



CITY OF
MILACA *Minnesota*

255 First Street East, Milaca, MN 56353

(320)983-3141 | (320)983-3142 fax

September 21, 2022

Planning Commission Member:

Enclosed is your agenda packet for Planning Commission meeting on Wednesday, September 28, 2022, at 6 pm at city hall.

Again, please be aware that to save costs on postage, I have copied items back to back so please be sure to read both sides (if applicable).

Thank you,

A handwritten signature in black ink that reads "Deloris Katke". The signature is fluid and cursive, with the first name "Deloris" written in a larger, more prominent script than the last name "Katke".

Deloris Katke
Assistant City Clerk
City of Milaca



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CITY OF MILACA
PLANNING COMMISSION AGENDA
SEPTEMBER 28, 2022
6:00 P.M.
255 1ST ST E, CITY HALL COUNCIL ROOM

1. Open Regular Planning Commission Meeting
2. Call to Order/Roll Call
3. Approve minutes from August 15, 2022
4. Old Business
 - a. Zoning Changes to allow Chickens and Honey Bees
5. Other Business – Next Meeting Tuesday, October 11, 2022
6. Adjourn

Planning Commission Meeting Minutes

August 15, 2022 at 6:00pm

1. Roll Call
 - a. Present: Arla Johnson, Brad Tolzman, Hayden Hultman, Joel Millam, Pam Novak, Brett Freese
 - b. Others also present: Tammy Pfaff, City Manager; Norris Johnson, Milaca City Council; Dan Hollenkamp, Amy Smith, Craig and Nancy Anson, Wilmar and Jessie Rivera
2. Motion by Joel Millam and seconded by Brett Freese to approve Planning Commission Minutes from 2/7/22. Motion carried.
3. New Business
 - a. Discussion regarding conditional use permit for outdoor patio at El Jalisco. Tammy reported that some residents had sent letters in agreement with proceeding with the requested patio space. Motion made by Brett Freese, seconded by Joel Millam, to go along with Phil Carlson's recommendations of south patio setback, location, screening, and size; also the lighting and parking. Planning Commission's recommendations will go to the August 18th City Council meeting and if approved, El Jalisco can begin serving alcohol on the patio that Friday, August 19th. Work on the patio construction can begin right away.
 - b. Conditional Use Permit for The Rusty Shovel. Amy Smith discussed her business of growing and marketing flowers in the 300 block of 2nd Ave NW. City received letters from residents with no oppositions. Joel Millam questioned if Emmanuel Betinis, the owner of 355 2nd Ave NW, where flowers are grown, should be applying for a conditional use permit as well. Tammy will bring this up with Phil Carlson. Motion made and seconded by Pam Novak and Arla Johnson to accept the conditional use permit as stated. Motion carried.
 - c. Zoning changes to allow chickens and honey bees. Dan Hollenkamp distributed materials on the keeping of chickens and bees within the city limits. Much discussion was held regarding pros and cons of these matters. Motion made by Joel Millam and seconded by Brett Freese to send materials to city attorney for review and to change amendment regarding chickens and draw up amendment regarding honey bees. Motion made by Arla Johnson and seconded by Pam Novak to close the public hearing. Motion carried.
 - d. Hayden Hultman discussed the City of Milaca comprehensive plan, which he has been updating. He discussed key points of the plan.
4. Other Business
 - a. Tammy Pfaff reported Laurie Gahm is interested in becoming a member of the Planning Commission. Motion made by Arla Johnson and seconded by Brett Freese to accept nomination. Motion carried.
 - b. Tammy Pfaff reported Mille Lacs Health System is still on track to open at the former Fairview Clinic in December.
 - c. Brad Tolzman discussed the possible building of a new ALC school and questioned possible building locations within the city.

- d. S. Williams/AJW Contracting is now working on an apartment only building (no retail any longer) at 555 Hwy 23 E.
 - e. Tammy Pfaff reported going around the city with police to speak with residents about keeping unlicensed vehicles and having unsightly yards. Residents were given timelines to take care of offenses.
5. Adjournment: With no other business, motion made by Joel Millam, seconded by Arla Johnson to adjourn at 7:15pm.

Respectfully submitted,

Pam Novak

A		B		C	
1	ORDINANCE #	CURRENT	CHANGE TO		
2	95.04 FARM OPERATIONS	Farm animals shall only be kept where farming operations are allowed in the city provided that no animal shelter shall be within 100 feet of an adjoining piece of property.	Per Ord. #156.006 can only have farm operations on 10 acres or more. Need to change		
3					
4	156.002(G)	PURPOSE of Zoning: Preventing overcrowding of land and undue concentration of structures by regulating the use of land and buildings in relation to the land and buildings surrounding them.	JUST INFORMATION		
5					
6	156.006 DEFINITIONS	Farming Operations: A tract of land in a residential zone that is 10 acres or more in size which is principally used for raising farm animals or crops.	Need to change acreage size		
7					
8	156.035(C) (7)	R-1Single Family -Farming operations on property of 10 acres or more	Need to change acreage size		
9					
10	156.036 (C) (8)	R-2 One & Two Family-Farming operations on property of 10 acres or more	Need to change acreage size		
11					
12	156.056(F)(4)	All fences require a permit	Building permit will need to be pulled for a fence (\$26.00)		
13					
14	156.057 (E)(4)	Assessory buildings, structures and uses in a farming operation - Structure must be a minimum of 100 feet from the property line	Will lot sizes allow 100 feet from property line?		
15	156.059	Fence Regulations	Will any of this need to be changed?		
16	156.063	Farming Operations	Will need to change this section to correspond with changes		

	A	B	C
17	156.110 (C)	Feed Lots; Livestock Pollution-No feed lot or manure storage site shall be located within 500 feet of a residential structure of an abutting lot.	Lots are not 500 feet. Need to change
18		Existing Farming Operations;Restrictions-Farming operations of less than ten acres, excepting commercial feed lots, are nonconforming uses in the district in which an existing operation is located, provided that any new building in which farm animals are kept shall be a distance of 100 feet or more from any other lot in any residential district.	
19	156.117(A)		
20		SOME PROS	
21			
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23			
24		SOME CONS	
25		Eggs and honey	Do we want to change all these ordinances for the handful of people that would like to have chickens
26		Meat from chickens	Not everyone will dispose of chicken waste in a clean, healthy way (simply putting in garbage cans during the summer to stink up the area
27			If animal waste enters storm drains, this could lead to a variety of livability and healthy-related concerns/issues city wide. Increase phosphorus in our water.
28			
29			
30			

