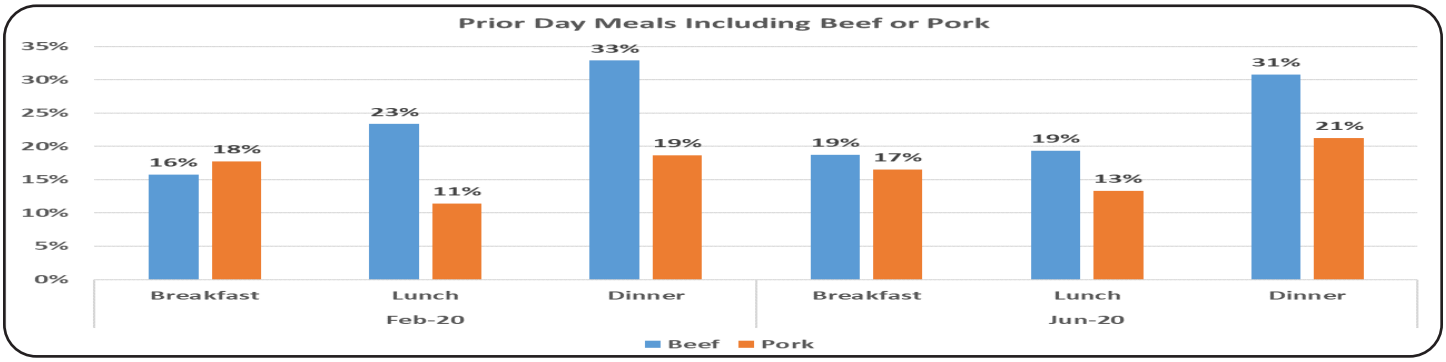
Protein Source, At-Home	Grocery Store (such as Kroger, Safeway,	Ordered On-line & Picked Up from Local Grocery Store	Ordered Online from Local Grocery Store and Delivered	Mass Merchan-diser (such as Wal-Mart,	Club Store (such as Costco, Sam's	Order Online from Online Service (such as Amazon, Peapod, 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,	Other
						Breakfast					
Feb-20	52%	6%	3%	23%	6%	2%	2%	2%	3%	0%	2%
Mar-20	52%	5%	4%	21%	6%	2%	2%	1%	3%	0%	2%
Apr-20	53%	5%	5%	19%	8%	2%	1%	1%	3%	0%	2%
May-20	53%	7%	5%	17%	7%	3%	1%	1%	2%	1%	2%
Jun-20	54%	7%	6%	16%	8%	4%	1%	1%	2%	0%	1%
						Lunch					
Feb-20	57%	4%	2%	20%	5%	1%	1%	1%	2%	0%	6%
Mar-20	61%	3%	2%	17%	7%	1%	1%	1%	2%	0%	6%
Apr-20	56%	4%	3%	18%	7%	2%	1%	1%	2%	0%	5%
May-20	55%	5%	4%	15%	8%	1%	1%	1%	2%	0%	7%
Jun-20	53%	5%	4%	18%	8%	2%	0%	1%	2%	1%	6%
						Dinner					
Feb-20	59%	2%	2%	20%	5%	1%	1%	2%	2%	1%	5%
Mar-20	58%	2%	2%	18%	7%	1%	0%	1%	2%	0%	7%
Apr-20	58%	3%	3%	16%	6%	2%	1%	1%	2%	0%	7%
May-20	54%	4%	4%	13%	8%	2%	1%	2%	2%	1%	9%
Jun-20	56%	4%	3%	13%	8%	2%	1%	2%	3%	0%	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
		Beef			*Pork*	
Feb-20	16%	23%	33%	18%	11%	19%
Mar-20	16%	21%	31%	18%	12%	21%
Apr-20	13%	23%	32%	21%	15%	20%
May-20	15%	20%	31%	17%	14%	19%
Jun-20	19%	19%	31%	17%	13%	21%

The following figure compares February and June values.

