

CgFARAD™ Year in Review

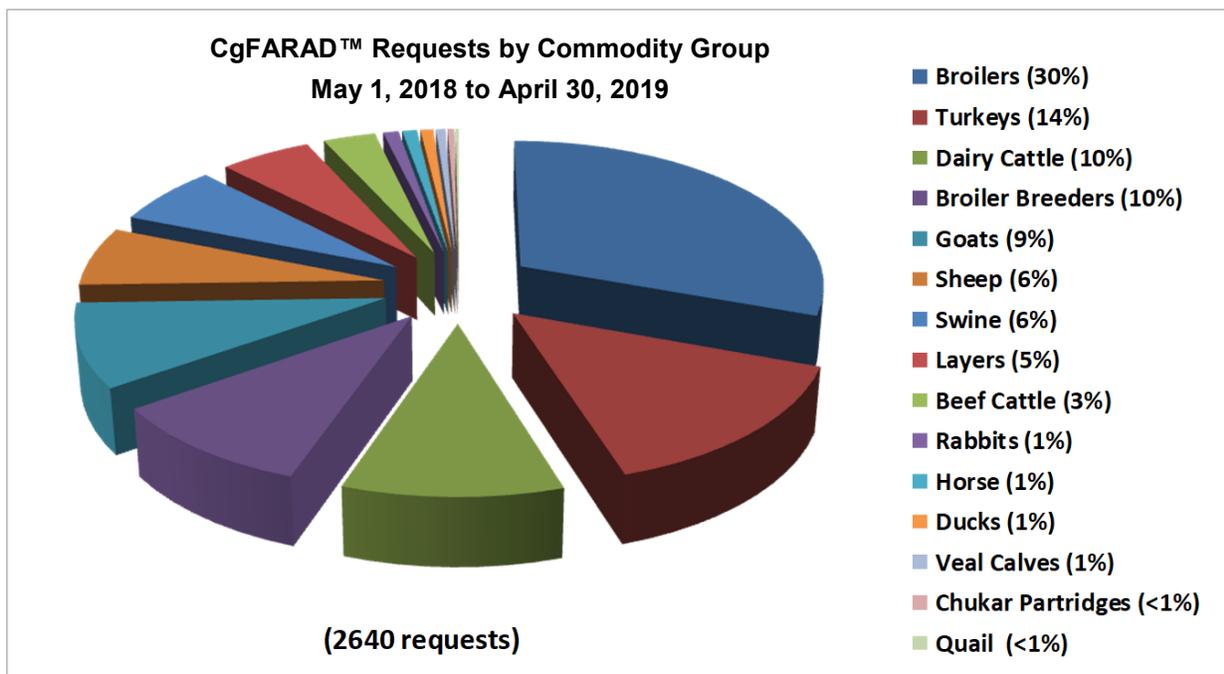
CgFARAD™ provides veterinarians with unbiased expertise on the withdrawal interval required before animals or animal products can enter the food chain both from a food safety and a residue detection perspective. A CgFARAD™ recommendation must be obtained when drugs are used extra-label for all processed poultry and eggs. All other CgFARAD™ requests are submitted on a voluntary basis by veterinarians on behalf of their producer clients or feed companies.

CgFARAD™ responded to 2,640 withdrawal requests in 2018-2019 up from 2,404 in 2017-2018.

CgFARAD™ personnel also assist:

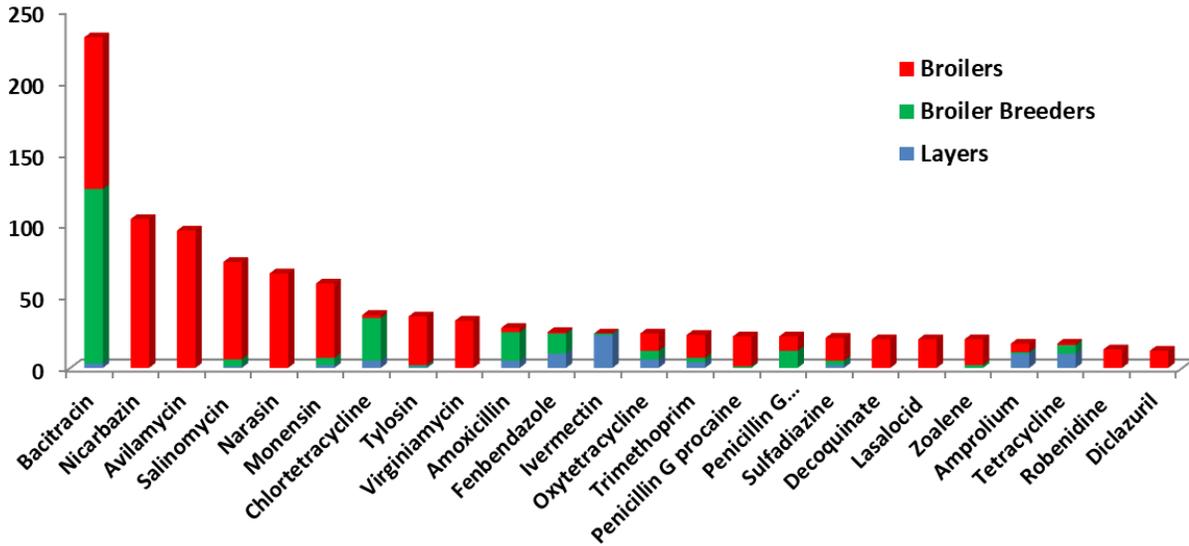
- veterinarians in determining safe withdrawal intervals when animals are accidentally exposed to pesticides, heavy metals or other chemicals;
- feed mills and processors when accidental contamination of feeds occur; and,
- regulatory agencies seeking clinical pharmacological expertise regarding drug residues.

