SF Environment

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A Department of the City and County of San Francisco

San Francisco Antibiotic Use in Food Animals Ordinance Reporting Year 2019

September 2020

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Acknowledgements

Former San Francisco Supervisor Jeff Sheehy had the vision to introduce the Antibiotic Use in Food Animals Ordinance, which the Board of Supervisors passed unanimously on October 17, 2017. The following San Francisco Department of the Environment staff contributed to this report:

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Executive Summary

The United States' failure to respond quickly and meaningfully to the immediate public health threat of COVID-19 underscores the need to prioritize national public health concerns that affect all of us. One pressing problem that has received far too little national attention is that of antibiotic resistance, whereby the medicines used to treat bacterial infections no longer work. Some scientists estimate that as many as 162,000 people die each year from multi-drug resistant organisms[1] -- not far behind the nationwide COVID-19 death count of more than 200,000 people[2] that was published by the Centers for Disease Control (CDC) on the date of the filing of this report.

In fact, today's global pandemic shines a light on the seriousness of the problem of antibiotic resistance and the importance of preserving antibiotic efficacy. Although COVID-19 is caused by a virus, many COVID-19 patients acquire secondary infections or "co-infections," some of which may require treatment with antibiotics. For example, data from Wuhan, China indicate that as many as 50% of COVID-19 patients who died, also had secondary bacterial infections.[3] This is a tangible, present day example illustrating why we need to preserve the efficacy of antibiotics through prudent and proper usage. It is also why infectious disease specialists are calling for antibiotic resistance testing.[4]

Given the dramatic need for effective antibiotics right now, we have an even greater responsibility to minimize the misuse and overuse of antibiotics so that they will continue to work when we need them. One sector in particular, the livestock industry, must do more. Approximately two-thirds of antibiotics sold in the U.S. are used by the livestock industry. Yet there is no federal mandate for this industry to track the on-farm use of medically important[5] antibiotics.

Understanding the critical importance of ensuring our antibiotics remain effective, the San Francisco Board of Supervisors passed the Antibiotic Use in Food Animals Ordinance (Ordinance) in 2017, the first local law of its kind in the United States to increase transparency about how antibiotics are used. The law seeks to provide information about how much, when and why antibiotics are used to produce the meat and poultry we consume.

Under the Ordinance, chain grocers operating in San Francisco (defined as grocers with 25 or more stores anywhere) must report to the San Francisco Department of the Environment (SF Environment) data on the medically-important antibiotics used by the producers of the raw meat and poultry they sell. The Ordinance also requires that SF Environment publish information about this reported data so that consumers may make more informed choices about the meat and poultry they buy. This is the

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[1] Burnham, J., Olsen, M., & Kollef, M. (2019). Re-estimating annual deaths due to multidrug-resistant organism infections. Infection Control & Hospital Epidemiology, 40(1), 112-113. doi:10.1017/ice.2018.304

[2] Centers for Disease Control COVID Data Tracker, available at https://covid.cdc.gov/covid-data-tracker/?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcases-updates%2Fcases-in-us.html#cases (last accessed September 1, 2020).

[3] Michael J. Cox, et al. "Co-Infections: Potentially lethal and unexplored in COVID-19." *The Lancet Microbe*: Volume 1, Issue 1, May 2020, Page e11. Available at https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30009-4/fulltext (last accessed 9/1/20).

[4] Ibid.

[5] Medically-important antibiotics are those that are important in human medicine.

second report under the Ordinance and provides information about meat and poultry sold in San Francisco in calendar year 2019.

Highlighted Findings

In 2019, eleven grocery chains, representing more than 100 individual retail grocery stores in San Francisco, reported antibiotic use for 336 meat and poultry products sold in San Francisco. Highlights of the reported data include:

- As compared to the last reporting year, grocers provided more complete information about the *policies* that govern the production of the meat and poultry they sell, but like last year, most did not provide the required *numeric* data about antibiotic use.
- Like last year, reporting for **chicken and turkey products included the highest level of transparency** regarding use of antibiotics – at 40% and 74% of products, respectively.
- **Reporting for beef, lamb and pork products was far less transparent** than chicken and turkey – only 2%, 14% and 2% of these products, respectively, included antibiotic use data.
- Only two beef producers out of more than fifty producers provided antibiotic use data. Reporting by these producers shows that it is indeed possible to track antibiotic use.
- Ninety-seven percent of products from National Beef, Cargill, JBS and Tyson, the four largest beef packers in the country controlling 80% of the beef market, did not include any antibiotic use data. JBS provided data for one beef product produced in Australia.
- Cargill's turkey products were reported to have used 500 mg of antibiotics per animal raised[6] in 2018, but that number dropped by more than 200 mg per animal raised in 2019.
- Even though three years have passed since the passage of the Ordinance, only one grocer has a public-facing policy that limits antibiotic use – Whole Foods, which continues to maintain a storewide policy restricting the use of antibiotics across all types of meat and poultry.
- **No San Francisco grocers that sell conventionally produced meat and poultry have policies to increase transparency or restrict the use of medically important antibiotics in any meaningful way[7],** though such policies would be in the interest of public health.

Challenges and Opportunities

Normally, the reporting deadline for grocers is May 3 each year. Given that grocers were in an extreme situation in the spring of this year due to the shut-down required by the City's response to COVID-19, SF Environment extended the reporting deadline to August 3. Despite such a challenging year, grocers generally improved their reporting of antibiotic use policies. This improvement is likely due to both grocer and producer familiarity with the process, as well as training and assistance

[6] Calculation is modeled after the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC). More information on ESVAC and species by species calculations is available at https://www.ema.europa.eu/en/veterinary-regulatory/overview/antimicrobial-resistance/european-surveillance-veterinary-antimicrobial-consumption-esvac (last accessed 9/2/20).

[7] Costco has a policy posted on its website that does little more than restrict antibiotics for growth promotion, which is already a de facto requirement of the Food and Drug Administration. See https://www.costco.com/sustainability-animal-welfare.html. Target's website states it does not support "the use of routine, non-therapeutic antimicrobials to promote growth." However, 2019 data indicate that many producers in Target's supply chain do not have any restrictions on antibiotic use that align with that intention. See https://corporate.target.com/_media/TargetCorp/csr/pdf/TGT_Food-Animal-Welfare-and-Antibiotics-Policies.pdf.

provided by SF Environment. This is a good step in the right direction for public transparency about the products grocers sell.

However, grocers provided little to no numeric antibiotic use data for beef, pork and lamb and lacked data for many chicken and turkey products as well. We recognize that grocers must obtain this information from often recalcitrant meat and poultry producers. However, grocers possess buying power that can lead to greater disclosure from their suppliers and thus transform this industry. Meanwhile, in Great Britain, grocers are beginning to do just that. Nine of ten national grocery chains there have publicly available antibiotic use policies and active reduction strategies in place,[8] and six have bans on using antibiotics for disease prevention.[9] **Achievements in Great Britain show that it is possible for San Francisco grocers to leverage the power of their purse and drive changes in their supply chain to provide antibiotic use data**.

There are many examples of how large purchasers have changed the marketplace. The Danish Co-op, Denmark's largest grocer, famously decided in 2015 to no longer sell microwave popcorn that contained toxic fluorinated chemicals in the packaging, even though no alternative existed in the market. Within six months, Danish Co-op's supplier found a fluorine-free solution. Closer to home, in 2018, the City of San Francisco and several other like-minded institutional purchasers issued stringent environmental and health requirements for carpet purchases that, at the time, only two manufacturers could meet. In just two years, the carpet industry has largely pivoted away from using certain toxic chemicals in their products.

Similarly, grocers in San Francisco should take leadership in providing consumers important information that protects their health. In particular, they should seize the opportunity that their own store brands present; that is, they control the contracts for these products and should be able to obtain data about them.

The poultry industry itself is becoming a transparency success story. After years of advocacy campaigns pushing large fast-food chains to require their suppliers to reduce their use of antibiotics,[10] this sector began measuring use and setting goals around reduction. Many producers have become more transparent about their antibiotic use practices and have made their goals public. It is therefore no surprise that grocers found it easier to obtain antibiotic use data from chicken and turkey producers.

Ultimately, we all must do our part to reduce the rise in antimicrobial resistance if we wish to keep antibiotics working. All purchasers of meat and poultry, especially grocers, play a pivotal role in applying the market pressure necessary to transform the livestock industry into one that is fully transparent about its use of antibiotics. In addition, it is common for San Francisco's residents to "vote" with their dollars to support products and producers who protect human and environmental

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[8] See Appendix 3 of Save Our Antibiotics' "Supermarket Antibiotics Policies 2020 Assessment Report. Available at http://www.saveourantibiotics.org/media/1826/supermarket-antibiotics-policies-assessment-2020-report.pdf (accessed 9/1/20).

[9] The Alliance to Save Our Antibiotics, 2020, Supermarket antibiotics policies assessment 2019, available at http://www.saveourantibiotics.org/media/1826/supermarket-antibiotics-policies-assessment-2020-report.pdf (last accessed 2/28/20).

[10] Brook, L. et al., 2019, Chain Reaction V: How Top Restaurants Rate on Reducing Antibiotic Use in Their Beef Supplies, available at https://article.images.consumerreports.org/prod/content/dam/CRO%20Images%202019/Health/10October/Chain_Reaction_V_Report_October_2019 (last accessed 2/26/20).

health. But they cannot do so without complete information about the products they purchase. **It is therefore important for grocers to provide complete information so that San Francisco consumers can send accurate market signals back to grocers.**

1. Introduction

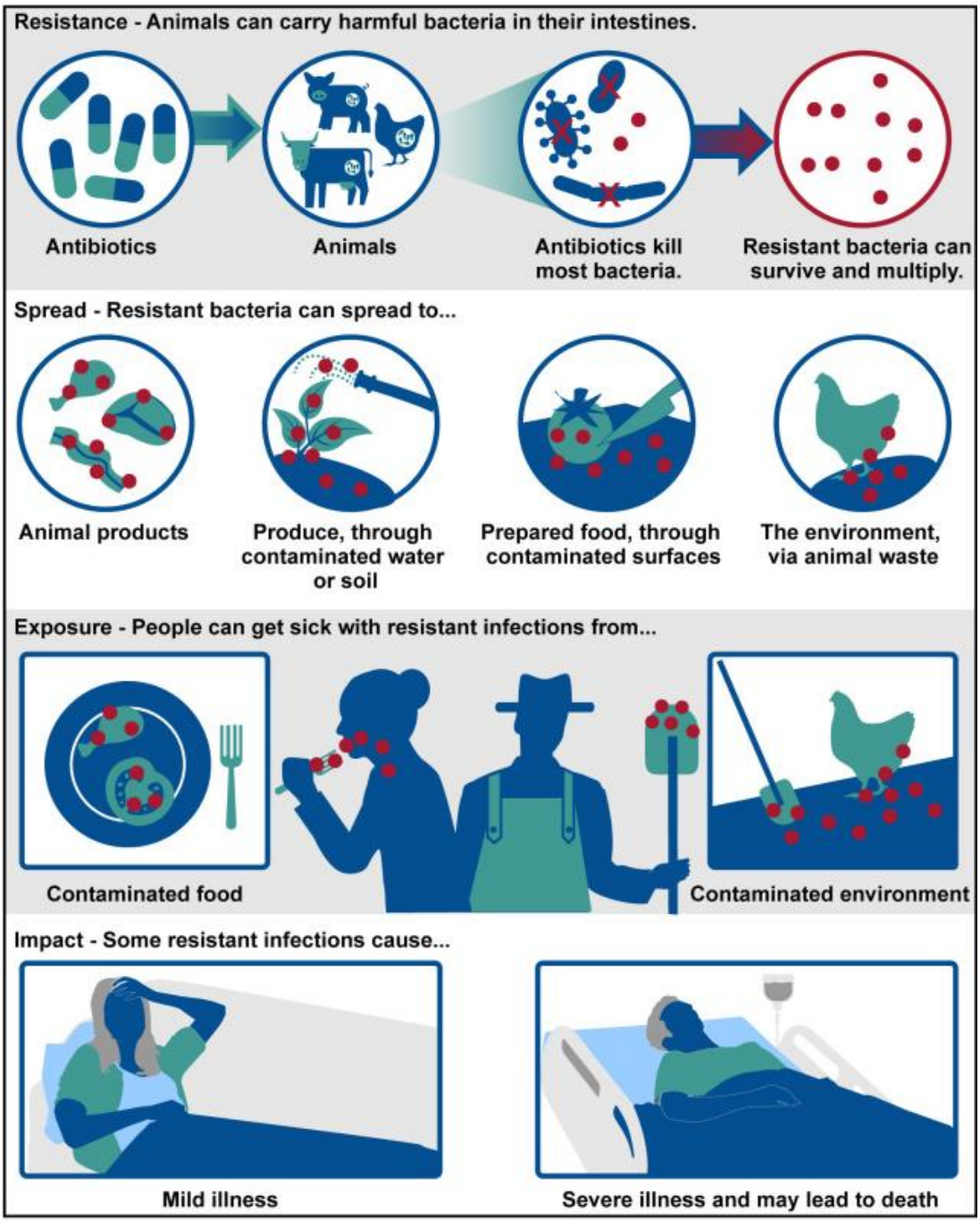
Since the discovery of penicillin in 1928 and its first use in medical treatment in the early 1940s, antibiotics have become a critical part of our medical toolbox. Yet the efficacy of antibiotics is in peril due the proliferation of antibiotic-resistant bacteria. According to the CDC, "Antibiotic resistance is one of the greatest public health challenges of our time—few treatment options exist for people infected with antibiotic-resistant bacteria."[11] To preserve the efficacy of our antibiotics, the City and County of San Francisco passed a first-in-the-nation ordinance, the Antibiotic Use in Food Animals Ordinance (Ordinance) in October of 2017. The Ordinance seeks to address the urgent public health threat of antibiotic resistance.[12]