	A	B	C
31			Possible fire hazard with heat lamps
32			Do we really want law enforcement chasing after chickens that are running at large
33			What is someone is allergic to bees and they have bee hives next door to them? New resident moves in after notification
34			Interim Use Permits is \$200.00. City needs to notify neighbors within 350 feet
35			How would we handle possible avian flu outbreak. Other possible diseases: Fowl Cholera, Coccidiosis, Fowl Pox, Newcastle Disease and Salmonellosis.
36			Will need to apply for: Interim Use Permit \$200.00 Building Permit - fee based on size Fence Permit \$26.00
37			
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ORDINANCE

AN ORDINANCE AMENDING TITLE IX GENERAL REGULATIONS, ADDING CHAPTER 98 (BEEKEEPING) OF THE CITY OF MILACA CODE OF ORDINANCES

BEEKEEPING ORDINANCE

98.01 PURPOSE.

The purpose of this Ordinance is to establish certain requirements for beekeeping within the City, to avoid issues which might otherwise be associated with beekeeping in populated areas.

Compliance with this Ordinance shall not be a defense to a proceeding alleging that a given colony constitutes a nuisance, but such compliance may be offered as evidence of the beekeeper's efforts to abate any proven nuisance.

Compliance with this Ordinance shall not be a defense to a proceeding alleging that a given colony violates applicable Ordinances regarding public health, but such compliance may be offered as evidence of the beekeeper's compliance with acceptable standards of practice among hobby beekeepers in the State of Minnesota.

Honey bees (*apis mellifera*) are of benefit to humankind, and to Minnesota in particular, by providing agriculture, fruit and garden pollination services and by furnishing honey and other useful products; and

Minnesota is among the leading states in honey production and agricultural by-products associated with beekeeping throughout the United States; and

Domestic strains of honey bees have been selectively bred for desirable traits including gentleness, honey production, tendency not to swarm and non-aggressive behavior, characteristics which are desirable to foster and maintain; and

Gentle strains of honey bees can be maintained within populated areas in reasonable densities without causing a nuisance if the bees are properly located and carefully managed;

98.02 DEFINITIONS.

APIARY. The assembly of one or more colonies of bees at a single location.

BEEKEEPER. A person who owns or has charge of one or more colonies of bees.

BEEKEEPING EQUIPMENT. Anything used in the operation of an apiary, such as hive bodies, supers, frames, top and bottom boards and extractors.

COLONY. An aggregate of bees consisting principally of workers, but having, when perfect, one queen and at times drones, brood, combs and honey.

HIVE. The receptacle inhabited by a colony that is manufactured for that purpose.

HONEY BEE. All life stages and castes of the common domestic honey bee, *apis mellifera* species.

LOT. A contiguous parcel of land under common ownership.

NUCLEUS COLONY. A small quantity of bees with a queen housed in a smaller than usual hive box designed for a particular purpose.

UNDEVELOPED PROPERTY. Any idle land that is not improved or actually in the process of being improved with residential, commercial, industrial, church, park, school or governmental facilities or other structures or improvements intended for human occupancy and the grounds maintained in associations therewith. The term shall be deemed to include property developed exclusively as a street or highway or property used for commercial agricultural purposes.

SWARM. A group of bees, usually calm, with a queen that have left a hive to find a new home.

98.03 INTERIM USE PERMIT REQUIRED.

- (A) No person shall keep, maintain, or allow to be kept any hive or other facility for the housing of honeybees on or in any property in the City of Milaca without an Interim Use Permit.
- (B) The number and location of hives, colonies, and/or facilities for the housing of honeybees permitted by this section shall be determined by a permit issued by the City of Milaca. The permit shall specify any restrictions, limitations, conditions, or prohibitions required by the City as necessary to safeguard public health and the general welfare. Subject to a hearing to be held by a committee of the council or other designated hearing examiner, if requested within five (5) days of the notification, the City may deny, suspend, or revoke any permit applied for or granted pursuant to this section if any condition or requirement is violated or if the keeping of honeybees becomes a public nuisance.
- (C) Any person desiring a permit for the keeping of honeybees shall make application to the City. Approval of the permit is subject to the applicant showing they have completed a course on beekeeping including but not limited to disease and mite management and swarm control. Rental properties may not obtain a beekeeping permit. Neighbor notification shall be the responsibility of the City. All permits issued shall expire on March 31 of the year following issuance unless sooner revoked. The application fee for such permit shall be as established in the license fee schedule and shall be paid at the time of application. **There shall be no fee for annual renewal, but the permit must be renewed annually for administrative tracking and notification purposes in a format supplied by or approved by the City.** Failure to provide such renewal shall constitute a

DO WE
NOTIFY
NEIGHBORS
EACH
YEAR?

violation of this section and may result in revocation of permit. The City shall inspect the premises as deemed necessary. Should the permit be refused, denied, or revoked, the fee paid with the application shall be retained by the City.

98.04 STANDARDS OF PRACTICE.

- (A) Honey bee colonies shall be kept in hives with removable frames, which shall be kept in sound and usable condition.
- (B) Each beekeeper shall ensure that a convenient source of water is available to the colony so long as colonies remain active outside of the hive.
- (C) Each beekeeper shall ensure that no wax comb, syrup for feeding honey bees, or other material that might encourage robbing by other bees are left upon the grounds of the apiary lot. Such materials once removed from the site shall be handled and stored in sealed containers, or placed within a building or other insect-proof container.
- (D) For each colony permitted to be maintained under this Ordinance, there may also be maintained upon the same apiary lot, one (1) nucleus colony in a hive structure not to exceed one (1) standard nine and five-eighths (9-5/8) inch depth ten (10) frame hive body with no supers.
- (E) Each beekeeper shall maintain their beekeeping equipment in good condition, including keeping the hives painted if they have been painted but are peeling or flaking, and securing unused equipment from weather, potential theft or vandalism and occupancy by swarms. It shall not be a defense to this Ordinance that a beekeeper's unused equipment attracted a swarm and that the beekeeper is not intentionally keeping bees.
- (F) The beekeeper shall show they have had a complete course on beekeeping including but not limited to disease and mite management and swarm control.
- (G) Each beekeeper shall enclose their property and/or the apiary with a latching fence. A fence shall not be required if the hives are approved to be located on a rooftop so as to be inaccessible to the general public so that bee movements to and from the hive do not interfere with the ordinary movements of persons on adjacent properties or the public right-of-way.
- (H) Each beekeeper shall, if unable or unwilling to continue to maintain their permitted hives, promptly notify the City so that the hives may be made available to an approved honeybee rescue entity, or, if necessary, disposed of by the City. **There shall be a fee as established in the license fee schedule for disposal of hives.**
- (I) If the beekeeper relocates a hive or colony to a new apiary site, the beekeeper shall apply for an updated beekeeping permit, prior to the relocation, on the form provided by the city.