In our spring newsletter each year, we provide graphs illustrating requests by pharmaceutical product and by disease for each commodity group. Several graphs depicting this summary data by species are shown on the following pages. This is valuable information as it illustrates the health challenges with which veterinarians are dealing and highlights where there may be limited registered label options. The CgFARAD™ pharmacologists also use this knowledge to identify where drug residue research and depletion studies are needed.



In all types of chickens, coccidiosis and necrotic enteritis continue to be the predominant diseases that require extra-label drug use (ELDU). The recent changes in federal regulations removing all growth promotion claims for antimicrobials has impacted use of a number of antimicrobials especially in the treatment of layers with chlortetracycline, oxytetracycline and bacitracin.

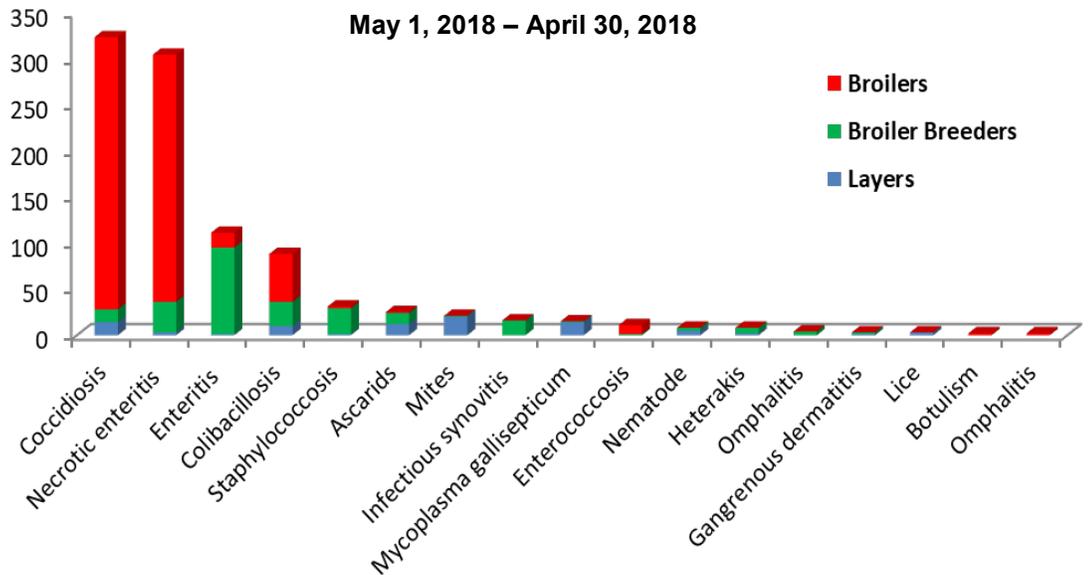
ELDU Requests for Chickens by Product
May 1, 2018 – April 30, 2019



Colibacillosis and enteritis tend to occur in outbreak situations with high morbidity and mortality and antimicrobial resistance limits treatment choices in some cases.

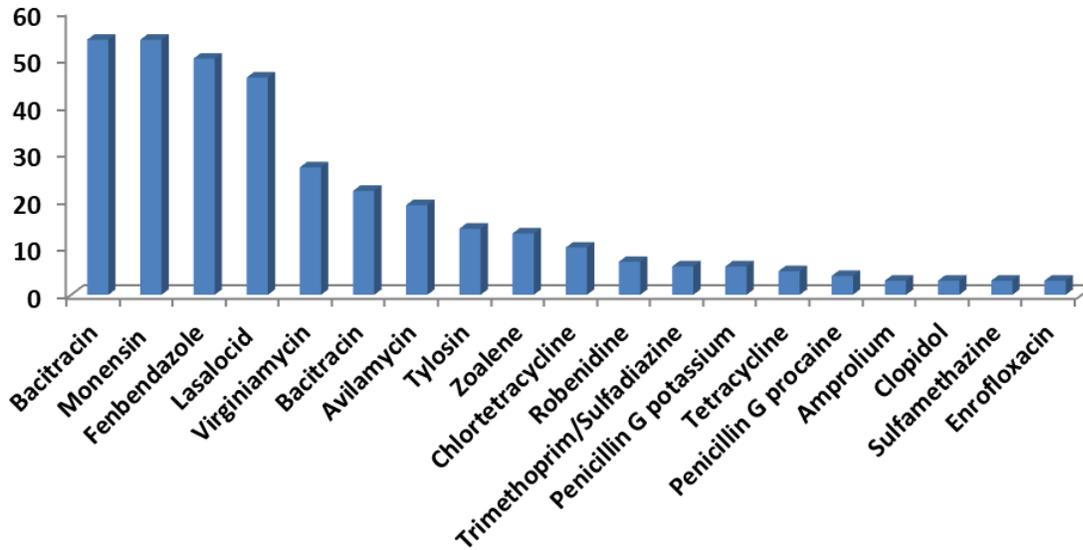
Mites and lice are problematic both in commercial birds and backyard flocks, as pesticides cannot be used in an extra-label manner and carbaryl (Dusting Powder™) has been removed from the market. The CgFARAD™ has seen a significant increase in requests for treatment of backyard layers for these parasites and we still have limited residue depletion data for ELDU treatments.