If antibiotics are misused or mis-prescribed – whether in human or veterinary medicine – bacteria may acquire resistance to an antibiotic through gene mutation or the transfer of genetic material between bacteria. While antibiotics are essential to treating many different types of diseases in people, **almost two-thirds of all medically-important antibiotics are actually used in the livestock industry**.[13] Misuse of antibiotics in the livestock industry, such as giving antibiotics to healthy animals to promote growth or prevent disease, can result in antibiotics not working well for humans or animals. Figure 1 below shows how overuse and misuse of antibiotics in animals can contribute to the proliferation of antibiotic-resistant bacteria. Resistant strains of bacteria can quickly spread from farms to the wider world via soil, land, air, water, people working in the livestock industry, and raw meat and poultry sold in stores. That is why, in 2017, the World Health Organization (WHO) recommended that "farmers and the food industry stop using antibiotics routinely to promote growth and prevent disease in healthy animals."[14]

Meanwhile, livestock producers – particularly the beef, pork and lamb sectors – are fighting calls for improved data collection and transparency in their industry. Some producers and trade associations have claimed that their antibiotic use is responsible, but without transparency about their practices, there is no way to know whether that is true. Furthermore, without data collection, transparency and disclosure, it is difficult to make improvements in industry practices. San Francisco's Ordinance seeks to address that lack of transparency by requiring certain retailers of raw meat and poultry to report the antibiotic use policies and practices for the meat and poultry sold in their stores. The disclosed information then allows consumers to make informed purchasing decisions about whether their dollars support meat and poultry producers that use medically important antibiotics.

[11] CDC. "Antibiotics Resistance FAQs." Available at https://www.cdc.gov/antibiotic-use/community/about/antibiotic-resistance-faqs.html (last accessed 09/20/20).
[12] Ibid.
[13] David Wallinga & Avi Kar. 2020. "New Data: Animal vs. Human Antibiotic Use Remains Lopsided." Available at https://www.nrdc.org/experts/david-wallinga-md/most-human-antibiotics-still-going-us-meat-production (last accessed 9/25/20).
[14] World Health Organization (WHO). 2017. "Stop Using Antibiotics in Health Animals to Prevent the Spread of Antibiotic Resistance." Available at https://www.who.int/news-room/detail/07-11-2017-stop-using-antibiotics-in-healthy-animals-to-prevent-the-spread-of-antibiotic-resistance (last accessed 2/28/20).

Figure 1. How antibiotic resistance can develop and spread[15]



Source: Centers for Disease Control and Prevention. | GAO-17-192

1.1 Ordinance Requirements

The Ordinance requires grocers in San Francisco with 25 or more stores anywhere to report two types of information about the meat and poultry products they sell. First, grocers must answer high-level policy questions about whether and in what situations antibiotics may be given to animals raised

[15] CDC infographic as published in Government Accountability Office Report Number GAO-17-192, 2017. Available at https://www.gao.gov/assets/690/683130.pdf (last accessed 2/26/20).

for each of their raw meat and poultry products. Second, grocers must provide numeric antibiotic use information.

Antibiotic Use Policy Questions

Following are the policy questions asked of grocers, who then in turn requested this information from raw meat and poultry producers in their supply chain.

1. Was this Product Group organic or raised without antibiotics[16]?
2. Was this Product Group raised without medically important antibiotics?
3. Did the policies for this Product Group require veterinarian oversight (e.g., a veterinary feed directive or other prescription) for all medically important antibiotics administered (including for injections and topical applications)?
4. Did the policies for this Product Group prohibit medically important antibiotics for growth promotion?
5. Did the policies for this Product Group prohibit medically important antibiotics for disease prevention[17]?
6. Did the policies for this Product Group allow medically important antibiotics for disease control[18]?
7. Did the policies for this Product Group allow medically important antibiotics for disease treatment[19]?

Numeric Antibiotic Use Data

For any product that was not Organic or certified as not using antibiotics, grocers must provide the names of the producers of each product, the number of animals raised by that producer for that product line, and the number of kilograms of twelve classes of medically important antibiotics[20] used to produce that product line. These numeric data are necessary to calculate the average amount of antibiotics used to produce that product line, which then can be used to compare quantities used by different producers, to national data and to antibiotic use reported in other countries.

2. Reporting Compliance

Eleven grocers were subject to the Ordinance in 2019. As noted above, SF Environment extended the reporting deadline by three months due to COVID-19. The following stores submitted reports on time:

- Albertsons (Safeway)

[16] "Product Group" is defined as the type of meat or poultry (i.e. beef, chicken, pork, turkey, lamb) and the brand name and sub-brand.
[17] Delivery of antibiotics without a diagnosis of disease.
[18] Delivery of antibiotics to an entire flock or herd of animals when one or more animals, but not all, are diagnosed with disease.
[19] Delivery of antibiotics to an animal that is diagnosed with disease.
[20] The twelve classes are available in Appendix A of FDA's Guidance Document, CVM GFI #152 (2003), "Evaluating the Safety of Antimicrobial New Animal Drugs with Regard to Their Microbiological Effects on Bacteria of Human Health Concern."
https://www.fda.gov/media/69949/download (last accessed 9/18/20).

- Costco
- Grocery Outlet
- Kroger (Foods Co.)
- Smart & Final
- Smart Foodservice Warehouse
- The Savemart Companies (Lucky)
- Whole Foods

The following stores submitted data late:

- Target (28 days late)
- Trader Joe's (10 days late)
- Walgreens (37 days late)

One grocer, Whole Foods, reported a storewide policy prohibiting antibiotic use to produce meat and poultry sold in its stores; per the Ordinance, Whole Foods submitted public-facing documentation of this policy.

2.1 Compliance – Policy Questions

For reporting year 2019, grocers provided far more complete answers to the antibiotic use policy questions listed in Section 1.1 above than they did in the first year of reporting (2018). We attribute this progress to grocers having more experience with reporting this kind of information, greater attention to detail, and to their willingness to receive additional training and assistance from SF Environment.

The answers to the policy questions are meant to reveal the circumstances under which meat and poultry producers are using medically important antibiotics. Of particular concern is giving antibiotics to healthy animals. The US Food and Drug Administration (FDA) has been slow to address this issue, having only eliminated the use of medically important antibiotics for the purpose of increasing the rate of growth of healthy animals. The FDA continues to allow that antibiotics be given to healthy animals to prevent and/or control disease if the use is under the oversight of a licensed veterinarian.[21]

Figures 2-4 below provide an aggregated view of which policies were in use as a percentage of products sold by each grocer. Figure 2 shows whether medically important antibiotics for growth promotion was prohibited by the producer. Figure 3 shows whether medically important antibiotics for disease prevention was prohibited by the producer. Figure 4 shows whether medically important antibiotics for disease control was prohibited by the producer.

Data shown in Figure 2 is somewhat concerning because growth promotion uses should be largely eliminated, given that most meat and poultry sold in the US is raised here as well and the FDA prohibits this use of medically important antibiotics for growth promotion. It is possible that grocers or producers did not understand the question. Trader Joe's is the only store that reported offerings that fully complied with FDA eliminating growth promotion uses.

[21] FDA. 2012. "GFI #209, Judicious Use of Medically Important Antimicrobial Drugs in Food Producing Animals." https://www.fda.gov/regulatory-information/search-fda-guidance-documents/cvm-gfi-209-judicious-use-medically-important-antimicrobial-drugs-food-producing-animals (last accessed 9/10/20).

Figure 2. Percent of products offered by grocers that prohibited medically important antibiotics for growth promotion

Did the policies for this Product Group prohibit medically important antibiotics for growth promotion?	Yes	No
Trader Joe's	100%	0%
Albertsons Companies (Safeway)	86%	14%
Smart & Final	81%	19%
Savemart (Lucky)	77%	23%
Smart Foodservice Warehouse Stores	76%	24%
Kroger (Foods Co.)	57%	43%
Target	50%	50%
Grocery Outlet	35%	65%
Costco	24%	76%
Walgreens	0%	100%

Figure 3 shows whether meat and poultry sold in stores may have been raised with medically important antibiotics to prevent disease. That many products may have been raised this way is not surprising, since the FDA has not prohibited this use; nonetheless, it is a concerning practice. **Using antibiotics to prevent disease in a group of healthy animals is like giving antibiotics to healthy children going to daycare just because they will be exposed to germs.** Instead, wherever possible, producers should vaccinate animals against disease, and then provide adequate space, shelter and healthy food.

Figure 3. Percent of products that prohibited medically important antibiotics for disease prevention

Did the policies for this Product Group prohibit medically important antibiotics for disease prevention?	Yes	No
Trader Joe's	71%	29%
Smart Foodservice Warehouse Stores	47%	53%
Smart & Final	38%	63%
Savemart (Lucky)	32%	68%
Kroger (Foods Co.)	27%	73%
Albertsons Companies (Safeway)	16%	84%
Grocery Outlet	8%	92%
Costco	5%	95%
Target	0%	100%
Walgreens	0%	100%

Figure 4 below shows whether meat and poultry sold in stores may have been raised with medically important antibiotics for disease control, whereby one animal in a group is diagnosed with a disease and all animals are treated. This practice may be warranted in certain cases of very infectious disease but should not be used routinely.