DOES CITY WANT
TO DISPOSE?

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ACRES OR
MORE

- (J) Upon receipt of a beekeeping permit for initial review, the city will send written notice to all owners of properties located within three hundred fifty (350) feet of the property the apiary site(s) are identified on. Any objections to the registration must be made in writing and received within fourteen (14) days of mailing the notice. If any written objection is received, the beekeeping permit must be referred to the city council or designee.
- (K) The beekeeping permit must be denied if the city receives a written objection from a resident living within the designated notification area that includes medical documentation by a licensed physician of an allergy to honeybee venom.

98.05 COLONY DENSITY.

- (A) Except as otherwise provided in this Ordinance, in each instance where a colony is kept less than twenty-five (25) feet from a property line of the lot upon which the apiary is located, as measured from the nearest point on the hive to the property line, the beekeeper shall establish and maintain a flyway barrier at least six (6) feet in height. The flyway barrier may consist of a wall, fence, dense vegetation or a combination thereof, such that bees will fly over rather than through the material to reach the colony. If a flyway barrier of dense vegetation is used, the initial planting may be four (4) feet in height, so long as the vegetation normally reaches six (6) feet in height or higher. The flyway barrier must continue parallel to the apiary lot line for ten (10) feet in either direction from the hive, or contain the hive or hives in an enclosure at least six (6) feet in height. A flyway barrier is not required if the property adjoining the apiary lot line (1) is undeveloped, or (2) is zoned agricultural, industrial or is outside of the City limits, or (3) is a wildlife management area or naturalistic park land with no horse or foot trails located within twenty-five (25) feet of the apiary. A flyway barrier is not required if the hives are located on the roof of a structure containing at least one (1) full story if all hives are located at least five (5) feet from the side of the structure and at least fifteen (15) feet from any adjacent and occupied structure.

- (B) Honey bees are allowed only in R-1 and R-2 zoning districts with 10 acres or more.

- (1) One half (1/2) acre or smaller lot: Two (2) colonies;
- (2) Larger than one-half (1/2) acre but smaller than three-quarter (3/4) acre lot: Four (4) colonies;
- (3) Larger than three-quarter (3/4) acre lot but smaller than one (1) acre lot: Six (6) colonies;
- (4) One (1) acre but smaller than five (5) acres: Eight (8) colonies;
- (5) Larger than five (5) acres: As determined as appropriate by the City.

SIZE OF LOTS?

R1 & R2 10
ACRES OR MORE
LIKE CHICKENS?
OR KEEP THESE
ACREAGE SIZES?

IF WE GO WITH
ACREAGE SIZES,
THEN WE HAVE
TO CHANGE
FARMING SIZE
OF 10 ACRES

(C) Regardless of lot size, so long as all lots within a radius of at least two hundred (200) feet from any hive, measured from any point on the front of the hive, remain undeveloped, there shall be no limit to the number of colonies. No grandfathering rights shall accrue under this subsection. If a beekeeper serves the community by removing a swarm or swarms of honeybees from locations where they are not desired, a beekeeper shall not be considered in violation of the portion of this section limiting the number of colonies while temporarily housing the swarm on the apiary lot in compliance with the standards of practice established pursuant to this section if the swarm is so housed for no more than thirty (30) days from the date acquired.

KEEP ?

MAY NOT NEED
THIS IF 10
ACRES OR
MORE

(D) Hives cannot be located in the front or side yards. Corner lots shall be considered to have two front yards. All hives must have rear setbacks of a minimum of twenty-five (25) feet from property line. A minimum of thirty (30) feet from adjacent dwellings.

(E) Hives cannot be located in any drainage and utility easements; floodway or regulated floodplain or the first twenty-five (25) feet of the wetland buffer.

98.06 INSPECTION.

A designated City official shall have the right to inspect any apiary for the purpose of ensuring compliance with this Ordinance between 8 a.m. and 5 p.m. once annually upon prior notice to the owner of the apiary property and more often upon complaint without prior notice.

98.07 PRESUMED COLONY/HIVE VALUE.

For the purpose of enforcing City Ordinances against destruction of property, each colony/hive shall be presumed to have a value of \$275.

98.08 COMPLIANCE.

(A) Upon receipt of credible information that any colony located within the City is not being kept in compliance with this Ordinance, the City Manager shall cause an investigation to be conducted. If the investigation shows that a violation may exist and will continue, the City Manager shall cause a written notice of hearing to be issued to the beekeeper, which notice shall set forth:

- (1) The date, the time and the place that the hearing will be held, which date shall be not less than thirty (30) days from the date of the notice;
- (2) The violation alleged;
- (3) That the beekeeper may appear in person or through counsel, present evidence, cross examine witnesses and request a court reporter, and

KEEP?

- (4) That if the City Manager finds that they have been kept in violation of this Ordinance, and if the violation is not remediated within the time allowed, the bees may be ordered removed and/or destroyed.
- (B) Notices shall be given by certified US Mail return receipt requested or personal delivery. However, if the beekeeper cannot be located, then notice may be given by publication in a legal newspaper for the county in which the apiary property is located, at least seven (7) days before the hearing.
- (C) The hearing shall be conducted by the City Manager. The burden shall be on the City to demonstrate by a preponderance of evidence that the colony or colonies have been kept in violation of this Ordinance. If the City Manager finds a violation, then he/she may order that the bees be removed from the City or such other action as may address the violation, and that the apiary lot be disqualified for permitting under this Ordinance for a period of two (2) years from the date of the order, the apiary lot ownership changes, in which case the prohibition shall terminate. If the order has not been complied with within twenty (20) days of the order, the City may remove, donate or destroy the bees and charge the beekeeper with the cost thereof. Upon destruction of bees by the City, all equipment shall be returned by the City to the beekeeper, with expenses of transportation to be paid by the beekeeper. The City's destruction of the bees shall be by a method that will not damage or contaminate the equipment, including wax foundation.
- (D) The decision of the hearing officer may be appealed by the beekeeper as provided in the City's rules and procedures. If no provision for appeal exists, then the beekeeper may file a notice of appeal with the City within fifteen (15) days of the date the order is placed in US Mail to the beekeeper, or ten (10) days if the decision is announced at the hearing by the City Manager.
- (E) No hearing and no order shall be required for the destruction of honey bees not residing in a hive structure that is intended for beekeeping.