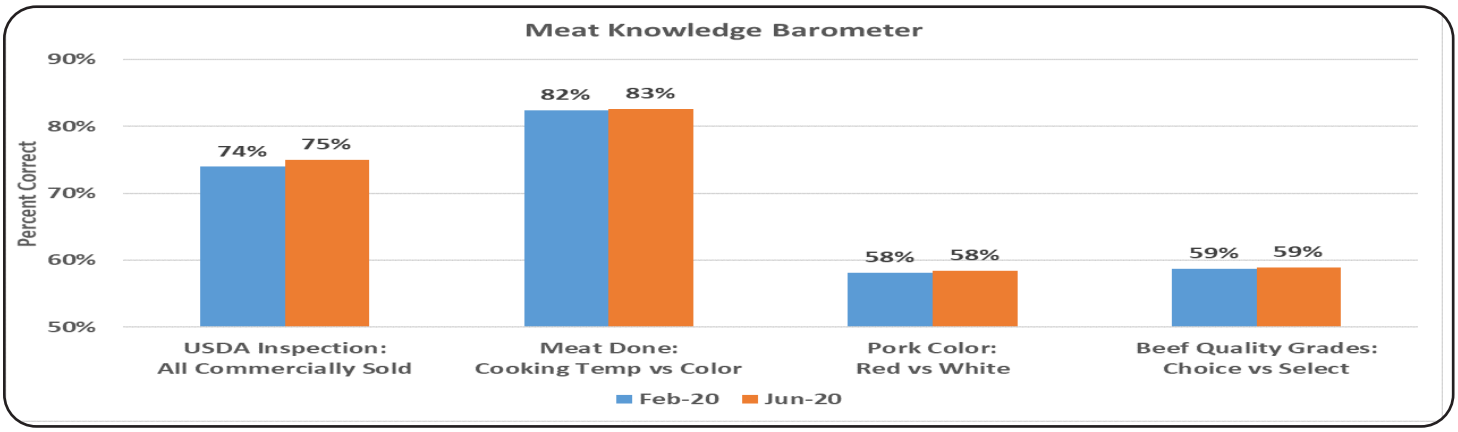


Meat Knowledge Trends

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.

Meat Knowledge	USDA Inspection: All Commercially Sold	Meat Done: Cooking Temp vs. Color	Pork Color: Red vs. White	Beef Quality Grades: Choice vs. Select
Feb-20	75%	83%	42%	41%
Mar-20	77%	82%	42%	41%
Apr-20	74%	84%	45%	40%
May-20	75%	82%	44%	40%
Jun-20	75%	83%	41%	41%

The following figure compares February and June values.

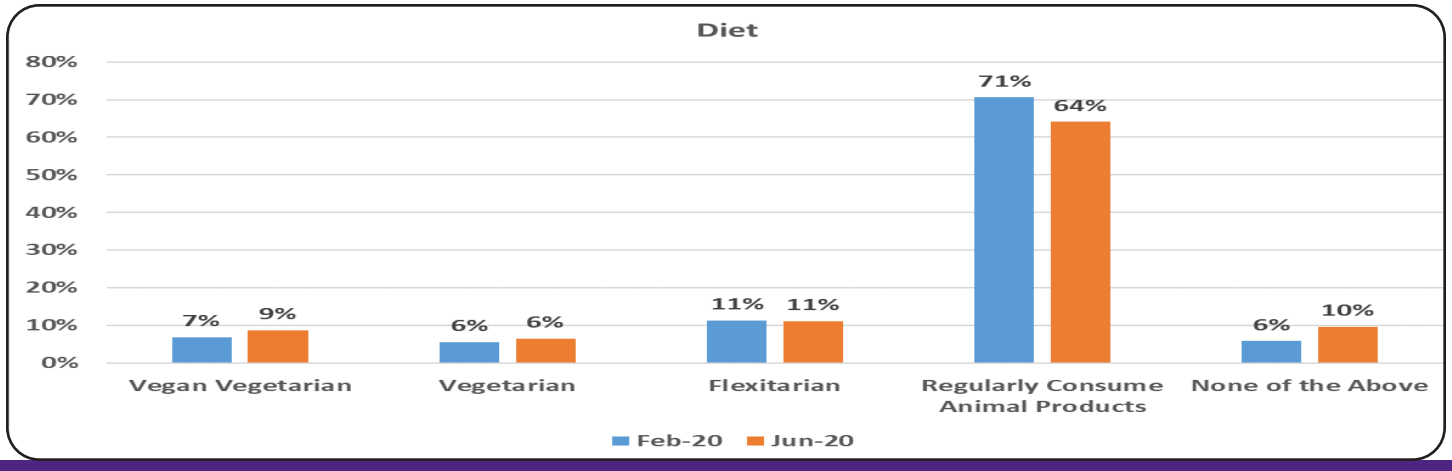


Personal Diet Trends

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; no clear trend is apparent currently.