Diseases Requiring ELDU in Chickens
May 1, 2018 – April 30, 2018

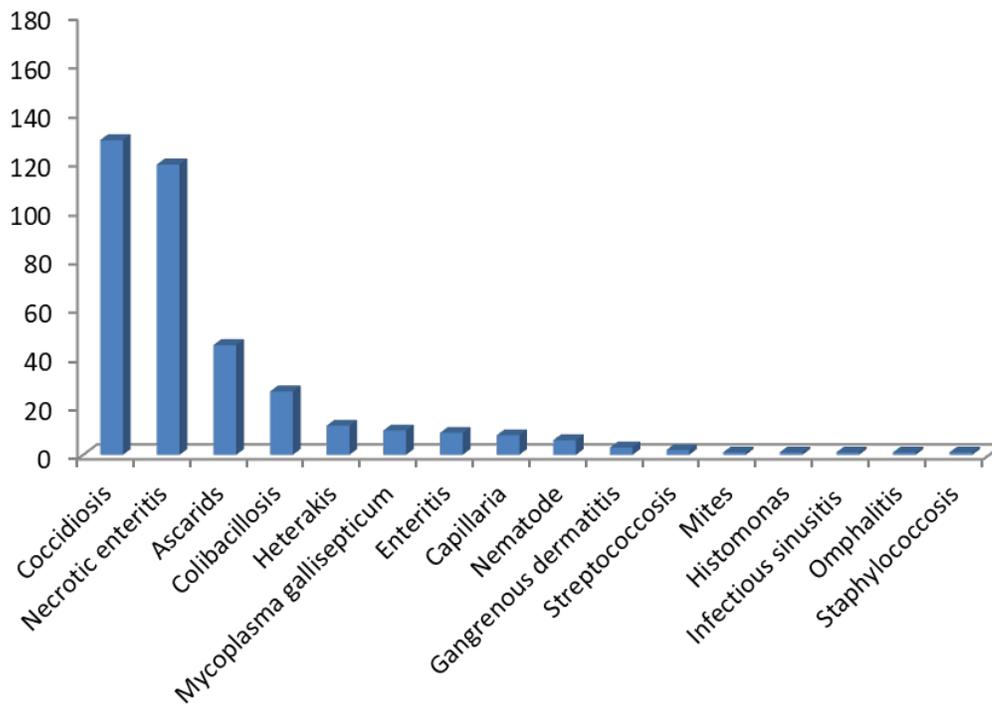


As with chickens, control of coccidiosis and necrotic enteritis are the predominant reasons for ELDU in turkeys. The next most significant concern is the control of roundworms with fenbendazole. Based on a CgFARAD™ research study (Enouri, S. S., et al. (2019). "Tissue residue depletion of fenbendazole after oral administration in turkeys." *Can Vet J* 60(3): 282-286), a prolonged withdrawal interval is now recommended and it impacts turkey production due to time limitations.