Figure 4. Percent of products that allowed medically important antibiotics for disease control

Did the policies for this Product Group allow medically important antibiotics for disease control?	No	Yes
Kroger (Foods Co.)	22%	78%
Smart Foodservice Warehouse Stores	15%	85%
Savemart (Lucky)	12%	88%
Costco	6%	94%
Albertsons Companies (Safeway)	4%	96%
Grocery Outlet	0%	100%
Smart & Final	0%	100%
Target	0%	100%
Trader Joe's	0%	100%
Walgreens	0%	100%

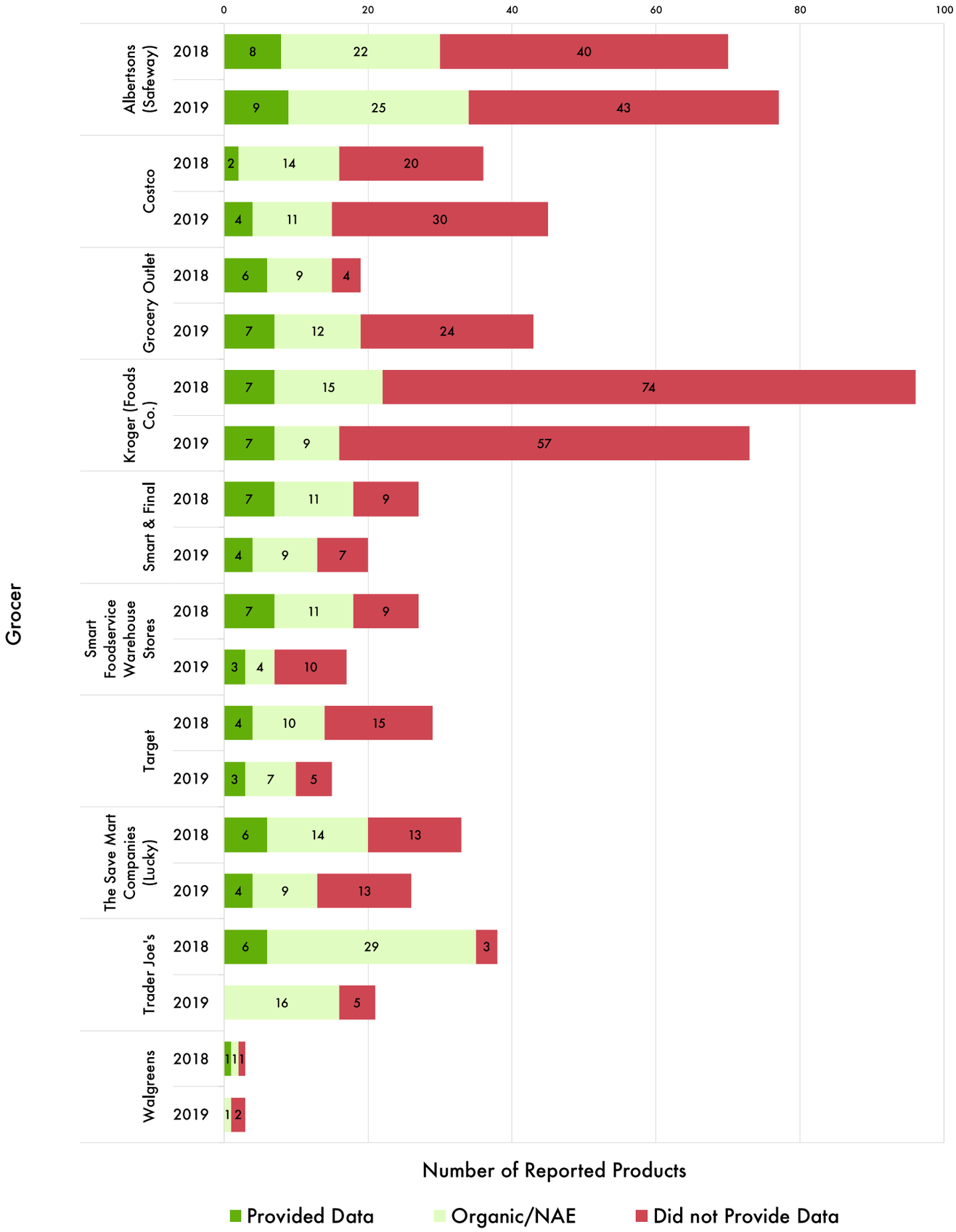
For a view of each *producer's* answers to the above questions, see Appendix A.

2.2 Compliance – Numeric Antibiotic Use Data

For all products that are not Organic or "No Antibiotics Ever" (NAE), grocers must also provide additional data: the identity of the producer(s) that supplied the raw meat or poultry for that product, the number of animals raised for that product, and the number of kilograms of 12 classes of medically important antibiotics used in those animals. These data allow for calculations that can help in comparing antibiotic use by species, producers, brands and grocery stores; it also allows for comparisons to national and international rates of antibiotic use.

Some grocers' 2019 data shows a small improvement over 2018: Albertson's, Kroger and Costco provided more complete antibiotic use data than previously. However, Grocery Outlet, Save Mart (Lucky), Smart and Final, Smart Food Service and Walgreens provided less data than last year. Figure 5 presents the number of grocers' products for which numeric antibiotic use information was reported, by grocer. It is noteworthy that all grocers offer organic and/or NAE products. Whole Foods is not listed in this chart because all products offered are organic and/or NAE. A list of organic and NAE brands offered by grocers is listed in Appendix B.

Figure 5. Number of raw meat and poultry products for which Grocers provided kilograms of antibiotics used



Figures 6-10 below show an analysis of whether antibiotic use data was *provided by producers* to grocers.[22] As noted previously, chicken and turkey producers provided more data than beef, pork or lamb producers, with **Foster Farms leading the way with full data provided for its chicken products and turkey products**. Only one out of 18 pork producers, Country View Family Farms, provided antibiotic quantities. No lamb producers provided kilograms of antibiotics used to produce their products. Only two beef companies provided data – Van Drie Group which produces veal and a JBS product which was imported from Australia. Notably, no American beef products were reported with antibiotic use data. For a different view of the same data in Figures 6-10, see Appendix C.

[22] Data may reflect: 1) grocers' failure to collect information, 2) producers' failure to provide information to grocers, or 3) grocer errors in submitting information to SF Environment. Prior to publication, SF Environment conducted a data review with each grocer.

Figure 6. BEEF - Percentage of producers' products for which antibiotic use data was provided

Producer	Number of Products reported	Percentage antibiotic use data provided
Van Drie Group	1	100%
JBS	7	14%
Cargill	10	0%
National Beef	6	0%
Tyson	6	0%
Birchwood	4	0%
Harris Ranch	4	0%
CS Beef	3	0%
Golden West Food Group	3	0%
Caviness	2	0%
Central Valley Meat	2	0%
Iowa Premium	2	0%
Johnsonville	2	0%
Nebraska Beef	2	0%
AFFCO	1	0%
Alliance Farmers' Produce	1	0%
Ambassador Meats	1	0%
American Custom Meats	1	0%
American Food Group	1	0%
Anzco	1	0%
Aurora	1	0%
Australian Meat Group	1	0%
Boise Valley	1	0%
Bubba	1	0%
CLW Foods	1	0%
Colorado Premium	1	0%
Connel	1	0%
EC Throsby	1	0%
G&K O'Connor	1	0%
Greater Omaha	1	0%
Greenlea	1	0%
HW Greenham & Sons	1	0%
Intermountain Beef	1	0%
Jobbers Meat Packing Co	1	0%
Midfield Group	1	0%
Monbeef Party Limited	1	0%
NH Foods Australia	1	0%
Noble Valley Meat Co.	1	0%
Oakey	1	0%
Pilot Meat & Seafood	1	0%
Sam Kane	1	0%
Secrest Watson International	1	0%
Silver Fern Farms	1	0%
Snake River	1	0%
Stanbroke	1	0%
SunFed Ranch	1	0%
T Borthwick and Sons	1	0%
Taylor Preston Limited	1	0%
Teys Australia	1	0%
Westerm Reserve	1	0%
Wilson	1	0%
Wingham	1	0%

Figure 7. CHICKEN - Percentage of producers' products for which antibiotic use data was provided

Producer	Number of Products reported	Percentage antibiotic use data provided
Foster Farms	12	100%
Agrosuper	3	100%
House of Raeford	3	67%
Pilgrims Pride	2	50%
Peco	5	40%
Sanderson Farms	5	0%
Tyson	5	0%
Coleman Natural	1	0%
Devine	1	0%
Koch Poultry	1	0%
Maple Leaf Farm	1	0%
Performance Custom Foods	1	0%
Randall Foods	1	0%
Suprema	1	0%

Comparing 2019 chicken data to 2018, several grocers no longer reported selling products by certain chicken producers — Wayne, Amick, and Perdue. In 2018, Sanderson provided data for two of four products, but did not provide any data for its products in 2019. Although Peco provided data on half its products in 2018, that dropped slightly to 40% of products in 2019.

Figure 8. TURKEY - Percentage of producers' products for which antibiotic use data was provided

Producer	Number of Products reported	Percentage antibiotic use data provided
Foster Farms	9	100%
Cargill	4	100%
Butterball	5	80%
Jennie-O	3	0%
Cooper Farms	1	0%
Petaluma Poultry	1	0%

In 2019, reporting for Butterball turkey products increased from 75% to 80% of products. Reporting for Jennie-O turkey products dropped from 20% to 0%. This year, grocers did not report any sales of turkey by Perdue.

Figure 9. PORK - Percentage of producers' products for which antibiotic use data was provided

Producer	Number of Products reported	Percentage antibiotic use data provided
Country View Family Farms	1	100%
Smithfield	10	0%
Tyson	6	0%
Hormel	3	0%
JBS	3	0%
Seaboard Foods	3	0%
JBS Swift	2	0%
Johnsonville	2	0%
Maple Leaf Farm	2	0%
New York Style Sausage	2	0%
Seaboard Triumph Foods	2	0%
Triumph Foods	2	0%
Aunt Bessies	1	0%
Cargill	1	0%
Golden West Food Group	1	0%
Premium Iowa Pork	1	0%
Sioux Preme	1	0%
Trantino	1	0%

As noted previously, Country View Family Farms was the only pork producer that provided antibiotic use data. **We applaud Country View Family Farms' transparency** and it underscores that it is possible for producers to track and provide this information to grocers.

Figure 10. LAMB - Percentage of producers' products for which antibiotic use data was provided

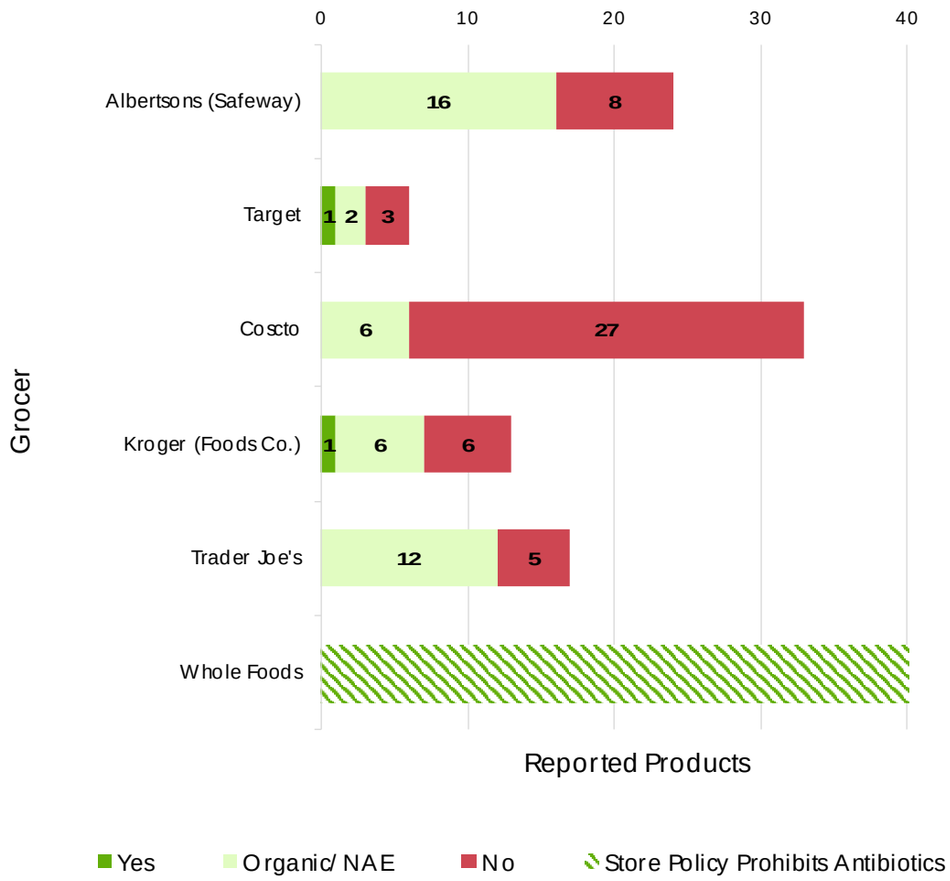
Producer	Number of Products reported	Percentage antibiotic use data provided
Thomas Foods International	3	33%
JBS	2	0%

In 2019, grocers reported fewer lamb products overall, dropping five in 2019 from 13 in 2018. However, there was a small increase in transparency with data reported for one Thomas Foods International lamb product.