98.09 SAVINGS CLAUSE.

- (A) In the event any part of this Ordinance or its application to any person or property is held to be unenforceable for any reason, the unenforceability thereof will not affect the enforceability and application of the remainder of this Ordinance, which will remain in full force and effect.
- (B) A person who has custody of beekeeping colony(ies) without obtaining an Interim Use Permit is guilty of a misdemeanor.

Adopted by the City Council of the City of Milaca this _____ day of _____.

Dave Dillan, Acting Mayor

ATTEST:

Tammy Pfaff, City Manager

ORDINANCE

AN ORDINANCE AMENDING TITLE IX (GENERAL REGULATIONS), ADDING CHAPTER 99 (CHICKENS), OF THE CITY OF MILACA CODE OF ORDINANCES

CHICKENS IN R-1 AND R-2 RESIDENTIAL ZONES (LESS THAN 10 ACRES)

99.01 DEFINITIONS

For the purpose of this Zoning Code and other applicable ordinances certain words and terms are defined as follows:

BROODING. The period of chicken growth when supplemental heat must be provided due to the chicken's inability to generate enough body heat.

CHICKEN. A domesticated chicken that is kept as a pet or serves as a source of eggs or meat.

COOP. The structure used for the keeping or housing of chickens.

EXERCISE YARD. A larger fenced area that provides space for exercise and foraging for the chickens when supervised.

HEN. A female chicken.

OFFICER. Any person designated by the City Council as an enforcement officer.

ROOSTER. A male chicken.

RUN. A fully-enclosed and covered area attached to a coop where the chickens can roam unsupervised.

99.02 GENERAL PROVISIONS.

The keeping of chickens is allowed only in R-1 and R-2 zoning districts – single family dwellings only (not townhomes, duplexes, etc.) subject to the following provisions:

- (A) No more than three chickens shall be housed or kept on any one property and shall only be allowed on properties with single family dwellings in the R-1 and R-2 Zones. **Rental properties are prohibited from having chickens unless written permission from owner is obtained.**
- (B) Roosters are prohibited.
- (C) Chickens shall not be housed in a residential dwelling unit or an attached or detached garage, except for brooding purposes.
- (D) A coop is required to house the chickens. The coop must be constructed and maintained to meet the following minimum standards:
 - (1) The coop shall be located in the side or rear yard **and shall be a separate structure.**

- (2) The coop shall be a minimum of **ten (10) feet from property lines and a minimum of thirty (30) feet from any other structures due to fire hazards.**
 - (3) The coop shall provide a minimum of nine (9) square feet of interior floor space per chicken and must be elevated twelve (12) to twenty-four (24) inches to ensure air circulation beneath the coop. A coop must have rodent resistant flooring.
 - (4) Construction shall be adequate to protect chickens from extreme temperatures and prevent access by rodents.
 - (5) The coop must be maintained in a clean and sanitary condition, devoid of all rodents and vermin and free from objectionable odors. Manure shall not be allowed to accumulate in a way that causes an unsanitary condition or causes odor detectible on another property.
 - (6) The coop shall be fully-enclosed.
 - (7) The coop may not be constructed on any parcel of land before construction of the principal structure.
 - (8) The coop will be considered an accessory structure and will count towards total lot coverage.
 - (9) **A building permit must be applied for, approved and paid for before any coop is allowed on the property. A site plan must be submitted with building permit and include run or exercise yard plans. In no event shall off-street parking space, structures of any type, buildings or other features cover more than 60% of the lot area resulting in less than 40% landscaped in residentially zoned properties (Ord. #156.060(B)(3)).**
- (E) A run or exercise yard is required.
- (1) Runs must be constructed and maintained to meet the following minimum standards:
 - (a) The run shall be located in the side or rear yard and attached to the coop.
 - (b) **The run shall meet the setback requirements for utility/storage structures for the respective zoning district.**
 - (c) The size of the run shall be at least sixteen (16) square feet if access to a fenced exercise yard is available. The size of the run shall be at thirty-two (32) square feet if access to an exercise yard is not available. If the coop is elevated two (2) feet so the chickens can access the space beneath, that area may be counted as a portion of the minimum run footprint.

- (d) The run shall be fully-enclosed. Hardware cloth or similar material must extend one foot beyond the base of the coop and run area to protect from predators.
- (2) Exercise yards must be fully-enclosed by a fence. **A fence permit must be obtained from the city.**
- (F) Grains and feed must be stored in rodent and raccoon-proof containers inside of a structure.
- (G) Chicken fighting is prohibited.
- (H) Outdoor butchering of chickens is prohibited.
- (I) Dead chickens must be disposed of according to the Minnesota Board of Animal Health rule which requires chicken carcasses to be disposed of as soon as possible after death, usually within 48 hours to 72 hours. Legal forms of chicken carcass disposal include offsite burial, offsite incineration or rendering, or offsite composting.
- (J) The city's officer may inspect the premises to ensure compliance with city ordinances.
- (K) Any person no longer keeping chickens must notify the city and remove the coop within 30 days of the chickens being removed from the property.

IS THIS RENEWED YRLY
BUT FEE WAIVED EACH
YEAR?

99.03 ADMINISTRATIVE APPROVAL REQUIRED.

No person shall own, keep, or have custody of live chickens without first obtaining an Interim Use Permit from the city. **Interim Use fee shall apply on initial application but there shall be no fee for annual renewal, but the permit must be renewed annually for administrative tracking and notification purposes in a format supplied by or approved by the city. Failure to provide such renewal shall constitute a violation of this section and may result in revocation of permit. The city shall inspect the premises as deemed necessary. Should the permit be refused, denied or revoked, the fee paid with the application shall be retained by the city.**

- (A) Application shall be made to the city along with a fee for Site Plan Review according to the adopted fee schedule.
- (B) A site plan shall be submitted with the application. The site plan shall identify the location of all structures on the property, including the coop, run, and exercise yard, and provide accurate property dimensions and setbacks.
- (C) The city will send letters to ~~all adjacent~~ property owners **within 350 feet. If any neighbor objects to the chickens, Interim Use Permit will be denied.**
- (D) Upon receipt of a complete application, the City Manager shall be responsible for conducting an administrative Site Plan Review and, if approved, issuing a permit.