ELDU Requests for Turkeys by Product
May 1, 2018 – April 30, 2018

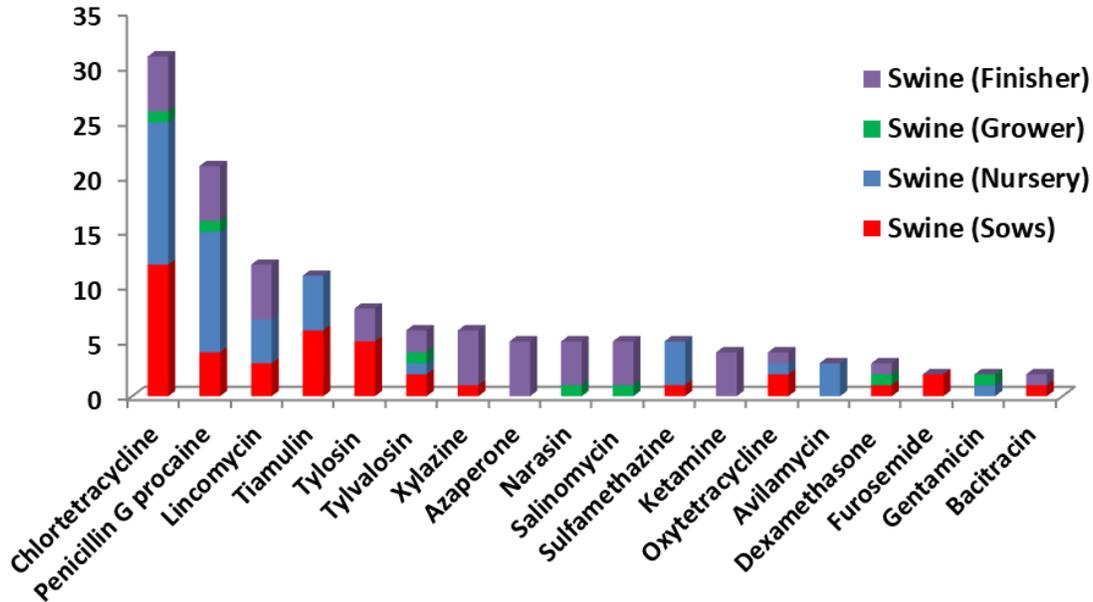


Diseases Requiring ELDU in Turkeys
May 1, 2018 – April 30, 2019

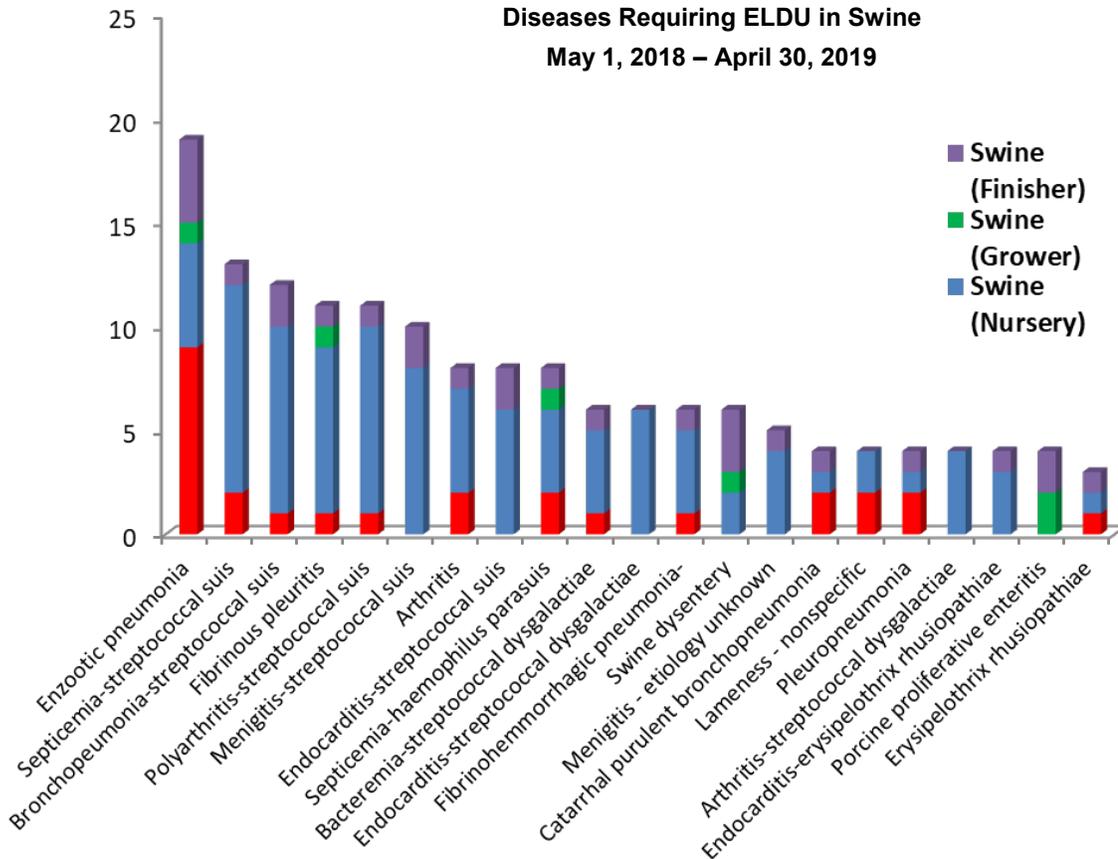


There was a significant increase in swine requests in the 2018-2019 time period. The primary reason for ELDU in swine appears to antimicrobial treatments for infectious diseases, especially respiratory and gastrointestinal infections.