Diet	Vegan Vegetarian	Vegetarian	Flexitarian	Regularly Consume Animal Products	None of the Above
Feb-20	7%	6%	11%	71%	6%
Mar-20	6%	5%	11%	70%	8%
Apr-20	6%	4%	11%	72%	7%
May-20	9%	5%	9%	69%	8%
Jun-20	9%	6%	11%	64%	10%

The following figure compares February and June values.



The diet data can be analyzed further to identify determinants of self-identified diets. The following table presents results of probit models designed to identify how socio-economic characteristics and protein values impact diet declarations.[9] Furthermore, these models provide statistical tests, once controlling for adjustments in other factors, on changes in monthly prevalence rates for each diet type.

Over the entire five-month period, 70.5% identify as "Regularly consume meat, fish/seafood, or products derived from animals," a combined 10.6% identify as "Flexitarian/Semi-Vegetarian (mostly follow a vegetarian diet, but occasionally eat meat or fish)," 11.6% identify either as "Vegan Vegetarian (do not eat meat, fish, dairy, eggs, honey or any food derived from animals)" or "Vegetarian (do not eat meat or fish, but do eat dairy and eggs)," and the remaining 7.4% selected "None of the above." Hereafter the four diet groups are referred to as "Regularly consume animal products," "Flexitarian," "Vegan Vegetarian or Vegetarian," and "None of the Above."

Considering time trends since the base month of February, the share of respondents electing "None of the Above" was higher in March and June. The share selecting "Regularly consume animal products" was lower in June, those selecting "Flexitarian" was lower in May, and those selecting either "Vegan Vegetarian" or "Vegetarian" was higher in June than in February.

Characteristics of respondents more likely to select "regularly consume animal products" include being over 55 years of age, being married, not having children in the home, not having a 4-year college degree, having household income below $100,000, being White, and residing in the Midwest. Respondents indicating Freshness or Taste are most important when purchasing protein are more likely to select "regularly consume meat" while those indicating Convenience, Nutrition, Origin/Traceability, Hormone-Free/Antibiotic-Free, Animal Welfare, or Environmental Impact are most important are less likely.

Respondents more likely to select "Flexitarian" are female, not being married, having a 4-year college degree, and not residing in either the Midwest or South. Those indicating Nutrition, Origin/Traceability, Hormone-Free/Antibiotic-Free, Animal Welfare, or Environmental Impact are most important when purchasing protein are more likely to select "Flexitarian" while those indicating Freshness or Taste, are most important are less likely.

Individuals more likely to identify as either "Vegan Vegetarian" or "Vegetarian" are under the age of 55, male, not married, have children at home, have a 4-year college degree, have household income above $100,000, are of Hispanic, Latino, or Spanish origin, not White, and reside in the South region. Broadly speaking, these results align with Lusk (2017) in a related assessment using Food Demand Survey (FooDS) data for the June 2013-January 2016 period.

Those indicating Origin/Traceability, Animal Welfare, or Environmental Impact are most important when purchasing protein are more likely to select "Vegan Vegetarian" or "Vegetarian" while those indicating Freshness or Taste, are most important are less likely.

Factors Impacting Self-Declared Diets, Probit Models (Feb. - June 2020 MDM Data)

