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Solutions and Treatments



The following solutions have been used as supportive treatments by poultry and game bird producers. They are intended as aids in treating the described conditions, not as a replacement for any management, drug, or antibiotic therapy.

ASPIRIN SOLUTION

Used as a general treatment for reducing distress conditions of birds (fever or listlessness) that accompanies many diseases.

Dissolve five (5 grain) aspirin tablets in one gallon of water.

Offer this solution free-choice to the birds for the duration of an illness. The solution aspirin equivalent to 25 grains/gallon or 324 mg/gallon of drinking water. The dosage rate is about 25 mg/lb body weight per day.

ASTRINGENT SOLUTION

This solution can be used to treat young birds that show non-typical disease symptoms of poor growth. The solution can also be given to birds suffering from respiratory diseases that produce a large amount of mucus exudate. This solution will help "cut through" the mucus and allow it to be expelled easier.

Two quarts of apple cider vinegar diluted into 100 gallons of water

(4 teaspoons/gallon)

The tannin in the apple cider vinegar aide in removing any mucus or coating from the mouth, throat, or intestinal tract. Nutrients and drugs are more readily absorbed. Offer this solution as the only drinking water source for two to three day intervals.

COPPER SULFATE SOLUTION

Use this solution as a treatment for mycosis (mold infection) in the crop. An alternate name for the condition is "Thrush." Use the solution as a "follow-up" treatment after flushing with epsom salt solution--refer to the section for LAXATIVE SOLUTIONS.

Dissolve .5 lb copper sulfate and .5 cup vinegar into 1 gallon of water for a "stock" solution. Dispense stock solution at the rate of 1 oz per gallon for the final drinking solution.

An alternate method of preparing the solution is:

dissolve 1 oz copper sulfate and 1 tablespoon of vinegar into 15 gallons water.

Use either solution as the sole water source during the course of the disease outbreak. Copper sulfate is often referred to as "bluestone".

EGG DIPPING SOLUTION

This procedure has been used to destroy pathogenic organisms such as *Mycoplasma spp.* that can be carried on the hatching eggs. The procedure must be conducted exactly as described, and is not intended as a routine hatching egg treatment. The procedure is only used in unusual situations.

The antibiotic solution contains 500 ppm gentamycin sulfate (1 gram per 2 liters of water) or 1 gram tylosin per liter of water.

The hatching eggs must be carefully washed, rinsed, and sanitized prior to treatment. The eggs are then prewarmed to 100 degrees F. for 3-6 hours and immediately submerged into the antibiotic solution that has been previously cooled to 60 degrees F. The eggs are left in the antibiotic solution for 15 minutes before being placed into the incubator.

After each day's use, the solution must be sterilized by heating to 160 degrees and maintained for 10 minutes. Any water lost during sterilization must be replaced. Refrigerate the solution in a clean covered container between uses to prevent bacterial contamination.

Do not use or store solutions for more than three days after dilution.

FUMIGATION OF HATCHING EGGS AND EQUIPMENT

Preincubation of hatching eggs and equipment

Mix .6 gram potassium permanganate (KMnO₄) with 1.2 ml formalin for each cubic foot of space.

-or-

2 oz KMnO₄ and 4 fl oz formalin per 100 ft³ space.

Mix both ingredients in an earthenware or heat resistant container having at least ten times the capacity of the ingredients being added. Circulate the gas for 20 minutes at 70 degrees F. or higher. Equipment without eggs can be allowed to fumigate overnight before exhausting the formaldehyde gas.

Fumigating eggs in incubator

Mix .4 gram KMnO₄ and .8 ml formalin per ft³

-or-

1.5 oz KMnO₄ and 3 fl oz formalin per 100 ft³

Follow the same guidelines as discussed for equipment fumigation. Do not fumigate chicken eggs between the 24th and 96th hours of incubation. Other species of birds may need the incubation intervals adjusted to compensate for total incubation time in relationship to the chicken's incubation period. It is best to incubate after the incubator reaches normal operating temperature and humidity.

LAXATIVE SOLUTIONS

The following solutions or mixtures are recommended to flush the digestive system of toxic substances, most notably for treating birds exposed to botulism toxins.