ELDU Requests for Swine by Product
May 1, 2018 – April 30, 2019

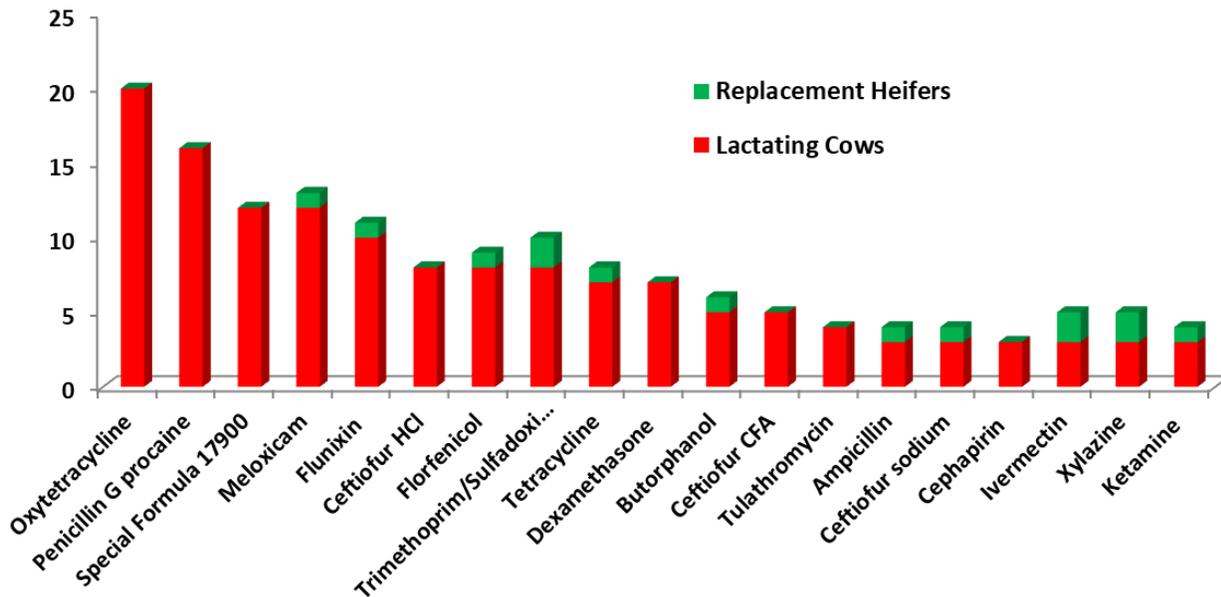


Diseases Requiring ELDU in Swine
May 1, 2018 – April 30, 2019

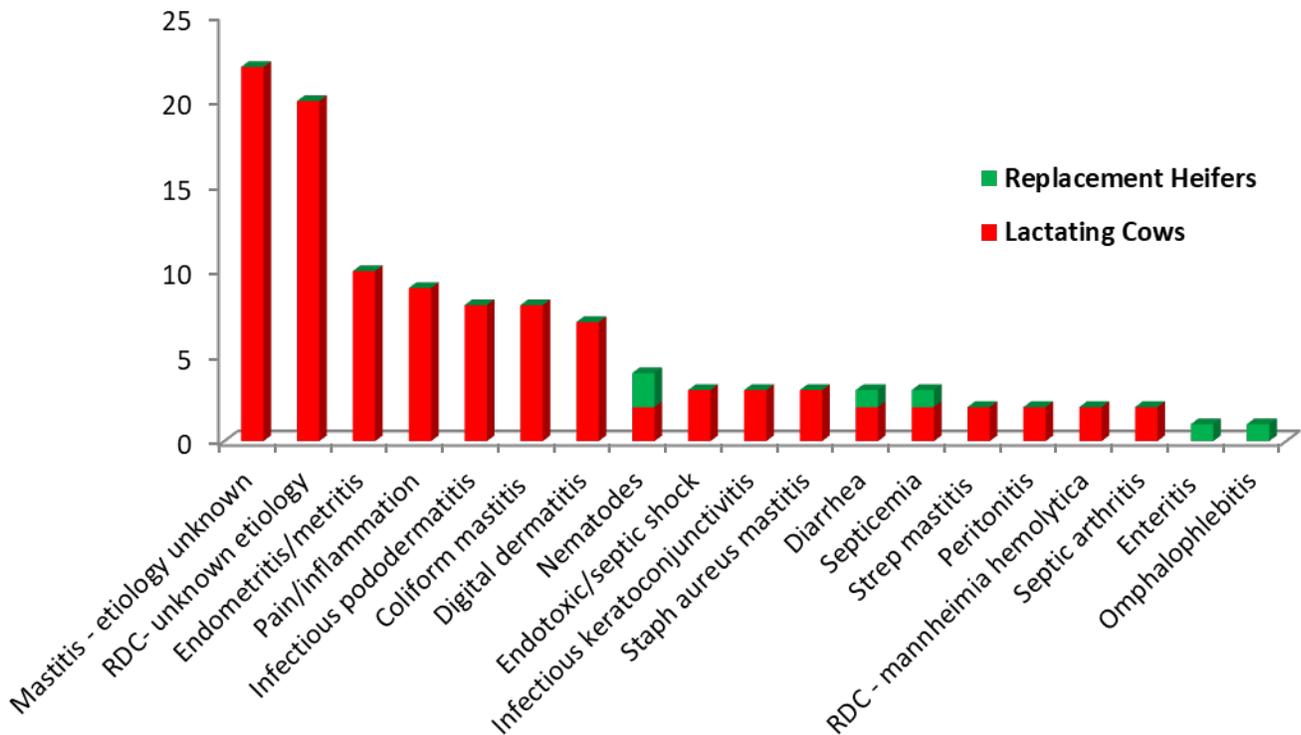


In dairy cattle, treatment of bovine respiratory disease (BRD) and mastitis continue to be the most common reasons for ELDU. Treatment of digital dermatitis and pain and inflammation are also important reasons for ELDU.