	Regularly Consume Animal Products		*Flexitarian*		*Vegan Vegetarian OR Vegetarian*		*None of the Above*	
Parameter	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Intercept	**0.398**	**0.001**	**-0.853**	**0.001**	**-1.652**	**0.001**	**-1.498**	**0.001**
Age, Under 35	**-0.457**	**0.001**	0.069	0.182	**0.699**	**0.001**	**0.261**	**0.001**
Age, 35 to 55	**-0.212**	**0.001**	-0.056	0.231	**0.299**	**0.001**	**0.412**	**0.001**
Male	0.051	0.077	**-0.175**	**0.001**	**0.144**	**0.000**	-0.045	0.249
Married	**0.138**	**0.001**	**-0.089**	**0.024**	**-0.103**	**0.020**	**-0.098**	**0.026**
Children under 12 in Household	**-0.251**	**0.001**	0.029	0.517	**0.387**	**0.001**	-0.031	0.532
College, 4-Year Degree	**-0.189**	**0.001**	**0.138**	**0.001**	**0.289**	**0.001**	**-0.095**	**0.047**
Income, Above $100k	**-0.078**	**0.027**	-0.002	0.967	**0.216**	**0.001**	**-0.135**	**0.008**
Hispanic, Latino, or Spanish Origin	-0.058	0.134	-0.008	0.874	**0.094**	**0.043**	0.018	0.724
Race, White	**0.213**	**0.001**	-0.048	0.254	**-0.283**	**0.001**	-0.033	0.478
Political Affiliation, Democratic	-0.016	0.594	0.019	0.607	0.056	0.141	-0.040	0.327
Region, Northeast	-0.025	0.574	-0.065	0.214	0.036	0.544	0.049	0.406
Region, Midwest	**0.083**	**0.053**	**-0.233**	**0.001**	0.087	0.134	-0.028	0.625
Region, South	0.038	0.293	**-0.156**	**0.000**	**0.159**	**0.001**	**-0.107**	**0.035**
PV, Freshness	**0.102**	**0.001**	**-0.079**	**0.013**	**-0.124**	**0.000**	0.026	0.478
PV, Taste	**0.094**	**0.001**	**-0.084**	**0.010**	**-0.101**	**0.003**	0.033	0.367
PV, Safety	0.038	0.131	0.018	0.548	-0.046	0.156	-0.051	0.133
PV, Convenience	**-0.054**	**0.038**	0.029	0.361	0.011	0.734	0.064	0.072
PV, Nutrition	**-0.062**	**0.011**	**0.128**	**0.001**	-0.043	0.173	0.041	0.228
PV, Health	-0.041	0.098	**0.113**	**0.000**	-0.020	0.524	-0.009	0.781
PV, Origin/Traceability	**-0.154**	**0.001**	**0.068**	**0.027**	**0.117**	**0.000**	**0.112**	**0.001**
PV, Hormone/Antibiotic-Free	**-0.074**	**0.002**	**0.124**	**0.001**	0.025	0.406	-0.005	0.890
PV, Animal Welfare	**-0.163**	**0.001**	**0.118**	**0.001**	**0.126**	**0.001**	0.058	0.084
PV, Environmental Impact	**-0.234**	**0.001**	**0.088**	**0.004**	**0.211**	**0.001**	**0.162**	**0.001**
PV, Appearance	0.008	0.749	-0.036	0.248	-0.001	0.980	0.017	0.623
March	-0.018	0.680	-0.045	0.391	-0.042	0.468	**0.166**	**0.006**
April	0.043	0.325	-0.049	0.350	-0.105	0.072	0.083	0.178
May	-0.040	0.366	**-0.122**	**0.026**	0.101	0.080	0.118	0.061
June	**-0.175**	**0.001**	-0.045	0.401	**0.150**	**0.010**	**0.268**	**0.001**
Log Likelihood	-5,300		-3,237		-2,882		-2,531	
Respondent Share	70.47%		10.57%		11.62%		7.35%	

Ad Hoc Questioning Insights

Each month, a unique set of ad hoc questions is included. Given the MDM project's launch has corresponded with the COVID19 pandemic, to-date these ad hoc questions have mainly focused on evolving pandemic-oriented issues. 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.[10] Given the multitude of questions here, readers are encouraged to draw top-line conclusions from base frequencies that are reported. Deeper analyses or summaries may possibly be provided in the future in other outputs.

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.

February

How much have you heard about the coronavirus in the past week?

None, I have not heard anything (8.19%)
I have heard some information (36.26%)
I have heard a lot of information (55.51%)

Your selection of protein items to consume impacts your risk of obtaining the coronavirus.

True (27.53%)
False (72.47%)

March

How much have you heard about the coronavirus in the past week?

None, I have not heard anything (5.01%)
I have heard some information (19.63%)
I have heard a lot of information (75.31%)

Your selection of protein items to consume impacts your risk of obtaining the coronavirus.

True (23.75%)
False (76.25%)

April

How much have you heard about the coronavirus in the past week?

None, I have not heard anything (3.19%)

I have heard some information (18.58%)

I have heard a lot of information (78.16%)

Your selection of protein items to consume impacts your risk of obtaining the coronavirus.

True (24.16%)

False (75.84%)

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

Yes (10.48%)

No (89.52%)

Is your state of residence currently under a 'stay-at-home' order (in response to the coronavirus)?