2.3 Store Brand Reporting

Many grocers offer products labeled under their own store brand. These products are typically purchased based on contractual specifications and often labeled by the producer on the store's behalf. **Store brand contracts represent an important opportunity for grocers to require greater disclosure of antibiotics used in the meat and poultry supply chain.** Figure 11 below shows the number of store brand products reported by each grocer and whether antibiotic use data was submitted. Our analysis reveals that some grocers, including Grocery Outlet, Smart & Final, Smart Food Service Warehouse Stores, the Save Mart Companies (Lucky) and Walgreens, do not carry store brand products. For those that do, there has been little improvement in transparency for these products despite grocers having full control of product specifications for products under their own label. This shows a troubling lack of urgency on the part of grocers to require antibiotic use data disclosure through their purchasing contracts.

Figure 11. Number of store branded raw meat and poultry products for which grocers provided kilograms of antibiotics used.



Compared to last year, almost all grocers except Costco reported fewer store brands. In conversation, several grocers mentioned they were moving away from store branded products. Perhaps the consolidation to fewer store brand products will make it simpler for grocers to require disclosure of antibiotic use going forward. To this end, **there is much more that grocers must do to obtain this data.**

3. Differences in Sector Reporting

Similar to 2018 data, there were clear differences in the level of reporting provided for the five major species sectors of the livestock industry (e.g. beef, chicken, turkey, pork and lamb). Poultry led the market in providing kilograms of antibiotics used to produce their products. Interviews with industry experts and grocers suggested the poultry sector is ahead of other sectors for several reasons. First, a broiler chicken's life is relatively short – 45 to 60 days to slaughter. These animals are therefore more likely to spend their entire lives in one place until slaughter. This vertical integration simplifies collection and tracking of antibiotic use.

In addition, as noted previously, fast-food restaurants faced public scrutiny and advocacy campaigns regarding overuse of antibiotics in chicken production several years ago. Under pressure from their customers, chicken producers have made improvements in tracking and reduced their use of medically important antibiotics.

By contrast, a cow bred for consumption lives for about 36 months and is commonly transferred to several different locations before slaughter. Currently, locations along the supply chain may not consistently collect data on antibiotics used, much less transfer that data when moving cattle from location to location.

Given these realities, as with the 2018 reporting year, SF Environment issued another one-year waiver of full life span reporting and allowed the beef, pork and lamb sectors to limit their reporting of antibiotic use to the last location the animal resided. **Even with the difficulty of collecting and reporting data significantly reduced, grocers and producers have, for the most part, failed to provide data on antibiotic use in beef, pork and lamb.**

4. Comparing Antibiotic Use to a National Average

The Ordinance requires two sets of numeric data – kilograms of antibiotics used and the number of animals raised – so as to calculate a producer's average antibiotic use per kilogram of livestock.[23] This producer average then can be compared to a national average of antibiotic use per kilogram of livestock.[24]

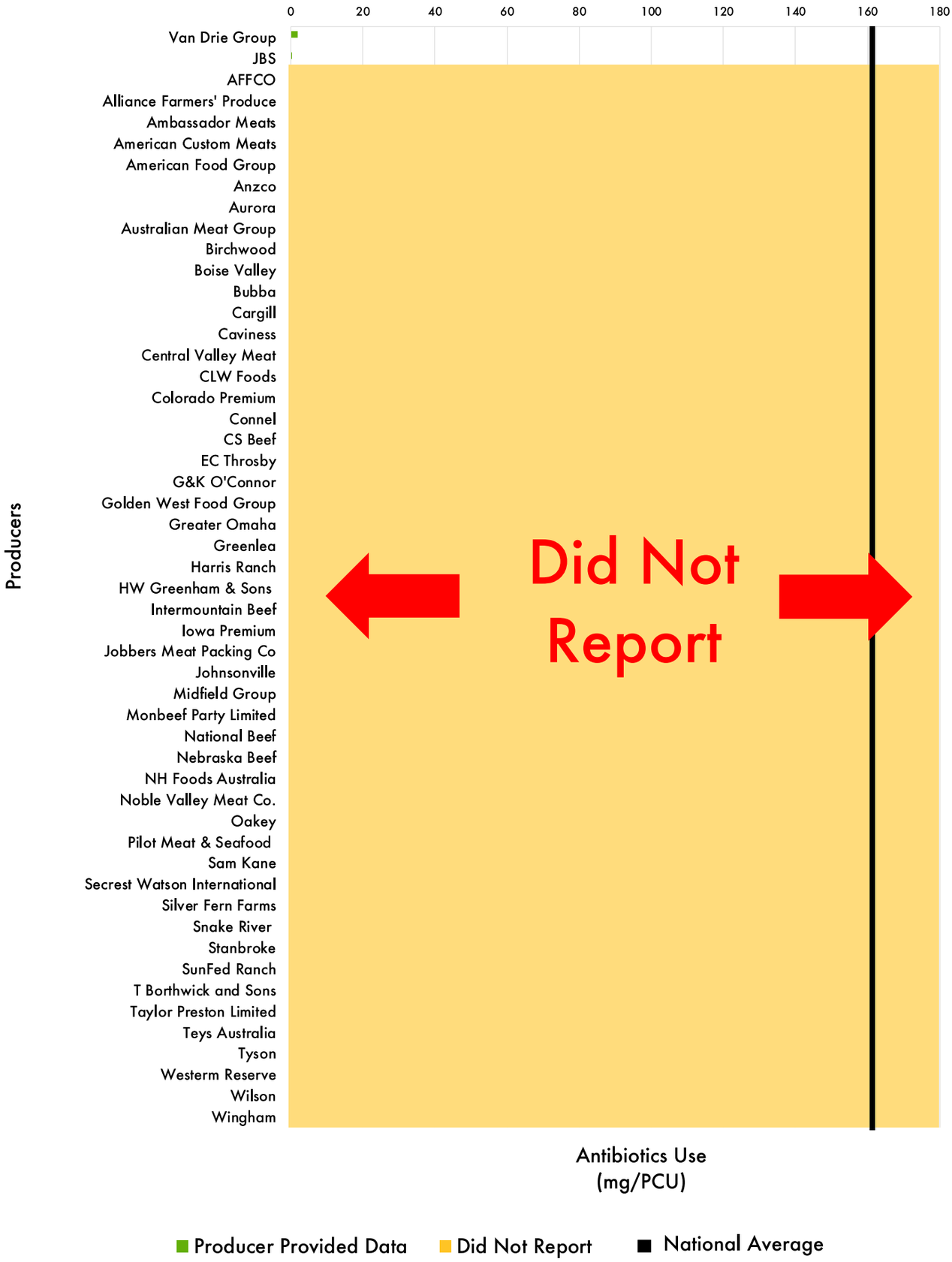
Although little data was reported for kilograms of antibiotics used, we were able to calculate some producer averages and compare those to the national average, as depicted in Figures 12-16 below for beef, chicken, turkey, pork and lamb. Those producers that provided antibiotic use data generally had a calculated average that was either close to or below the national average.

[23] Calculation is modeled after the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC). The units of measurement are "mg/PCU" or milligrams per Population Correction Unit. PCU is an average weight of the animal at the time it is most likely to be treated with antibiotics. More information on ESVAC and species by species calculations are available at https://www.ema.europa.eu/en/veterinary-regulatory/overview/antimicrobial-resistance/european-surveillance-veterinary-antimicrobial-consumption-esvac (last accessed 9/11/20).

[24] Natural Resources Defense Council's December 2019 report, "Intensity of Antibiotic Consumption in U.S. Livestock: 2019 Update," provides national averages of antibiotic use per kilogram of livestock. The report and methods are available at https://www.nrdc.org/sites/default/files/media-uploads/attachment_to_blog_v2_0.pdf (last accessed 9/11/20).

It is important to note that for many of the graphs below, SF Environment did not receive complete numeric data for every product. Therefore, the calculated averages do not provide a complete picture of antibiotic use but rather provide some insight into possible general trends of current antibiotic use for at least the producers willing to provide data.

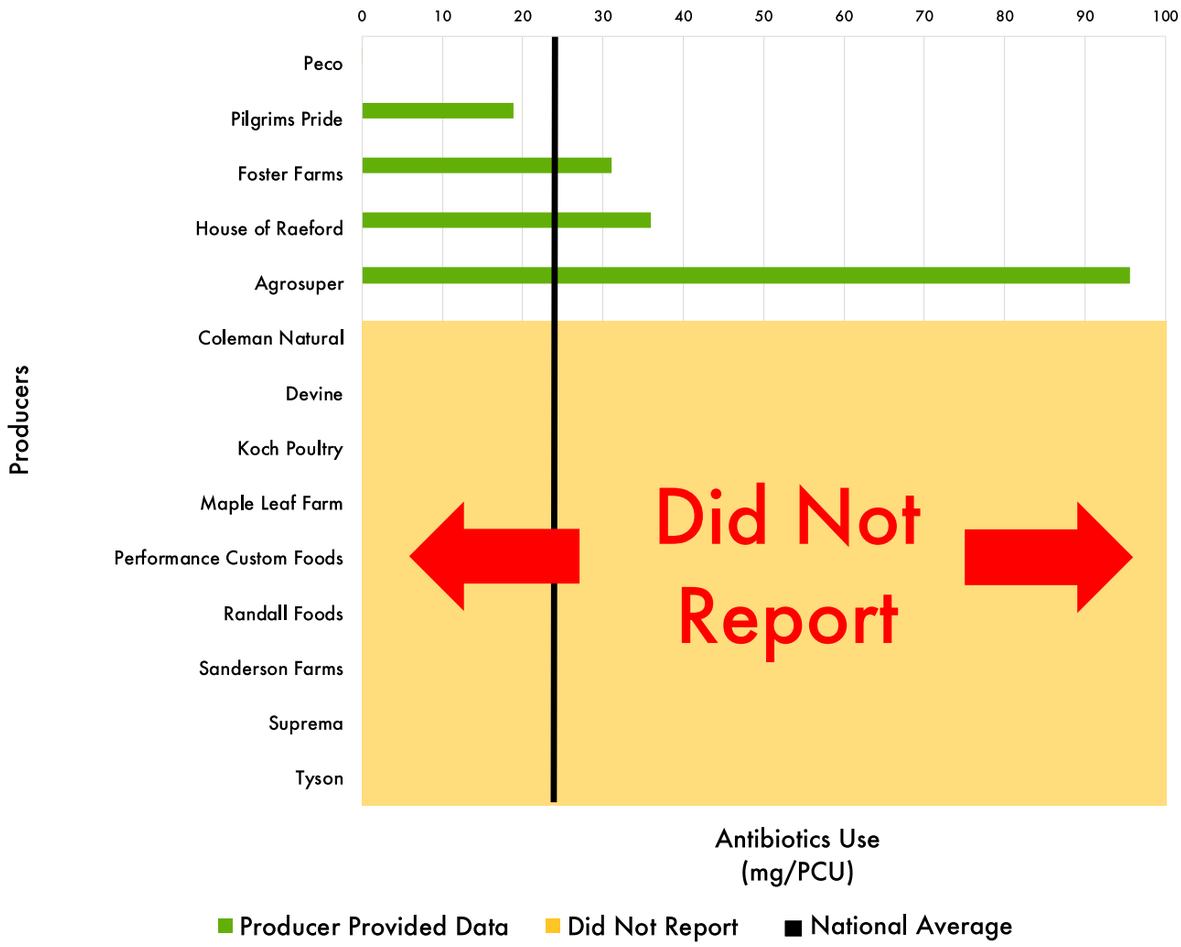
Figure 12. BEEF - Producer antibiotic use as compared to national average[25]



As Figure 12 shows, veal producer Van Drie Group and beef packer JBS both disclosed antibiotic use data. The data for JBS only represents one of seven JBS products – a single product from Australia.[26] Calculated averages for both Van Drie Group and the Australian JBS product were well below the US national average. It is disturbing that JBS, Cargill, National Beef and Tyson control 80% of the US beef packing market yet continue to show no leadership regarding transparency and disclosure. It begs the question, what do they have to hide?