ELDU Requests for Dairy Cattle by Product
May 1, 2018 – April 30, 2019

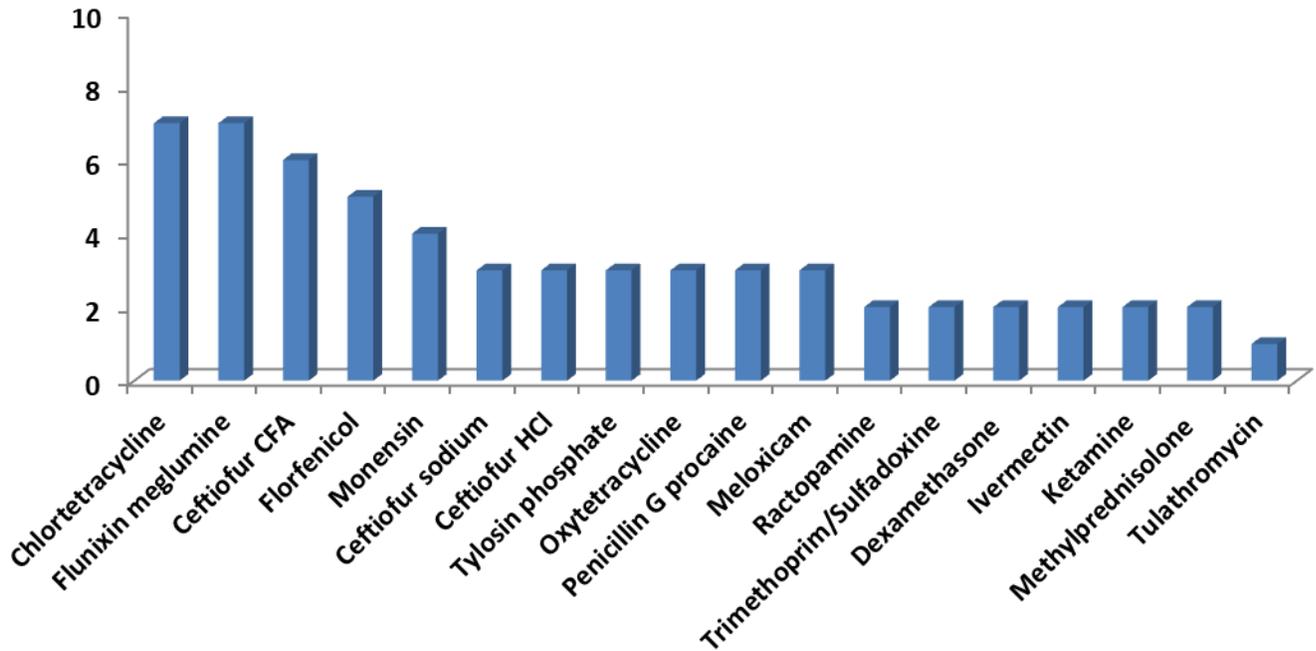


Diseases Requiring ELDU in Dairy Cattle
May 1, 2018 – April 30, 2019

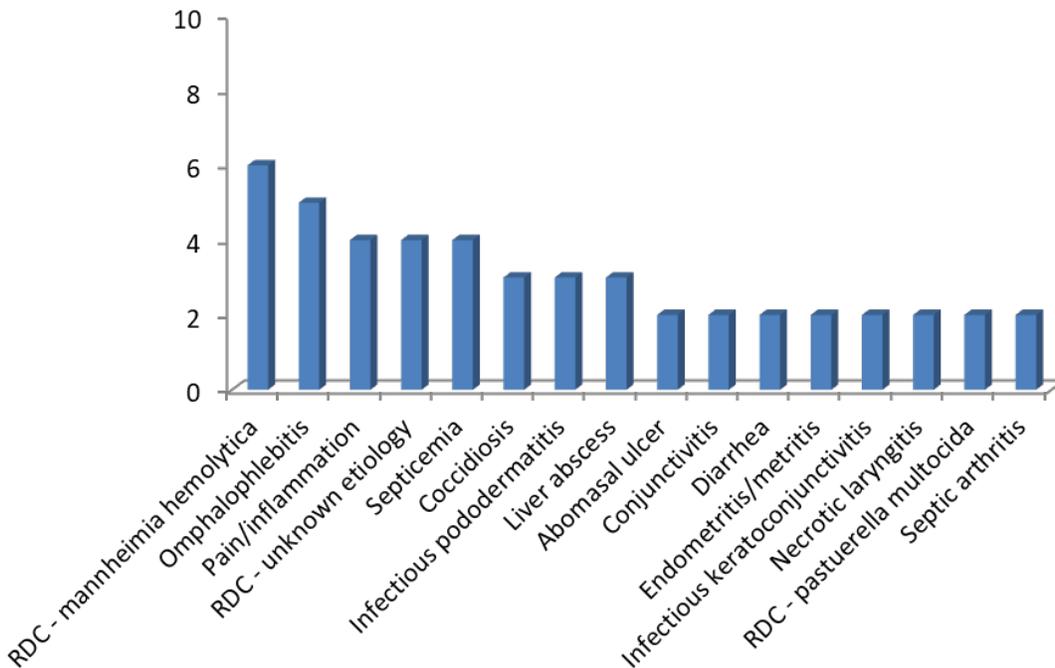


Requests for withdrawal information for ELDU in beef cattle are traditionally low. Cow/calf operations have animals that are far from the time of slaughter and feedlot operations typically do not use drugs in an ELDU manner. Requests reflect common diseases in beef cattle that may require ELDU because of handling and management factors.