(E) If at any time the City Manager determines violations of this subchapter to exist, the permit is subject to revocation.

99.04 RUNNING AT LARGE PROHIBITED.

- (A) It shall be unlawful for the chicken(s) of any person who owns, harbors or keeps chickens, to run at large.
- (B) Any expenses incurred by the city in the enforcement of this section shall be the responsibility of the chicken owner. Expenses may include but are not limited to staff time, shelter, and feed.
- (C) Any person who owns, harbors or keeps chickens shall be afforded one warning of running at large. A second occurrence of chicken(s) running at large will result in indefinite permit revocation by the City Manager.
- (D) A person who owns, harbors or keeps chickens which runs at large shall be guilty of a misdemeanor.
- (E) A person who has custody of live chickens without obtaining an Interim Use Permit is guilty of a misdemeanor.

Adopted by the City Council of the City of Milaca this _____ day of _____.

Dave Dillan, Acting Mayor

ATTEST:

Tammy Pfaff, City Manager



Management of Backyard Poultry

By ***Yuko Sato***, DVM, MS, DACPV, Iowa State University;

Patricia S. Wakenell, DVM, PhD, DACVP, Purdue University School of Veterinary Medicine

Last full review/revision May 2020 | Content last modified Oct 2020

Environment

Backyard poultry ownership laws and regulations vary by city, county, and neighborhood. Some cities and homeowner's associations have specific rules about chicken ownership, whereas other cities permit chicken ownership with no limitations on the number or type of chickens. It is important to know the regulations and to keep peace with the neighborhood about owning poultry.

It is crucial to fence in backyard poultry to keep them at home and to protect them. Domestic chickens are easy prey for predators such as cats, dogs, skunks, hawks, and foxes. The fencing should extend into the ground at least a foot to prevent predators such as raccoons and foxes from digging under it. Water holes and vegetation should be avoided around the coop, because they encourage wild waterfowl, insects, rodents, and other vermin to the area, which can harm poultry and spread disease. It is wise to cover the top of the enclosure to protect the birds from predators that fly or climb, as well as to prevent exposure to wild fowl that may transmit disease.

Overcrowding should be avoided; space allocation must consider and allow for growth of the birds. Enough indoor space should be available to prevent overcrowding during inclement weather. The type of bird will help determine the type of housing. Most breeds of chickens are hardy, although meat-type birds are usually sturdier than egg layers. Show breeds often do not have hybrid vigor and require heated or cooled housing. Minimum space requirements should be determined not only by size of bird but also by activity levels. However, in general, laying hens and larger chickens need a minimum of 1.5–2 sq ft of space inside and 8–10 sq ft in outside runs. Ducks and geese need much more space, 3–6 sq ft inside and 15–18 in outside runs.

Floor type is an important consideration in building a coop, and owners need to be cognizant about how to work with various materials. Putting the birds on dirt is cheap and easy, but manure is hard to remove and can become a muddy mess without proper maintenance. When the soil gets wet or contaminated, the dirt must be tilled and new soil added after topdressing the old dirt with lime or bleach to prevent parasite and microbial overgrowth. Wood is another option, but it must be in good condition, because old wood may rot and harbor pathogens, and exposed splinters can result in injuries. In addition, wood should not be treated, because chemicals such as lead can be harmful to birds. Concrete flooring is the best for permanent coops, because it is easy to clean, impervious to vermin, and a good barrier to predators. However, it is the most expensive and takes the most effort to maintain.

It is also important to use good, absorbent litter material for bedding in the houses. The litter should be clean, dry, and free of mold. Good litter choices should be based on how much moisture it can hold,

including sand, pine shavings, rice and nut hulls, whereas straw and ground corncobs are not as ideal due to poor absorbent qualities. Litter can get very wet around the drinkers, and proper removal of caked litter is necessary. Wet litter encourages growth of pathogens, such as bacteria, fungi, and parasites, and leads to problems such as footpad dermatitis. Dry litter creates a dusty environment and may cause irritation of the respiratory tract. Ideally, litter should contain 20%–25% moisture; a quick test is to grab a handful of litter and see whether it clumps briefly and then crumbles apart.

Wet litter and high ammonia levels can lead to serious welfare issues, including ammonia burns of the cornea, footpad dermatitis, breast blisters, and skin burns. The US Environmental Protection Agency (EPA) recommends that people and animals not be exposed to 25 ppm of ammonia for ≥ 8 hours. Adequate ventilation allows for moisture to be properly removed from the bedding.

Chickens have a body temperature of 105°–109°F (40°–43°C) and start to feel heat stress at environmental temperatures $> 75^\circ\text{F}$. In extreme temperatures, poultry will modify their behavior to stay in their thermoneutral zone (55°–75°F). The ideal temperature range for poultry is 65°–75°F, with a relative humidity of up to 40%. To encourage good air circulation, windows should be put up on the south or east side of the coop, with a narrow ledge on the windows to prevent birds from roosting and defecating in the area. Using misters and fans will help keep the poultry cool during the hot summer months, and a well-insulated coop will keep birds warm during the winter.

Nutrition

The biggest expense in raising poultry is the cost of feed. However, good feed is a sound investment, because unbalanced diets will reduce performance levels and may result in nutritional diseases. Common issues in backyard flocks are insufficient water quality or amount, prolonged storage and degradation of vitamins and minerals, dilution of balanced and complete nutrition with scratch or supplemental feed, and feeding diets for the wrong life stage. Poultry require 1.5–3.5 parts water for every 1 part of feed consumed (up to 5–6 times for waterfowl) and require more in hot weather. Poultry will not consume feed if the amount of water is inadequate, which can lead to serious health problems. Poultry owners also have to consider the possibility of bacteria (eg. coliforms) and other contaminants in the water, including arsenic, calcium, chlorine, copper, fluorine, iron, lead, magnesium, mercury, nitrates, nitrites, sodium, sulfate, and zinc.

Vitamin and mineral deficiencies seen in poultry are discussed in more detail in the poultry section. The most common vitamin deficiency problems in backyard flocks are caused either by not using a vitamin premix in the diet or by using a vitamin premix beyond its shelf-life, resulting in loss of efficacy. Typically, fat-soluble vitamin deficiencies, especially vitamin D₃, will become clinically evident before water-soluble vitamin deficiencies. The most common presentation of birds with vitamin D3 deficiency is skeletal abnormalities (rickets) that can present in a flock as mortality, loss of condition, and birds that are lame or reluctant to move because of scoliosis, soft and pliable bones, or lack of bone strength.