[25] JBS average is based on the 14% of product data it provided.
[26] Like the US, the Australian government requires tracking and reporting of antibiotic sales, not use.

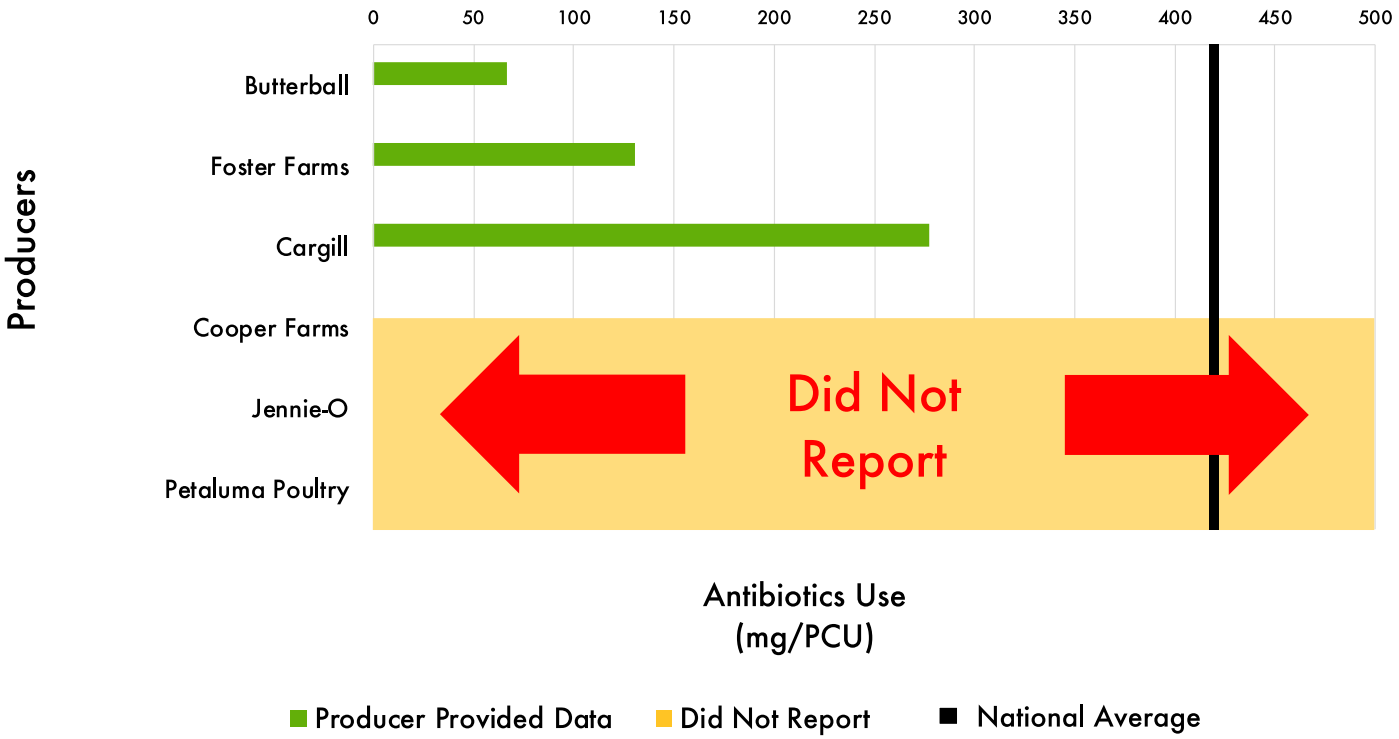
Figure 13. CHICKEN – Producer antibiotic use as compared to national average[27]



Chicken producers that provided data in both 2018 and 2019 did not see significant differences. Although Agrosuper's use of antibiotics is higher than the national average for chicken, it is notable that the national average for chicken is far lower than for any other species.

[27] House of Raeford average is based on the 67% of product data it provided.
Pilgrims Pride average is based on the 50% of product data it provided.
Peco average is based on the 40% of product data it provided.

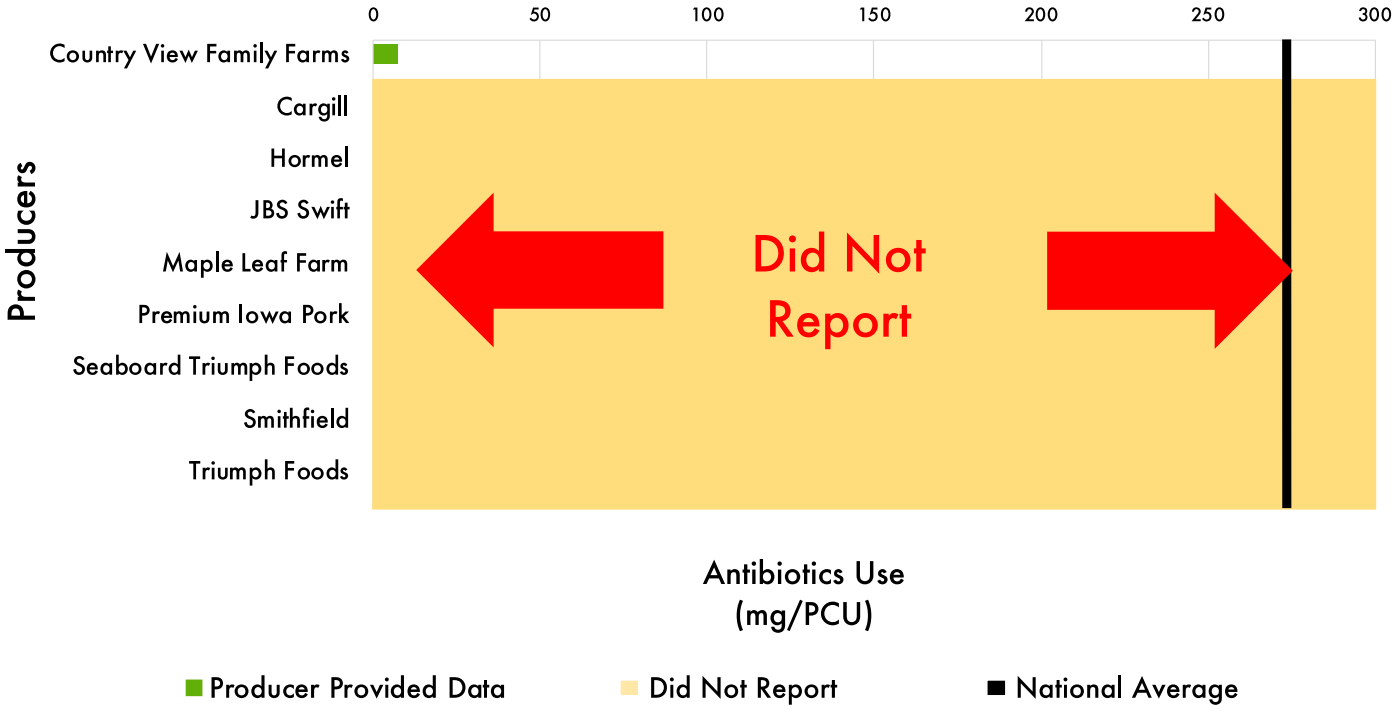
Figure 14. TURKEY – Producer antibiotic use as compared to national average[28]



Turkey producers that were transparent regarding antibiotics use used less antibiotics when compared to the national average. Cargill's use dropped significantly from more than the national average in 2018, to far below it in 2019. That said, average antibiotic use in turkey is consistently higher when compared to use in chicken.

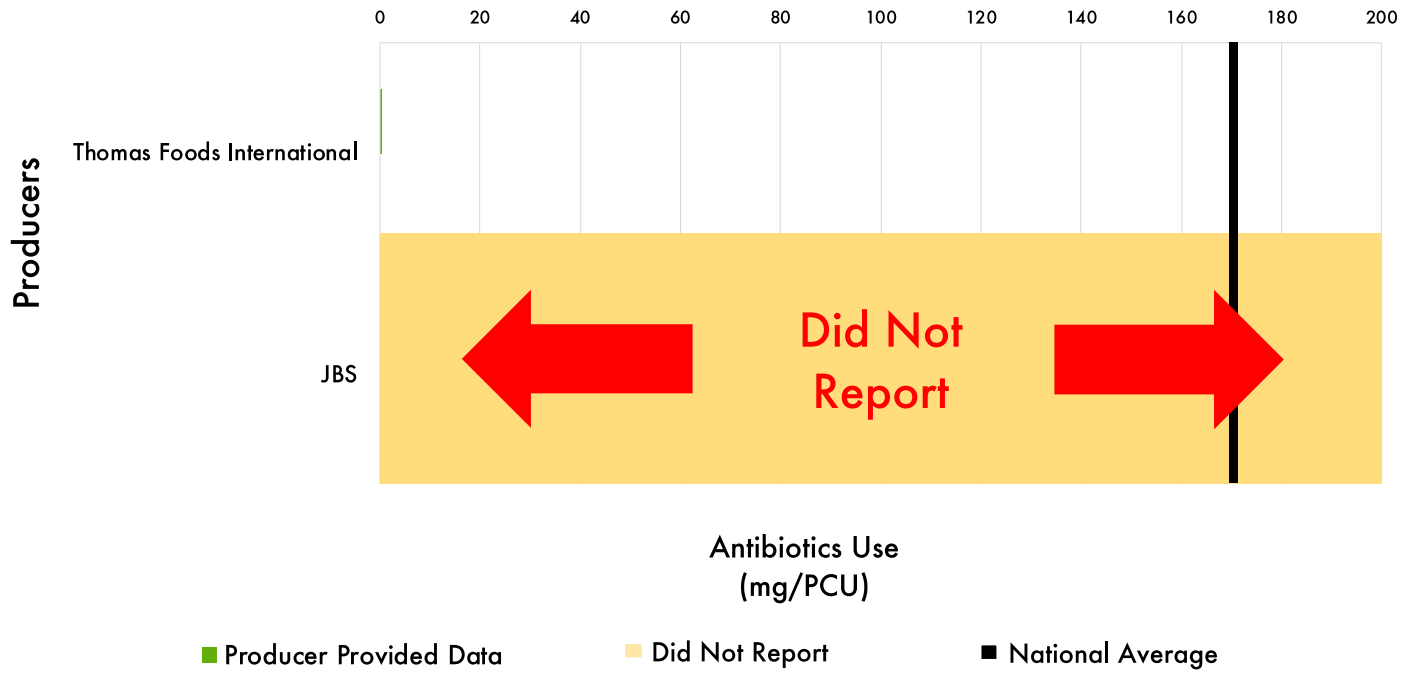
[28] Butterball average is based on the 80% of product data it provided.

Figure 15. PORK – Producer antibiotic use as compared to national average



Despite growing vertical integration among pork producers, only a single producer provided antibiotic use data. Smithfield, Triumph and Tyson together represent approximately 70% of the pork market, yet failed to provide any transparency about their antibiotic use.

Figure 16. LAMB – Producer antibiotic use as compared to national average[29,30]



Thomas Foods International provided antibiotic use data for one of three of its lamb products. Antibiotic use was very low as compared to the national average. Once again, JBS did not provide any data.

[29] FDA does not provide information for sales of antibiotics used in sheep. Therefore, we use an average of all species as a proxy for lamb. National average data from Natural Resources Defense Council's December 2019 report, "Intensity of Antibiotic Consumption in U.S. Livestock: 2019 Update," provides national averages of antibiotic use per kilogram of livestock. The report and methods are available at https://www.nrdc.org/sites/default/files/media-uploads/attachment_to_blog_v2_0.pdf (last accessed 9/2/20).