Yes (89.34%)

No (8.95%)

I do not know (1.71%)

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 (51.69%)

No (48.31%)

May

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

Yes (9.23%)

No (90.77%)

Is your state of residence currently under a 'stay-at-home' order (in response to the coronavirus)?

Yes (75.32%)

No (21.86%)

I do not know (2.81%)

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 (44.49%)

No (55.51%)

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 (26.13%)

Same amount as normal (60.46%)

Less meat on-hand than normal (13.41%)

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 (54.46%)

The volume and type of meat options available did not seem normal and consistent with the past (45.44%)

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 (34.66%)
- Lower overall volume of pork available (25.30%)
- Lower overall volume of chicken available (26.17%)
- Different variety of beef cuts/products available (9.76%)
- Different variety of pork cuts/products available (2.40%)
- Different variety of chicken cuts/products available (3.62%)
- Other (1.42%)

To assess possible impact of retail price increases given production disruptions respondents were randomly allocated to receive one of four multiple choice questions:

Suppose tomorrow you are shopping for your favorite beef product and it is available for purchase at a price 25% higher than last time you shopped. What best describes your decision?

I would buy my favorite beef product, at the same quantity as planned (27.55%)

I would buy my favorite beef product, but at a lower quantity than planned (26.47%)

I would alternatively buy a pork product (12.16%)

I would alternatively buy a chicken product (22.80%)

I would not buy a beef, pork, or chicken product (11.01%)

Suppose tomorrow you are shopping for your favorite beef product and it is available for purchase at a price 50% higher than last time you shopped. What best describes your decision?

I would buy my favorite beef product, at the same quantity as planned (20.09%)
I would buy my favorite beef product, but at a lower quantity than planned (24.12%)
I would alternatively buy a pork product (17.79%)
I would alternatively buy a chicken product (27.80%)
I would not buy a beef, pork, or chicken product (10.19%)

Suppose tomorrow you are shopping for your favorite pork product and it is available for purchase at a price 25% higher than last time you shopped. What best describes your decision?

I would buy my favorite pork product, at the same quantity as planned (25.15%)
I would buy my favorite pork product, but at a lower quantity than planned (21.47%)
I would alternatively buy a beef product (16.86%)
I would alternatively buy a chicken product (23.93%)
I would not buy a beef, pork, or chicken product (12.59%)

Suppose tomorrow you are shopping for your favorite pork product and it is available for purchase at a price 50% higher than last time you shopped. What best describes your decision?

I would buy my favorite pork product, at the same quantity as planned (17.97%)
I would buy my favorite pork product, but at a lower quantity than planned (14.40%)
I would alternatively buy a beef product (23.40%)
I would alternatively buy a chicken product (32.93%)
I would not buy a beef, pork, or chicken product (11.30%)

June

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

Yes (10.89%)
No (89.11%)

Is your state of residence currently under a 'stay-at-home' order (in response to the coronavirus)?

Yes (45.32)
No (51.19%)
I do not know (3.48%)

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 (38.76%)

No (61.24%)

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 (22.02%)

Same amount as normal (66.12%)

Less meat on-hand than normal (11.85%)

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 (58.28%)

The volume and type of meat options available did not seem normal and consistent with the past (41.72%)

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 (30.36%)
- Lower overall volume of pork available (20.08%)
- Lower overall volume of chicken available (22.29%)
- Different variety of beef cuts/products available (9.85%)
- Different variety of pork cuts/products available (2.58%)
- Different variety of chicken cuts/products available (3.26%)
- Other (1.98%)

To assess possible changes in consumer behavior due to the pandemic respondents were randomly allocated to receive one of three multiple choice questions:

Please indicate which of the following changes you have made due to the coronavirus pandemic (please check all that apply):

Increased purchase of food products that have been handled less (e.g. purchasing contact-free, touch-less, etc. products) (6.01%)

Increased the volume of food on-hand (e.g. increased home pantry, refrigerator, or freezer supplies) (13.93%)

Increased purchase of food products that are locally-sourced (5.96%)

Increased purchase of larger food packages that were handled less before my purchase, yet require more at-home preparation before use (5.85%)

Purchase food items or packages I normally would not buy (8.70%)

Increased cleaning and sanitation of purchased food products and packages (11.63%)

Please indicate which of the following changes you have made due to the coronavirus pandemic (please check all that apply):