Owners should be advised to purchase quality feed, store it correctly (avoid temperature extremes to prevent vitamins and minerals from denaturing), and use it within the expiration date. Feed should be stored in a dry, cool area to keep vitamins from breaking down and to prevent mold/fungal growth. Using a black light to check for fluorescence in corn grains is a quick way to screen for harmful mycotoxins. If poultry owners wish to mix their own feed, the most common range of inclusion for a vitamin/mineral premix would be 3–10 pounds of premix per ton of feed. Most feed and premixes are available in large quantities and expire in 3–6 months (as short as 2 months in the summer), and poultry owners need to be aware of the **dangers of feeding old and improperly stored feed.**

Backyard poultry owners need to know how much feed each bird will consume a day to predict when to order the next batch of feed. A day-old chick will eat approximately the amount of feed that can fit on the surface of a US quarter, and an adult laying hen should eat no more than a quarter of pound of feed per day. **Signs of low or inadequate nutrient density include:**

- slow growth
- poor body condition
- slow or lack of egg production
- feather loss

In contrast, a meat-type bird may consume close to twice as much feed as an adult layer. However, overfeeding or giving feed ad lib, especially in meat-type birds, can result in musculoskeletal disorders.

Using commercial broiler breeds in a backyard setting is strongly discouraged, because these birds need to be on a very strict feed restriction to avoid metabolic disease. Birds with access to the outdoors will supplement their diet by foraging and eating insects. In addition, many poultry owners choose to supplement their birds' diet with table scraps and scratch grains. Scratch should not be overfed, because it may cause the birds not to eat a balanced diet. Fat scraps should be avoided also, because they promote fatty liver and acute death from liver rupture. Although foraging behavior may be desired, the birds should still receive most of their diet from a balanced, complete ration.

The type of feed recommended varies with the species, age, and use of the bird. For some species of birds, finding the appropriate feed ingredients can be difficult. In general, game bird owners who cannot find the appropriate game bird starter feed can substitute a turkey poult starter feed, which is typically high in protein (25%–28% crude protein). It is critical to not feed layer diets to nonlaying, growing birds, because the inadequate protein levels and high calcium content (3.5%–6%) may result in irreversible renal damage.

Thus, one of the most common problems seen in mixed-age flocks is [urolithiasis](#) (gout). Causes of gout include infections leading to kidney damage (eg, [infectious bronchitis virus](#)), feeding excessive levels of sodium bicarbonate, [mycotoxicosis](#), high protein diets, and more often, feeding a high-calcium (adult layer) diet to an immature bird. Diets for growing birds (pre-lay) are typically 0.8%–1.2% calcium, whereas laying birds require 3.5%–6% calcium because of the nutritional demand for laying eggs (a typical egg requires ~2 g of calcium). However, it is important for adult layers to have adequate calcium to avoid osteoporosis ([cage-layer fatigue](#)) and thin-shelled eggs.

Cachectic bird



COURTESY OF DR. YUKO SATO.



Backyard Poultry

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Raising backyard poultry (*Gallus domesticus*) in urban environments is a growing trend in the USA. In developing countries, backyard poultry represent ~80% of poultry stock, often consisting of indigenous unselected breeds of various ages, with various species mixed in the same flock. This serves to meet household food demands and is an additional source of income. Modern day USA backyard poultry owners often view their birds as companion animals, in contrast to poultry raised for commercial production. A 2010 USDA study in four cities (Los Angeles, Denver, Miami, New York) found that 0.8% of all households owned chickens, and nearly 4% of households without chickens planned to have chickens in the next 5 years. As backyard poultry ownership becomes increasingly popular, owners must be properly educated about how to keep their flocks healthy; thus, more veterinarians must be capable of providing this education and/or veterinary care.

All commercial and domestic chickens originate from the red jungle fowl (*Gallus gallus*), which was domesticated in Southeast Asia many centuries ago. Today, hundreds of different chicken breeds are bred for different purposes and are characterized by meat-type, egg-laying type, and dual purpose. Meat-type chickens are characterized by rapid growth rate and good meat yield, versus egg-laying chickens, which are selected for good egg production. Dual purpose chickens, such as Plymouth Rock, New Hampshire, Rhode Island Red, Wyandotte, and Orpington, are reasonably good for both egg and meat production, making them a suitable choice for backyard chickens for most owners.

Purchasing chicks and other poultry from a reputable hatchery or breeder is recommended to get off to a good start and prevent future problems. Purchasing from hatcheries or breeders that participate in the [National Poultry Improvement Plan](#) is recommended, because these flocks are routinely tested for diseases such as *Salmonella Pullorum* and *S Gallinarum* (see [Salmonellosis](#)). A list of certified hatcheries and breeders can be found by contacting official state poultry associations. In addition, prospective owners are encouraged to physically visit the breeder flock or hatchery of purchase to ensure only healthy birds are brought into the backyard flock.

Many backyard flock owners have multiple ages and/or species of birds. Mixing birds of different species and from different sources increases the risk of introducing disease, and it is preferable to keep only birds of similar ages and species together ("all in/all out"). If multiple ages and/or species are kept on a property, efforts should be made to minimize contact between groups by keeping them in separate locations. Birds that are either economically or emotionally most important should be cared for first each day. Separating new or returning birds for at least 4–6 weeks is necessary to monitor for signs of illness. Practicing good [biosecurity](#) is also key for good poultry health.

Nits, poultry



Louse egg packets (nits) at the base of the feathers on a brown hen.

Courtesy of Dr. Yuko Sato.



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Common Infectious Diseases in Backyard Poultry

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The following list includes some of the more common conditions encountered in backyard poultry practice.

Parasitism

As in other species, the common parasites in poultry are mites, lice, ticks, worms, and protozoa.

Two common [mites of poultry](#) are the Northern fowl mite (*Ornithonyssus sylviarum*) and the red mite. The Northern fowl mite is most commonly found around the vent, tail, and breast. These mites are easily observed as small, reddish-brown flecks. Red mites (*Dermanyssus gallinae*) feed only at night, making daytime diagnosis difficult. They can be found in cracks and seams near bedding areas and appear like flea dust or salt and pepper-like deposits. Red mites cause feather loss, irritation, and anemia.