[30] Thomas Foods International average is based on the 33% of product data it provided.

5. Conclusions & Next Steps

For the 2019 reporting year, San Francisco's chain grocers made some progress in complying with the Ordinance; antibiotic use policy information went from spotty and poorly understood in the last report, to 100% complete (with the exception of Walgreen's, which did not submit a report despite several reminders by SF Environment).

That said, **San Francisco grocers need to redouble their efforts to obtain information for all meat and poultry they sell to fully comply with the Ordinance**. **It is only with complete information that San Francisco consumers can make informed purchasing decisions.** Experience from grocers in Great Britain demonstrates what is possible: in response to requests similar to those required under the Ordinance, nine of ten British grocers rapidly developed antibiotic use policies.[31] Likewise, we hope chain grocers with a presence in San Francisco will push their raw meat and poultry suppliers to begin the important work of tracking and disclosing their antibiotic use, creating policies that restrict that use to the treatment of diseased animals, and ultimately reduce overall use of medically important antibiotics.

If more jurisdictions pass ordinances like San Francisco's, growing public awareness and consumer demand for transparency could drive grocers and meat and poultry producers to better track antibiotic use, and ultimately toward improvements in antibiotic use practices. In addition, multiple jurisdictions with similar reporting requirements could combine funding sources to create a multi-jurisdictional reporting platform that would ease grocers' reporting burden and improve consistency in data collected.

We look forward to working with grocers and producers in the coming reporting cycles to improve data quality and quantity, provide important information for consumer choice, and ultimately keep medically important antibiotics working. Consumers have the right to know how much, when and why antibiotics are used so they may make informed choices. **The current lack of transparency undermines consumers' right to express their values through their purchasing decisions.**

[31] See Appendix 3 of Save Our Antibiotics' "Supermarket Antibiotics Policies 2020 Assessment Report. Available at http://www.saveourantibiotics.org/media/1826/supermarket-antibiotics-policies-assessment-2020-report.pdf (accessed 9/1/20).

Appendix A – Producers with policies prohibiting certain uses of antibiotics

Did the policies for this Product Group prohibit medically important antibiotics for growth promotion?	Yes	No
Agrosuper	100%	0%
American Custom Meats	100%	0%
Boise Valley	100%	0%
Caviness	100%	0%
Coleman Natural	100%	0%
Connel	100%	0%
Cooper Farms	100%	0%
Country View Family Farms	100%	0%
Foster Farms	100%	0%
Golden West Food Group	100%	0%
Hormel	100%	0%
Intermountain Beef	100%	0%
JBS Swift	100%	0%
Koch Poultry	100%	0%
Peco	100%	0%
Performance Custom Foods	100%	0%
Petaluma Poultry	100%	0%
Premium Iowa Pork	100%	0%
Randall Foods	100%	0%
Sanderson Farms	100%	0%
Seaboard Triumph Foods	100%	0%
Sioux Preme	100%	0%
Snake River	100%	0%
SunFed Ranch	100%	0%
Suprema	100%	0%
Teys Australia	100%	0%
Triumph Foods	100%	0%
Wilson	100%	0%
Butterball	80%	20%
Cargill	67%	33%
House of Raeford	67%	33%
Maple Leaf Farm	67%	33%
Seaboard Foods	67%	33%
Smithfield	60%	40%
Tyson	59%	41%
JBS	50%	50%
New York Style Sausage	50%	50%
Pilgrims Pride	50%	50%
Jennie-O	33%	67%
Thomas Foods International	33%	67%
Harris Ranch	25%	75%
National Beef	17%	83%
AFFCO	0%	100%
Alliance Farmers' Produce	0%	100%
Ambassador Meats	0%	100%
American Food Group	0%	100%
Anzco	0%	100%
Aunt Bessies	0%	100%
Aurora	0%	100%
Australian Meat Group	0%	100%
Birchwood	0%	100%
Bubba	0%	100%
Central Valley Meat	0%	100%
CLW Foods	0%	100%
Colorado Premium	0%	100%
CS Beef	0%	100%
Devine	0%	100%
EC Throsby	0%	100%
G&K O'Connor	0%	100%
Greater Omaha	0%	100%
Greenlea	0%	100%
HW Greenham & Sons	0%	100%
Iowa Premium	0%	100%
Jobbers Meat Packing Co	0%	100%
Johnsonville	0%	100%
Midfield Group	0%	100%
Monbeef Party Limited	0%	100%
Nebraska Beef	0%	100%
NH Foods Australia	0%	100%
Noble Valley Meat Co.	0%	100%
Oakey	0%	100%
Pilot Meat & Seafood	0%	100%
Sam Kane	0%	100%
Secrest Watson International	0%	100%
Silver Fern Farms	0%	100%
Stanbroke	0%	100%
T Borthwick and Sons	0%	100%
Taylor Preston Limited	0%	100%
Trantino	0%	100%
Van Drie Group	0%	100%
Westerm Reserve	0%	100%
Wingham	0%	100%

Did the policies for this Product Group prohibit medically important antibiotics for disease prevention?	Yes	No
Agrosuper	100%	0%
Peco	100%	0%
SunFed Ranch	100%	0%
Teys Australia	100%	0%
Sanderson Farms	80%	20%
House of Raeford	67%	33%
Tyson	29%	71%
Harris Ranch	25%	75%
AFFCO	0%	100%
Alliance Farmers' Produce	0%	100%
Ambassador Meats	0%	100%
American Custom Meats	0%	100%
American Food Group	0%	100%
Anzco	0%	100%
Aunt Bessies	0%	100%
Aurora	0%	100%
Australian Meat Group	0%	100%
Birchwood	0%	100%
Boise Valley	0%	100%
Bubba	0%	100%
Butterball	0%	100%
Cargill	0%	100%
Caviness	0%	100%
Central Valley Meat	0%	100%
CLW Foods	0%	100%
Coleman Natural	0%	100%
Colorado Premium	0%	100%
Connel	0%	100%
Cooper Farms	0%	100%
Country View Family Farms	0%	100%
CS Beef	0%	100%
Devine	0%	100%
EC Throsby	0%	100%
Foster Farms	0%	100%
G&K O'Connor	0%	100%
Golden West Food Group	0%	100%
Greater Omaha	0%	100%
Greenlea	0%	100%
Hormel	0%	100%
HW Greenham & Sons	0%	100%
Intermountain Beef	0%	100%
Iowa Premium	0%	100%
JBS	0%	100%
JBS Swift	0%	100%
Jennie-O	0%	100%
Jobbers Meat Packing Co	0%	100%
Johnsonville	0%	100%
Koch Poultry	0%	100%
Maple Leaf Farm	0%	100%
Midfield Group	0%	100%
Monbeef Party Limited	0%	100%
National Beef	0%	100%
Nebraska Beef	0%	100%
New York Style Sausage	0%	100%
NH Foods Australia	0%	100%
Noble Valley Meat Co.	0%	100%
Oakey	0%	100%
Performance Custom Foods	0%	100%
Petaluma Poultry	0%	100%
Pilgrims Pride	0%	100%
Pilot Meat & Seafood	0%	100%
Premium Iowa Pork	0%	100%
Randall Foods	0%	100%
Sam Kane	0%	100%
Seaboard Foods	0%	100%
Seaboard Triumph Foods	0%	100%
Secrest Watson International	0%	100%
Silver Fern Farms	0%	100%
Sioux Preme	0%	100%
Smithfield	0%	100%
Snake River	0%	100%
Stanbroke	0%	100%
Suprema	0%	100%
T Borthwick and Sons	0%	100%
Taylor Preston Limited	0%	100%
Thomas Foods International	0%	100%
Trantino	0%	100%
Triumph Foods	0%	100%
Van Drie Group	0%	100%
Westerm Reserve	0%	100%
Wilson	0%	100%
Wingham	0%	100%

Did the policies for this Product Group allow medically important antibiotics for disease control?	No	Yes
Peco	100%	0%
SunFed Ranch	100%	0%
Teys Australia	100%	0%
CS Beef	33%	67%
Jennie-O	33%	67%
Thomas Foods International	33%	67%
Tyson	29%	71%
Harris Ranch	25%	75%
Sanderson Farms	20%	80%
AFFCO	0%	100%
Agrosuper	0%	100%
Alliance Farmers' Produce	0%	100%
Ambassador Meats	0%	100%
American Custom Meats	0%	100%
American Food Group	0%	100%
Anzco	0%	100%
Aunt Bessies	0%	100%
Aurora	0%	100%
Australian Meat Group	0%	100%
Birchwood	0%	100%
Boise Valley	0%	100%
Bubba	0%	100%
Butterball	0%	100%
Cargill	0%	100%
Caviness	0%	100%
Central Valley Meat	0%	100%
CLW Foods	0%	100%
Coleman Natural	0%	100%
Colorado Premium	0%	100%
Connel	0%	100%
Cooper Farms	0%	100%
Country View Family Farms	0%	100%
Devine	0%	100%
EC Throsby	0%	100%
Foster Farms	0%	100%
G&K O'Connor	0%	100%
Golden West Food Group	0%	100%
Greater Omaha	0%	100%
Greenlea	0%	100%
Hormel	0%	100%
House of Raeford	0%	100%
HW Greenham & Sons	0%	100%
Intermountain Beef	0%	100%
Iowa Premium	0%	100%
JBS	0%	100%
JBS Swift	0%	100%
Jobbers Meat Packing Co	0%	100%
Johnsonville	0%	100%
Koch Poultry	0%	100%
Maple Leaf Farm	0%	100%
Midfield Group	0%	100%
Monbeef Party Limited	0%	100%
National Beef	0%	100%
Nebraska Beef	0%	100%
New York Style Sausage	0%	100%
NH Foods Australia	0%	100%
Noble Valley Meat Co.	0%	100%
Oakey	0%	100%
Performance Custom Foods	0%	100%
Petaluma Poultry	0%	100%
Pilgrims Pride	0%	100%
Pilot Meat & Seafood	0%	100%
Premium Iowa Pork	0%	100%
Randall Foods	0%	100%
Sam Kane	0%	100%
Seaboard Foods	0%	100%
Seaboard Triumph Foods	0%	100%
Secrest Watson International	0%	100%
Silver Fern Farms	0%	100%
Sioux Preme	0%	100%
Smithfield	0%	100%
Snake River	0%	100%
Stanbroke	0%	100%
Suprema	0%	100%
T Borthwick and Sons	0%	100%
Taylor Preston Limited	0%	100%
Trantino	0%	100%
Triumph Foods	0%	100%
Van Drie Group	0%	100%
Westerm Reserve	0%	100%
Wilson	0%	100%
Wingham	0%	100%