Increased purchase of beef products that have been handled less (e.g. purchasing contact-free, touch-less, etc. products) (5.32%)

Increased the volume of beef on-hand (e.g. increased home pantry, refrigerator, or freezer supplies) (9.24%)

Increased purchase of beef products that are locally-sourced (4.67%)

Increased purchase of larger beef packages that were handled less before my purchase, yet require more at-home preparation before use (5.13%)

Purchase beef items or packages I normally would not buy (7.92%)

Increased cleaning and sanitation of purchased beef products and packages (10.28%)

Please indicate which of the following changes you have made due to the coronavirus pandemic (please check all that apply):

Increased purchase of pork products that have been handled less (e.g. purchasing contact-free, touch-less, etc. products) (4.28%)

Increased the volume of pork on-hand (e.g. increased home pantry, refrigerator, or freezer supplies) (6.62%)

Increased purchase of pork products that are locally-sourced (4.62%)

Increased purchase of larger pork packages that were handled less before my purchase, yet require more at-home preparation before use (4.38%)

Purchase pork items or packages I normally would not buy (7.68%)

Increased cleaning and sanitation of purchased pork products and packages (8.36%)

To assess possible impact of larger retail items being offered to consumers given production disruptions respondents were randomly allocated to receive one of four multiple choice questions:

Suppose tomorrow you are shopping for your favorite beef product to be consumed at-home. This beef product is available in two different package formats and prices. For instance, either individual steak cuts OR a larger product from which you cut individual steaks could be purchased. What beef package would you select?

Product is packaged as individual-serving size, involves minimal at-home pre-cooking effort, and sells for full retail price. (45.67%)

Product is packaged containing multiple servings, requires additional at-home pre-cooking effort, and sells for 15% less than full retail price. (54.33%)

Suppose tomorrow you are shopping for your favorite beef product to be consumed at-home. This beef product is available in two different package formats and prices. For instance, either individual steak cuts OR a larger product from which you cut individual steaks could be purchased. What beef package would you select?

Product is packaged as individual-serving size, involves minimal at-home pre-cooking effort, and sells for full retail price. (46.60%)

Product is packaged containing multiple servings, requires additional at-home pre-cooking effort, and sells for 30% less than full retail price. (53.40%)

Suppose tomorrow you are shopping for your favorite pork product to be consumed at-home. This pork product is available in two different package formats and prices. For instance, either individual pork chops OR a larger product from which you cut individual pork chops could be purchased. What pork package would you select?

Product is packaged as individual-serving size, involves minimal at-home pre-cooking effort, and sells for full retail price. (50.93%)

Product is packaged containing multiple servings, requires additional at-home pre-cooking effort, and sells for 15% less than full retail price. (49.07%)

Suppose tomorrow you are shopping for your favorite pork product to be consumed at-home. This pork product is available in two different package formats and prices. For instance, either individual pork chops OR a larger product from which you cut individual pork chops could be purchased. What pork package would you select?

Product is packaged as individual-serving size, involves minimal at-home pre-cooking effort, and sells for full retail price. (41.58%)

Product is packaged containing multiple servings, requires additional at-home pre-cooking effort, and sells for 30% less than full retail price. (58.42%)

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) This full report is available here: https://www.beefboard.org/wp-content/uploads/2019/06/Assessing-Beef-Demand-Determinants_FullReport.pdf

3) 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.

4) The 12 Protein Values examined each month are summarized in the next section of this report.

5) The impact of Price importance is implied by the negative sum of parameter estimates on the other 11 Protein Values.

6) Note also that in a December 2019 pre-launch, trial run of the Meat Demand Monitor base survey instrument, one-half or 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.

7) Additional details on the now concluded FooDS project are available here: http://www.agecon.okstate.edu/agecon_research.asp

8) This follow-up is omitted for respondents indicating "Other or No Protein" was consumed.

9) Here separate probit models are used to quantify the effects of included independent variables on the probability of a respondent selecting a given diet. A deeper assessment could quantify marginal effects; here a focused story on directional impacts of statistically significant factors (using 0.05 significance level) is provided. The larger the coefficient the higher the chance the individual with the given characteristic falls into the category in question.

10) Note presented frequencies reflect respondent weights derived over the entire study period of February-June. 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

The MDM Project is funded in-part by the beef checkoff and the pork checkoff.

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