Several types of lice live on poultry, and lice or nits (egg packets of lice) can be seen at the base of the feathers. In severe infestations, growth and egg production can be affected. Insecticides are available for treatment.

[Fowl ticks](#) comprise a group of soft ticks that parasitize many species of poultry and wild birds. Ticks are easily missed, because they spend relatively little time on the bird. Heavy infestations can cause anemia or tick paralysis, and ticks can be vectors for *Borrelia anserina* (spirochetosis). Spraying of buildings with insecticide is the treatment of choice.

Roundworms and tapeworms are the most common internal poultry parasites and are generally the result of soil contamination and poor management. Unless infestations are heavy, clinical disease is usually not evident. A fecal examination should be performed before treatment to assess levels of infestation (and monitor effectiveness of treatment), because most domestic poultry will have some degree of internal parasitism. Piperazine can be used for roundworms, although its effectiveness can be minimal and drug resistance is a problem; off-label fenbendazole or levamisole can be used for tapeworms. These

Nits, poultry



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compounds should not be used in laying hens. Proper litter management will reduce parasite loads and reinfection.

As in commercial poultry production, control of [coccidia](#) is one of the more common and costly problems in raising backyard poultry. Coccidia are found primarily in the intestinal tract of most poultry but are also found in the kidney in geese. Coccidiosis is generally seen in young birds (1–4 months old), although it can be seen in any bird >10–14 days old. Signs include diarrhea that is often bloody and frequently leads to loss in production, general malaise, and death. Coccidia thrive in moist, heavily soiled litter, and disease is often a result of too high a density of birds. Prevention is by supplying coccidiostats in the feed, which can be given to birds as early as in their starter diet. Outbreaks can be treated with treatment dose of selected coccidiostats and extra-label sulfa drugs. Sulfa drugs have a long withdrawal period and should not be used in laying hens. Routine yearly fecal examinations are recommended for all backyard flocks. Coccidiosis vaccination is available in mail-order day-old chicks from certain hatcheries, but care must be taken to have ideal brooding conditions to confer protective immunity.

Consult the product label before use of any insecticides or antiparasitics to ensure the product is up-to-date and labeled by the EPA and approved for use in poultry and poultry premises. Topical products approved for use in dogs and cats, such as fipronil and selamectin, are strictly forbidden for use in all food animals, including backyard poultry. Some good resources include [VetPestX](#), a database of registered pesticides for animals, and the [FARAD poultry page](#), which also includes information about labeled antimicrobials.

Viral Diseases

Avian Encephalomyelitis

[Avian encephalomyelitis](#) (AE) is seen in chickens, turkeys, pheasants, and quail. It primarily affects chicks 1–3 weeks old. Nearly all commercial flocks are infected, but clinical disease is low because of maternal antibodies. AE can be transmitted vertically in eggs laid between 5 and 13 days after infection and is an enteric infection under natural conditions. The spread is more rapid in floor-raised birds than in cage-raised birds. **There is no treatment**, and vaccination of breeders (both chicken and turkey) for maternal antibodies to protect the young during early life is critical to prevention. Because many specialty breeders, particularly those that sell stock to an intermediate supplier, do not vaccinate, AE is a fairly common viral disease in backyard poultry. **Vaccination** should be given after 8 weeks of age but by at least 4 weeks before production.

Avian Influenza

Avian influenza (AI) is a highly contagious respiratory viral disease that affects both domestic and wild birds. AI viruses are classified into two pathotypes: low pathogenic avian influenza (LPAI), which typically causes few to no clinical signs in poultry, and highly pathogenic avian influenza (HPAI), which typically causes high mortality. Waterfowl and shorebirds, such as ducks and geese, are natural hosts for the AI virus, and these birds can shed the virus, often without showing any signs of illness or deaths.

Backyard poultry are just as susceptible to AI infection, if not at higher risk. Many backyard flocks are kept outdoors, free-ranging, have multiple ages and sources of birds, and have less strict standards for biosecurity compared with commercial flocks. This results in mixing with other poultry within the flock and higher risk of contact with wild waterfowl, creating favorable conditions for disease spread within and between flocks. Many studies show that the backyard flocks with more types of poultry and the worst

sanitary conditions have higher incidences of AI.

If a flock has sudden (less than 24-48 hours), high death rates (close to or over 50%) or many birds with respiratory signs, owners should contact a veterinarian or the state animal health emergency number to test for AI infection. A state poultry association can also be contacted, as many offer free or reduced cost yearly testing for AI in backyard poultry. There is no approved vaccine in the US nor treatment for AI. Good management and biosecurity practices are the only way to protect against AI infection in backyard poultry.

Fowlpox

Fowlpox virus causes crusty and nodular lesions primarily on the unfeathered portions of the bird. Occasionally, poxvirus can cause lesions in the mouth and trachea, causing death due to suffocation (wet form). If the bird recovers, immunity is generally lifelong. Not all pox outbreaks are caused by fowlpox virus but can be caused by related strains such as turkey pox, psittacine pox, quail pox, etc. Strains are usually species specific but can occasionally affect other species (eg, pigeon pox). One strain may not cross-protect with another. Vaccination is available and should be given to flocks on premises with a previous history of pox or with presence of pox in nearby birds. Poxvirus is transmitted through contact of infected lesions with open wounds and by insect bites (mosquitoes), and insect control is key to prevent spread.

Infectious Bronchitis

Infectious bronchitis virus (IBV) causes a rapidly spreading respiratory disease in young chicks. Production is reduced and egg shell abnormalities are seen in laying hens. Certain strains of IBV also cause kidney disease. Chicks infected early in life may have permanent damage to the oviduct, so they do not produce eggs or become false layers. IBV is highly transmissible, but most birds recover with supportive treatment. Antibiotics can be administered in the water to prevent secondary infection. Vaccines are available; however, backyard chickens are usually not vaccinated unless they come in contact with other chickens.

Marek Disease

Marek disease (MD) is a common viral disease of chickens, both in commercial production and backyard flocks. The primary lesions are tumors of the viscera, muscle, skin, and peripheral nerves. Nerve lesions can be an early indicator of the disease and result in a condition termed "range paralysis." Birds with visceral tumors often have cachexia as the only clinical sign. Tumors of the muscles and skin are frequently palpable.