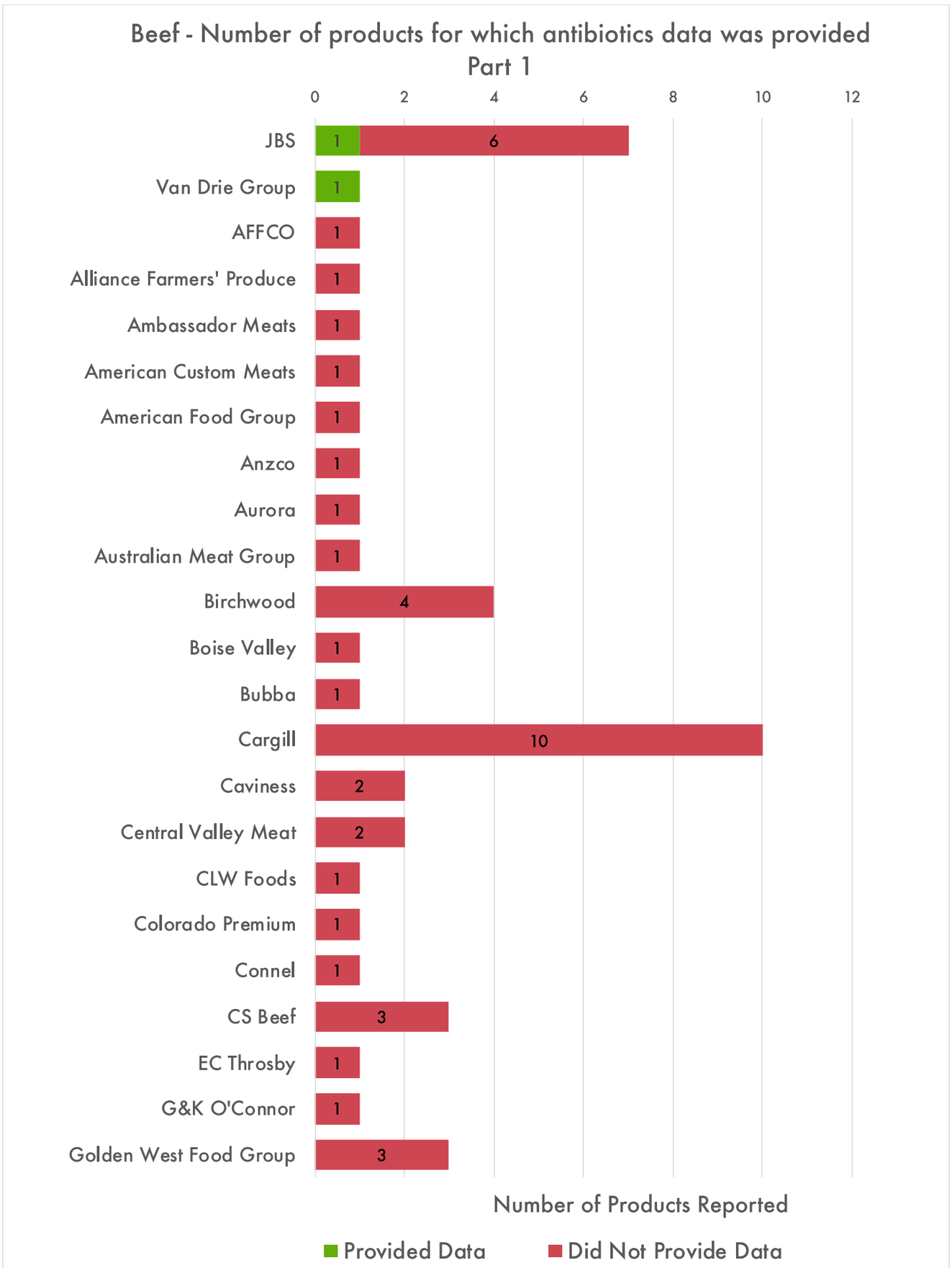
Appendix B – Brands reported to offer some organic and/or NAE products

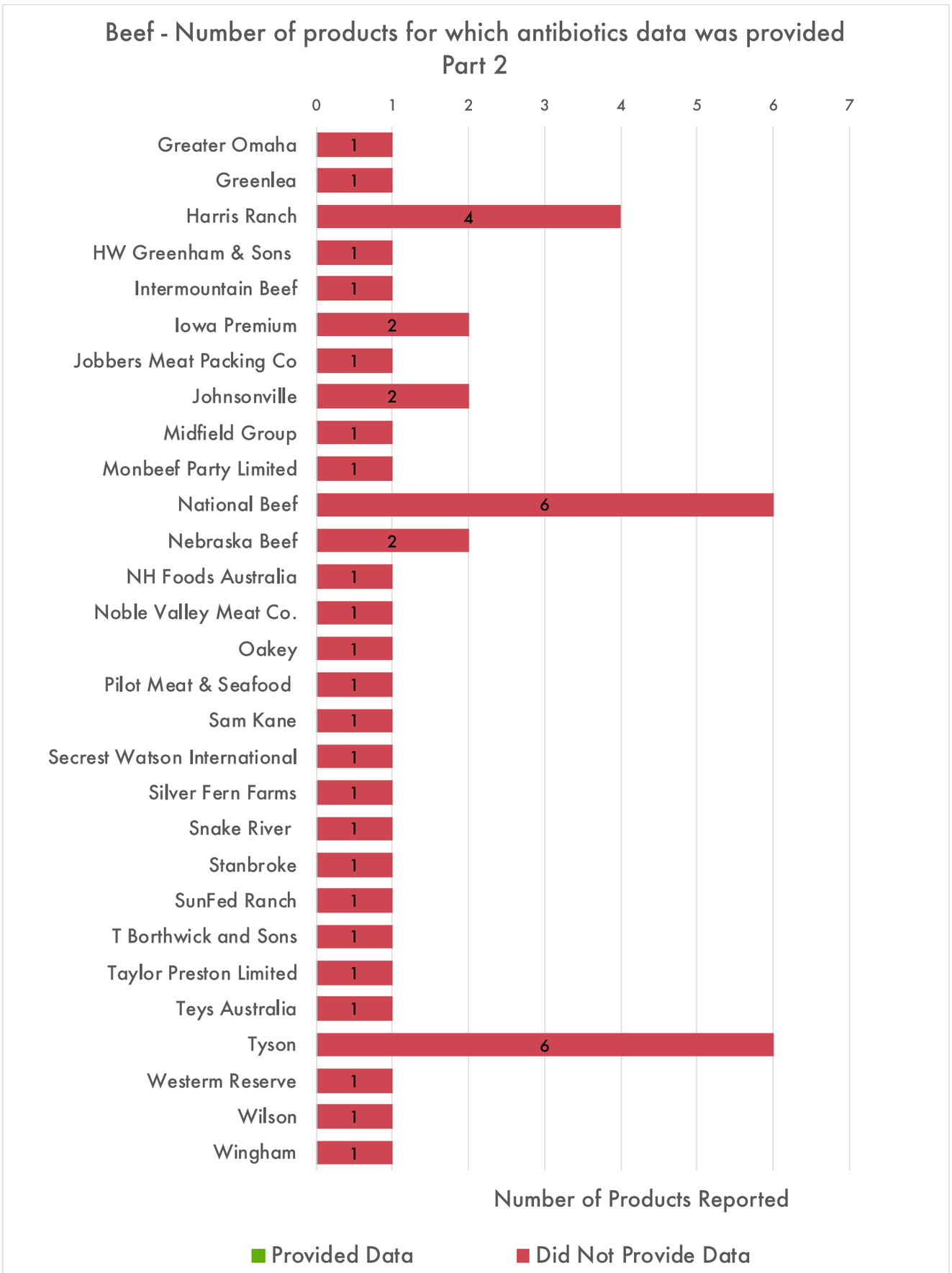
Beef
Diamond Valley
JBS
Kirkland Signature
Kroger
Lamb Co
Laura's Lean Beef
Meyer Natural
O Organics
Open Nature
Respect
Signature Select
Simply Balanced
Spring Crossing
SunFed Ranch
Teva Kosher
The Organic Meat Company
Trader Joe's
Western Pride
Chicken
Ancher Farms
Empire Kosher
Foster Farms
Just Bare
Kirkland Signature
Kroger
O Organics
Open Nature
Perdue
Plated
Simply Balanced
Sun Harvest
Tarantino
Trader Joe's
Tyson
Pork
JBS
Meyer Natural
Trader Joe's
Sheep
Atkins Ranch
Lamb Co
Opal Valley
Open Nature
Spring Crossing
Thomas Farms
Turkey
Diestel Family Ranch
Empire Kosher
Foster Farms
Jennie-O
Kroger
Norbest
O Organics
Open Nature