ELDU Requests for Beef Cattle by Product
May 1, 2018 – April 30, 2019

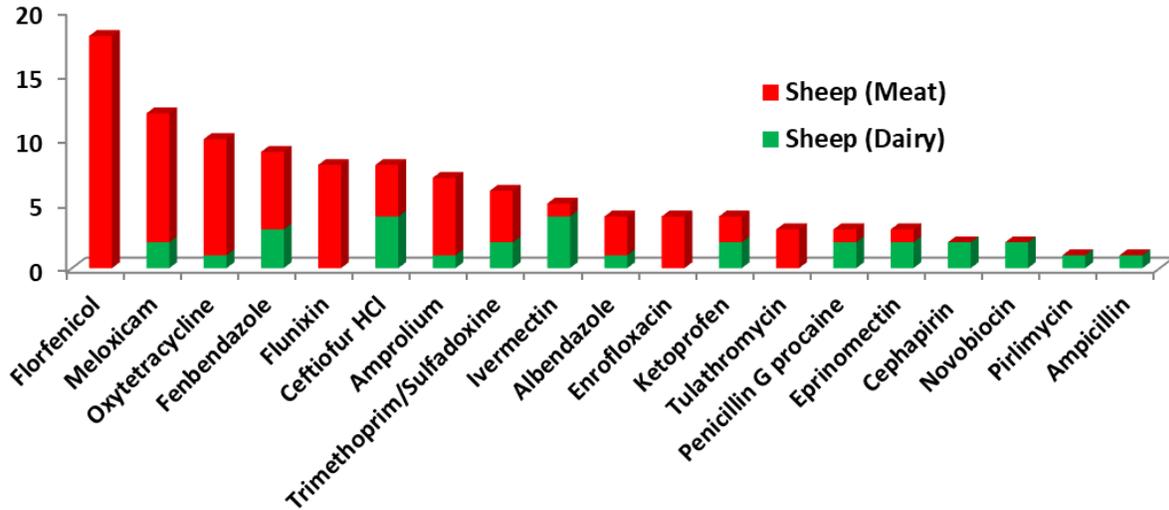


Diseases Requiring ELDU in Beef Cattle
May 1, 2018 – April 30, 2019

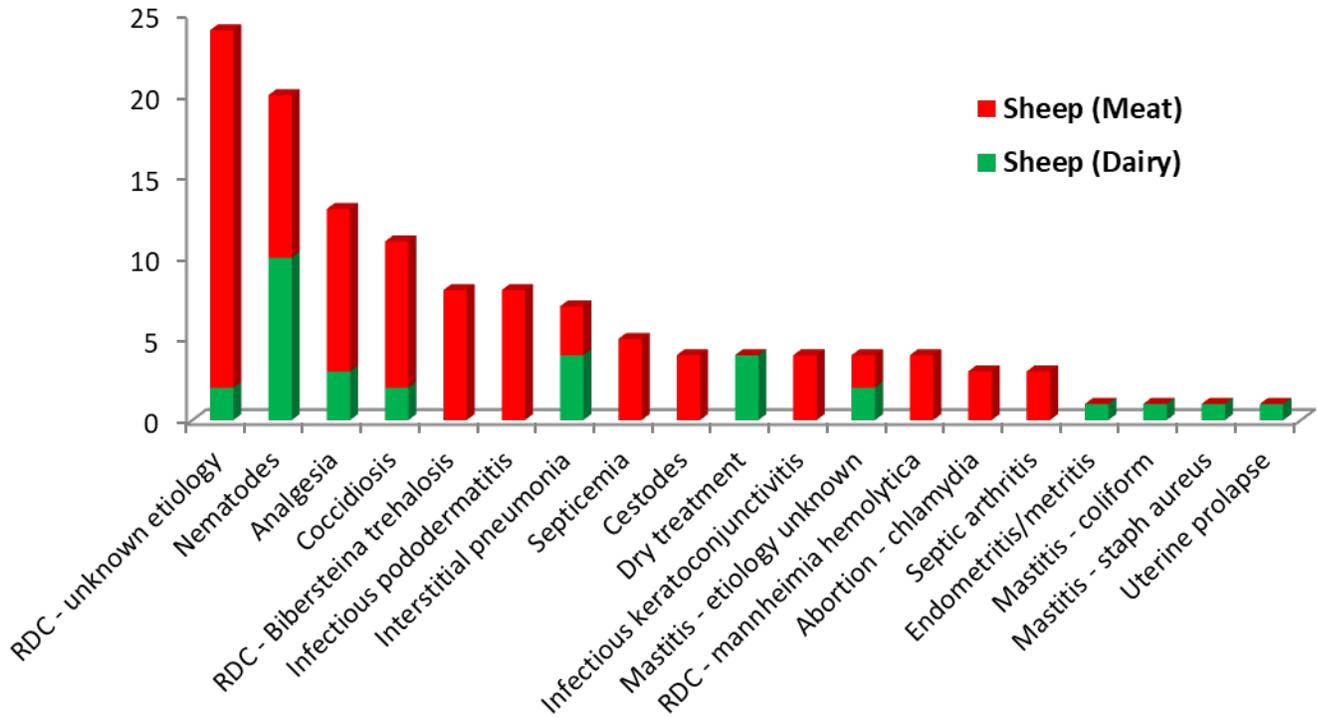


Due to limited drug approvals and bacterial and parasite resistance, antimicrobials, coccidiostats and dewormers are the most commonly used products for ELDU in sheep and goats. Even if parasite resistance is not present, residues in milk of lactating sheep and goats can be very problematic due to persistence and very sensitive detection methods used by regulators.