Tumors that affect the eyes (ocular Marek) could be seen as a grayish color change in the pupils or irregular margins of the pupils, with lack of proper pupillary light reflex. MD cannot be treated but can be prevented by vaccination at hatch. When backyard poultry are acquired or hatched onsite, every attempt should be made to vaccinate for MD. Vaccinations may not be effective if administered to birds >1-2 weeks old. Clinical MD

Marek's disease



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generally affects birds 4–14 weeks old; however, it is not uncommon in older birds, and death loss is often sporadic rather than explosive. If tumors are found in the viscera of deceased birds, carcasses should be submitted to a diagnostic laboratory for differential diagnosis between MD and [avian leukosis](#), another common lymphoid tumor disease. Avian leukosis is seen in birds >14 weeks old, and tumors are similar to those found with MD. Avian leukosis has no treatment or vaccination.

Newcastle Disease

[Newcastle disease virus](#) (NDV) affects numerous species of birds and is the reason for quarantine regulations for birds entering the USA. Exotic NDV is highly fatal and is not present in the USA at this time. Past outbreaks have resulted in the slaughter of thousands of birds. Milder forms of NDV are present in the USA and are primarily characterized by respiratory disease and a drop in egg production. Mortality is variable and depends on the strain of the virus. As with infectious bronchitis virus, [vaccination](#) is available but is generally given to backyard poultry only if exposed to other birds.

Bacterial Infections

Colibacillosis

[Colibacillosis](#) is caused by *Escherichia coli* and is usually secondary to other infections such as infectious bronchitis virus and mycoplasmosis. *E coli* is seen in most species and age groups. A wide variety of clinical signs affecting the respiratory, reproductive, and intestinal systems can be seen. Vigorous adherence to biosecurity and sanitation programs can effectively prevent the organism from causing disease. Many antibiotics can be used for treatment, and sensitivity to the antibiotic should be tested. Treatment is usually successful if the disease is in the early stages.

Mycoplasmosis (Chronic Respiratory Disease)

Chronic respiratory disease in poultry (primarily chickens and turkeys), or [mycoplasmosis](#), is generally caused by *Mycoplasma gallisepticum* infection. *M gallisepticum* is a reportable disease in turkeys in select states in the USA. Pathogenicity of *M gallisepticum* is enhanced by infection with other organisms. Clinical signs of respiratory disease develop slowly in a flock, and feed consumption drops. Infection of the sinuses with purulent exudate (swollen face) is common in turkeys. Serology and isolation and identification of the organism can be used for diagnosis. Prevention, as with the salmonellae, rests with establishment of a clean flock by eliminating the infected flock, completely sanitizing the premises, and obtaining clean stock. Vaccination is available on a state-by-state basis. Treatment is expensive, and the disease often recurs after treatment is stopped. Other important mycoplasmas in poultry include *M synoviae* ([infectious synovitis](#)) and *M meleagridis* (venereal infection and airsacculitis).

Salmonellosis

In general, *Salmonella Pullorum* and *S Gallinarum* ([fowl typhoid](#)) cause the greatest problem for poultry, whereas *S Typhimurium*, *S Enteritidis*, *S Heidelberg*, and *S Kentucky* are important in terms of public health.

S. enteritidis egg transmitted, causes a diarrheal disease in young chicks and poults, and results in high mortality. Adult birds are asymptomatic carriers. Diagnosis is based on disease history and isolation of the bacteria. Prevention is achieved by purchasing birds from a breeder flock that is [National Poultry Improvement Plan](#) certified clean of *S Pullorum* and typhoid. Treatment is not recommended, because it can cause birds to become carriers. Fowl typhoid is seen in chickens, turkeys, and many other game and wild birds. Fowl typhoid is similar in disease presentation and diagnosis to *S Pullorum*, although mature birds can show clinical signs of fowl typhoid. Clinical signs are infrequently observed in poultry infected with *S Enteritidis* and *S Typhimurium*, although most paratyphoid *Salmonella* infections are asymptomatic in most poultry. Flocks can be monitored by obtaining egg samples and environmental samples to culture the organism.

Fungal Diseases

Aspergillosis

[Aspergillosis](#), or brooder pneumonia, is seen in many poultry and other species of birds. Birds <3 weeks old are most commonly affected, and infection is obtained from hatcheries or brooders contaminated with fungal spores. Morbidity is variable, and mortality can be high in clinically affected birds. Culturing the fungus or demonstrating typical fungal hyphae in fresh preparations from lesions are used for diagnosis. Prevention is accomplished by thoroughly cleaning hatcheries, incubators, waterers, feeders, and ventilation fans and by keeping litter clean and dry. Treatment is expensive and may not be effective. Ketoconazole and nystatin have been used.

Favus

Favus, or ringworm, also known as white comb, is a fungal disease caused by *Microsporium gallinae*, which is of minor importance in all fowl, especially chickens and turkeys. Affected birds have small, white, chalky deposits on the comb, which can enlarge and coalesce to form a dull white, moldy layer that could be several millimeters thick. The disease is self-limiting, and the comb heals after several months. Typically, if the disease is limited to the comb, the health of the bird is not affected, but if feathered portions are involved, the bird may become emaciated and die. Favus is a public health concern.

Favus infection, comb, chicken



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Antibiotic Usage

Antibiotics are readily available in feed stores and online poultry supply sites; however, use of antibiotics must be carefully considered. Beginning in 2017, livestock and poultry producers were required to have a

veterinary feed directive (VFD) in place to buy or use medically important antibiotics in animal feed, and all water medications now require a prescription.

Medications are one of the most difficult aspects of treating backyard poultry because patients are typically both pets and food animals. However, the FDA considers all chickens and poultry to be food animals regardless of an owner's attachment to a pet bird. Thus, all regulations pertaining to the treatment of food animals must be followed when treating backyard poultry. Even if this is treating one 4-H bird, the veterinarian will still need to have a VFD to dispense a VFD product, so injectable, oral, or water-soluble medications are suggested if dealing with small flocks. Consult with [FARAD](#) for FDA-approved medications for use in laying hens, and contact a local poultry health specialist for specific treatment concerns.

Each antibiotic is labeled for different species and the use of the poultry, and administering the correct dosage may be difficult. In some instances, antibiotics are useful to treat and control disease. Certain antibiotics, such as chloramphenicol, glycopeptides, and fluoroquinolones, are prohibited for extra-label use in food animals, including backyard poultry. Judicious use of antibiotics may be recommended after appropriate diagnostic tests. However, vaccination, good biosecurity, good management, proper sanitation practices, and a good plan of nutrition are key to control of disease and are far more effective than antibiotic usage.



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