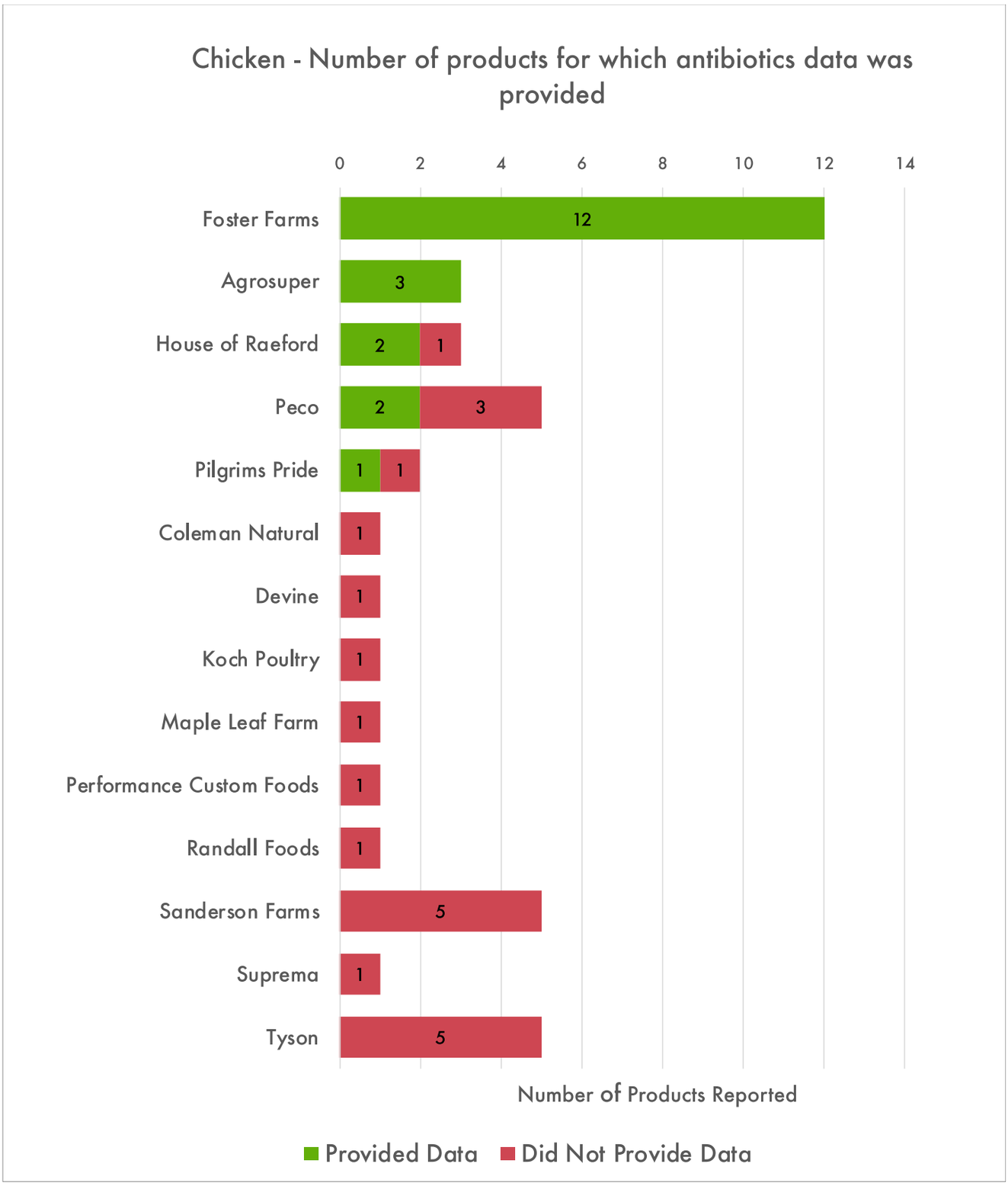
Plated
Respect
Trader Joe's

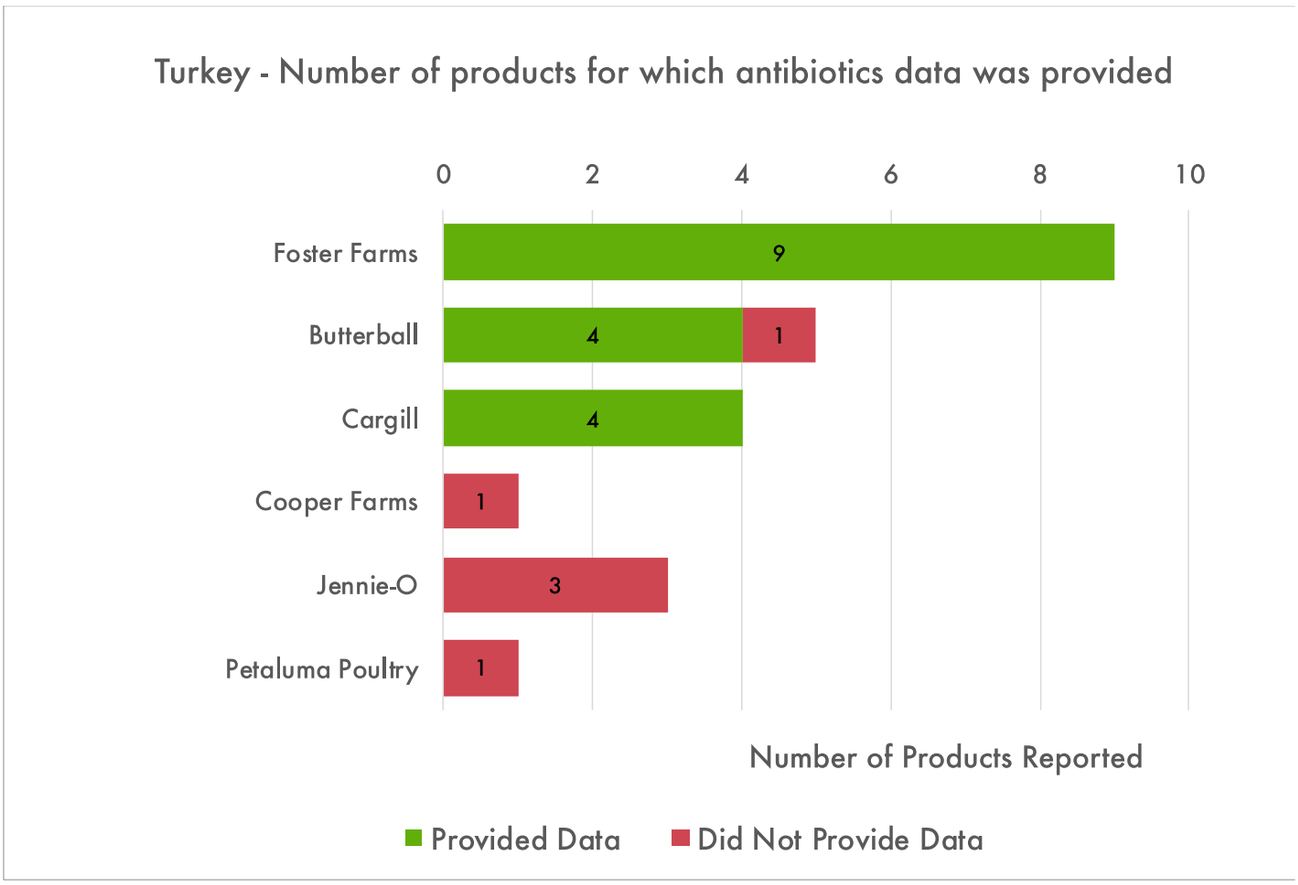
Appendix C – Which producers provided antibiotic use data?

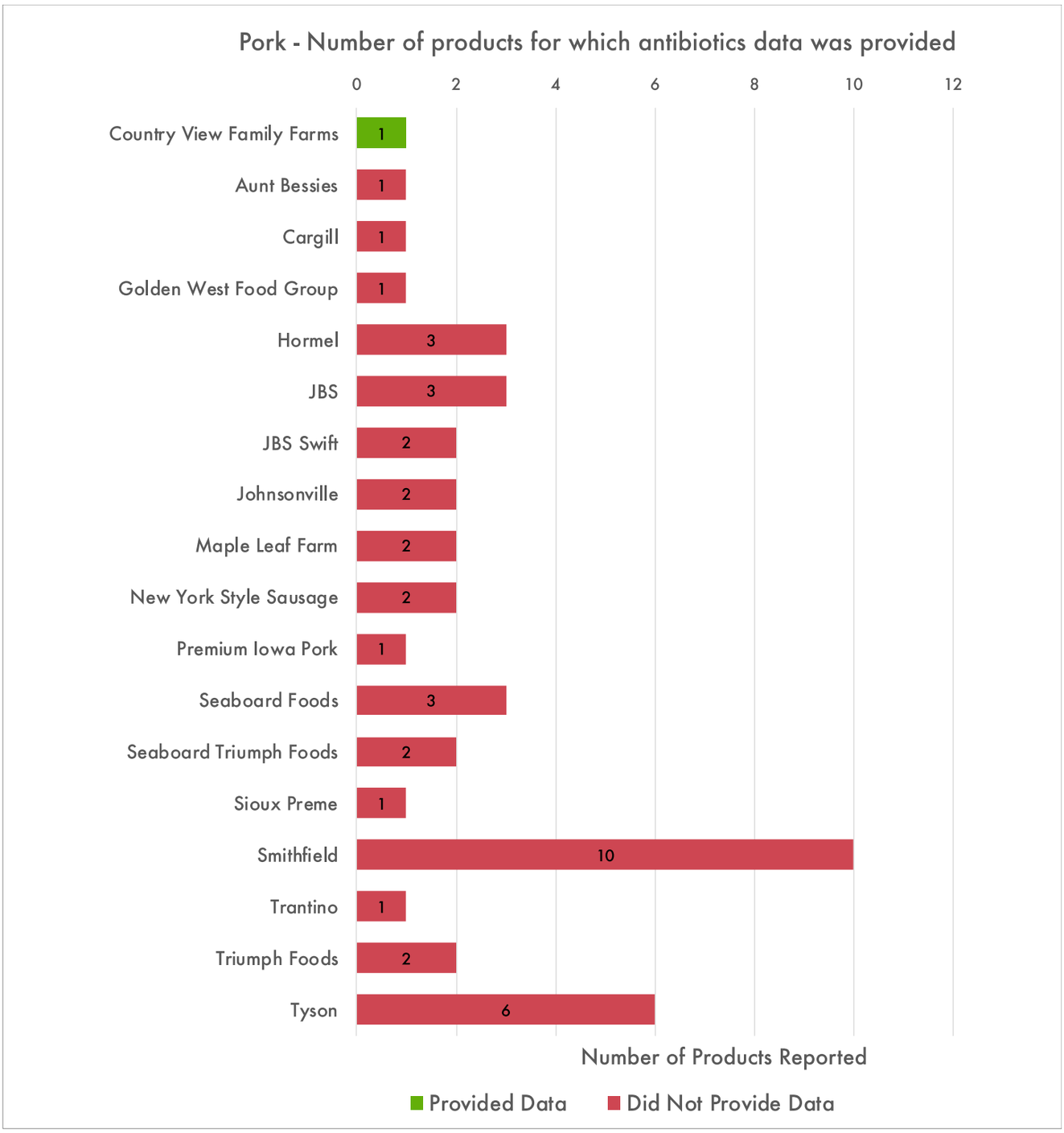
Charts in Appendix C are a different view on the same data reported in Figures 6-10, that is whether producers provided antibiotic use data.

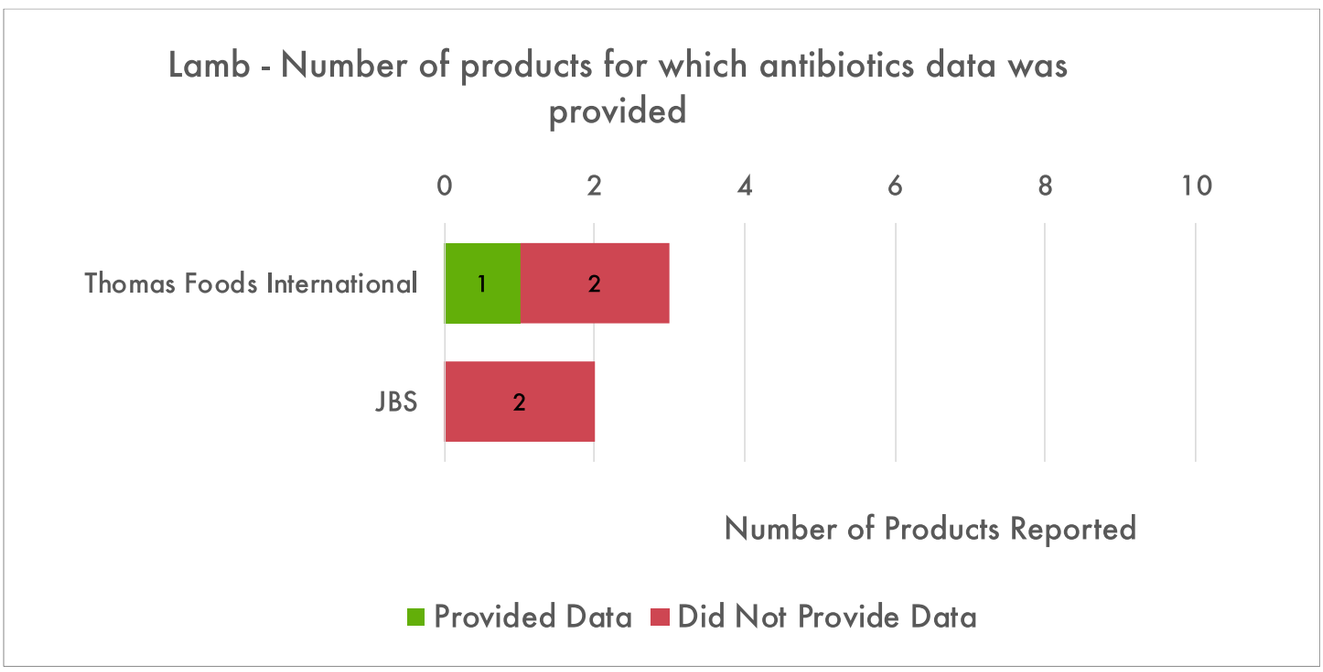



Beef - Number of products for which antibiotics data was provided
Part 2
0
1
2
3
4
5
6
7
Greater Omaha
Greenlea
Harris Ranch
HW Greenham & Sons
Intermountain Beef
Iowa Premium
Jobbers Meat Packing Co
Johnsonville
Midfield Group
Monbeef Party Limited
National Beef
Nebraska Beef
NH Foods Australia
Noble Valley Meat Co.
Oakey
Pilot Meat & Seafood
Sam Kane
Secrest Watson International
Silver Fern Farms
Snake River
Stanbroke
SunFed Ranch
T Borthwick and Sons
Taylor Preston Limited
Teys Australia
Tyson
Westerm Reserve
Wilson
Wingham
1
1
4
1
1
2
1
2
1
1
6
2
1
1
1
1
1
1
1
1
1
1
1
1
6
1
1
1
Number of Products Reported
Provided Data
Did Not Provide Data


Chicken - Number of products for which antibiotics data was provided
0
2
4
6
8
10
12
14
Foster Farms
12
Agrosuper
3
House of Raeford
2
1
Peco
2
3
Pilgrims Pride
1
1
Coleman Natural
1
Devine
1
Koch Poultry
1
Maple Leaf Farm
1
Performance Custom Foods
1
Randall Foods
1
Sanderson Farms
5
Suprema
1
Tyson
5
Number of Products Reported
Provided Data
Did Not Provide Data


Turkey - Number of products for which antibiotics data was provided
0
2
4
6
8
10
Foster Farms
9
Butterball
4
1
Cargill
4
Cooper Farms
1
Jennie-O
3
Petaluma Poultry
1
Number of Products Reported
Provided Data
Did Not Provide Data


Pork - Number of products for which antibiotics data was provided
0
2
4
6
8
10
12
Country View Family Farms
1
Aunt Bessies
1
Cargill
1
Golden West Food Group
1
Hormel
3
JBS
3
JBS Swift
2
Johnsonville
2
Maple Leaf Farm
2
New York Style Sausage
2
Premium Iowa Pork
1
Seaboard Foods
3
Seaboard Triumph Foods
2
Sioux Preme
1
Smithfield
10
Trantino
1
Triumph Foods
2
Tyson
6
Number of Products Reported
Provided Data
Did Not Provide Data


Lamb - Number of products for which antibiotics data was provided
0
2
4
6
8
10
Thomas Foods International
1
2
JBS
2
Number of Products Reported
Provided Data
Did Not Provide Data