ELDU Requests for Sheep by Product
May 1, 2018 – April 30, 2019

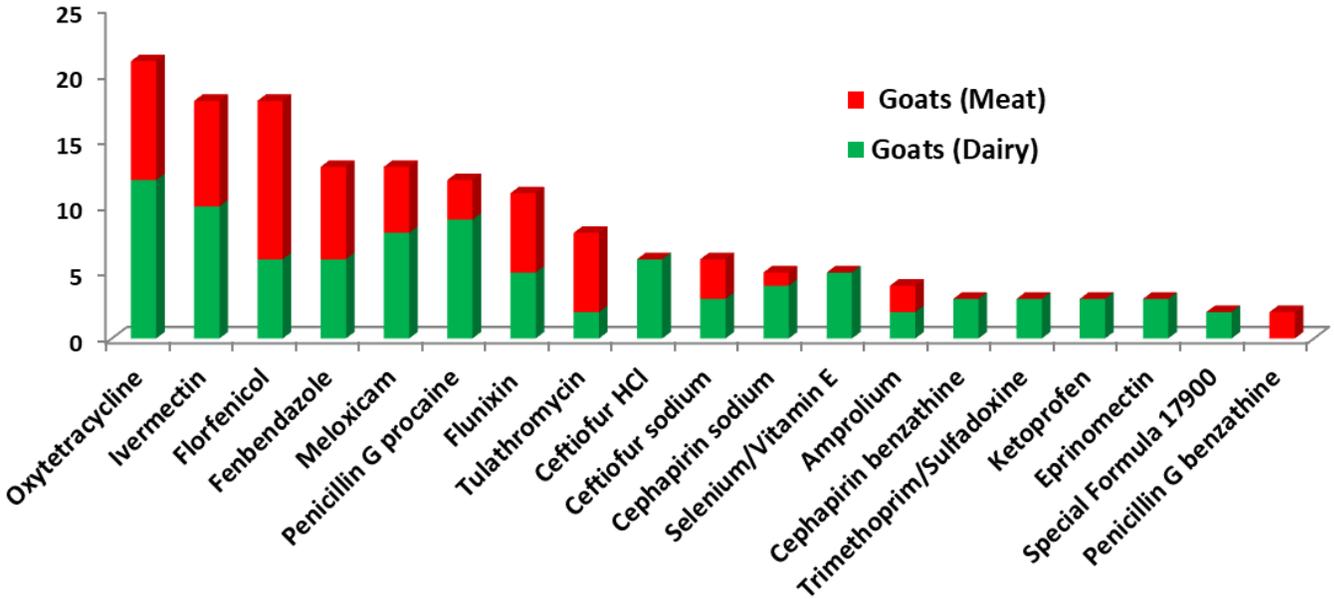


Diseases Requiring ELDU in Sheep
May 1, 2018 – April 30, 2019



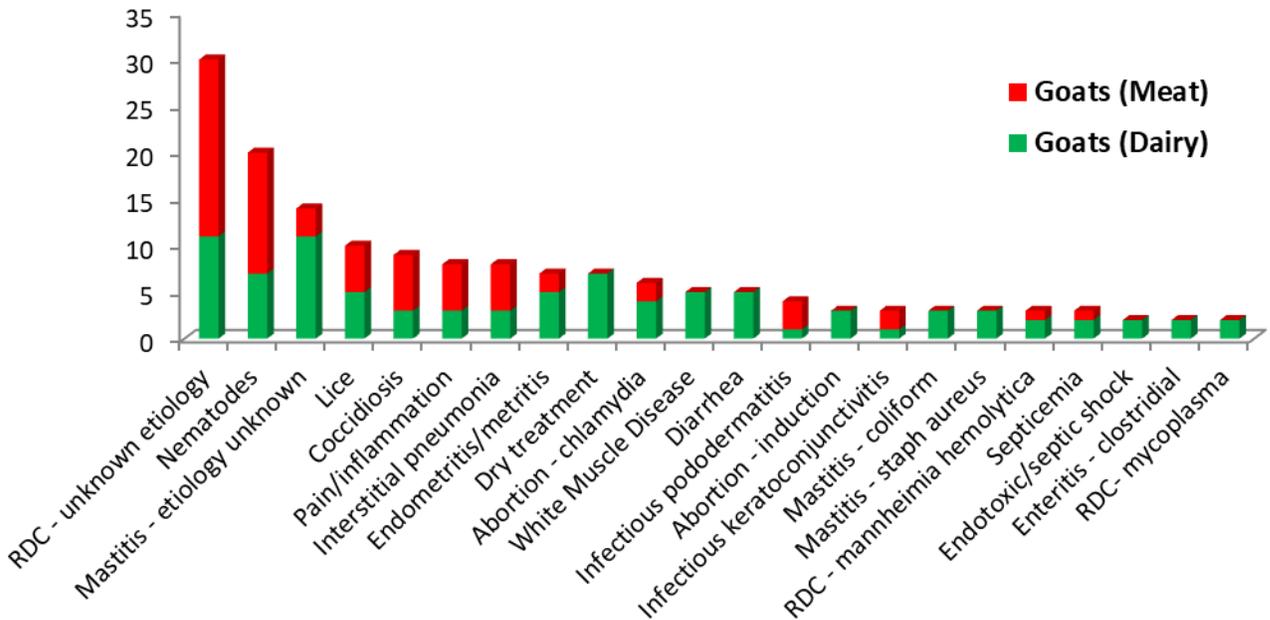
ELDU Requests for Goats by Product

May 1, 2018 – April 30, 2019



Diseases Requiring ELDU in Goats

May 1, 2018 – April 30, 2019



The chart to the right shows a comparison of ELDU requests by commodity over the past four years. The total number of requests continues to increase by approximately 200 each year. There was a noticeable increase in requests from swine, broiler breeders, and goats this year. Turkey requests declined 25%.

The data also illustrates the wide variety of species on which the CgFARAD™ team is asked to provide advice.

Species	2018-2019 requests	2017-2018 requests	2016-2017 requests	2015-2016 requests
Chickens/Broilers	796	756	825	801
Turkeys	380	512	482	446
Dairy Cattle	266	261	232	266
Goats	241	189	196	90
Sheep	170	164	125	61
Chickens/Layers	144	137	92	69
Broiler Breeders	259	119	79	101
Beef Cattle	82	64	88	48
Veal Calves	15	45	23	48
Swine	171	38	40	56
Rabbits	24	22	21	21
Horses	23	21	10	19
Pigeons	3	14	N/A	4
Bison	11	13	11	7
Quail	5	10	5	9
Guinea Fowl	2	8	1	0
Chukar Partridges	10	6	8	19
Pheasants	6	6	6	4
Ducks	20	5	6	13
Geese	2	5	N/A	3
Elk (Wapiti)	5	4	N/A	3
Fish	1	4	1	2
Deer	0	1	1	5
Other	4	N/A	5	10
Total	2640	2404	2257	2105