Molasses Solution

Add one pint of molasses to 5 gallons of water

Offer the drinking solution free-choice to the affected birds for about four hours. Treat severely affected birds individually if they cannot drink. Return the birds to regular water after the treatment period.

As a supportive treatment for symptoms resulting from Cryptosporidia infection, often referred to as coronaviral enteritis, use:

One quart molasses in 20 gallons of water

Offer this solution free-choice for a period of up to 7-10 days. It is assumed that the molasses replaces certain minerals lost from diarrhea during the course of the infection.

Epsom Salt Solution

1 lb Epsom Salt per 15 lb feed

-or-

1 lb Epsom Salt per 5 gallons water for 1 day

Give the epsom salt feed mixture as the sole feed source for a one day period. This feed can be used only if the birds are eating. If the birds are not eating, use the water solution. If the birds are unable to eat or drink by themselves, use individual treatment with:

1 teaspoon of Epsom Salt in 1 fl oz water

Place the solution in the crop of the affected bird. This same amount of solution will treat 5-8 quail or one chicken.

Castor Oil Therapy

Dose individual birds with .5 oz castor oil.

NUTRIENT SOLUTIONS

The following solutions can be used as supplements to diets that are deficient in certain amino acids, energy, or vitamins and electrolytes. They are used only as temporary additives and not intended as part of a regular feeding program.

Amino Acid Solution

100 grams (7 fl oz) dl-methionine and 110 grams (6 fl oz) l-lysine HCl dissolved in 50 gallons water

-or-

2 grams (.8 tsp) dl-methionine and 2.2 grams (.7 tsp) l-lysine HCl in one gallon of water

Offer the solution free-choice to the birds as an aide to reducing the depressing effects of low-protein diets. Make up a fresh solution daily and offer to birds in clean waterers. All measurements in parentheses () are volumetric measurements while those expressed in

grams are weight measurements.

Sucrose Solution

10 ounces of granulated sugar per gallon of water

This solution may be given as an energy treatment for weak chicks. Offer the solution as the only water source for the first 7-10 days. Clean the drinkers and replace with fresh solution at least once daily. The solution shown above contains eight percent sugar and approximately 2000 kilocalories per gallon.

Vitamin & Electrolyte Solution

This solution can be used to reduce the effects of stresses caused by subclinical diseases, transporting, management errors, etc. Dilute a commercial vitamin/electrolyte packet into the prescribed amount of water. Use as the only source of drinking water until the stress problem has been corrected.

PARASITE (INTERNAL) SOLUTIONS

The following treatments have been shown to be effective for eliminating internal parasites from poultry and game birds. Neither of these drugs (fenbendazole or levamisole) has been approved for use by FDA, so the producer accepts all responsibility for their use. Both drugs have been very effective if used properly and will eliminate most types of internal parasites that affect birds. *Caution: Do not use with birds producing eggs or meat destined for human consumption.*

Fenbendazole Treatments

One-day Treatment

1 oz Safeguard or Panacur per 15-20 lb feed

Dissolve the fenbendazole product in one cup of water. Mix this solution well into the feed and give to the birds as their only feed source for one day. When completely consumed, untreated feed can be given. Be sure that the commercial medication contains 10% fenbendazole.

Safeguard is a product of Ralston Purina, and Panacur is a product marketed by American Hoechst. One ounce of medication will treat about 1000 10-oz bobwhite quail. Adjustments of the amounts of medication and feed needed may be necessary depending on the number and size of the birds.

Three-Day Treatment

1.2 oz Safeguard or Panacur in 100 lb feed

-or-

4 oz pkt of "Worm-A-Rest Litter Pack" (Ralston Purina) in 50 lb feed

-or-

5 lb bag of "Worm-A-Rest Mix Pack" in 495 lb feed

Feed all the medicated feeds free-choice for three consecutive days. The feed mixtures provide 75 ppm fenbendazole. Quail will receive about 1.7 mg/bird each day for adult birds or 2.75 mg/lb of bodyweight.

Fenbendazole has been shown to be a very effective treatment for eliminating *Capillaria* (capillary worms), *Heterakis* (cecal worms), *Ascaridia* (roundworms), and *Syngamus spp.* (gapeworms). Toxicity from overdosing with fenbendazole is very remote. Research indicates that amounts up to 100 times the recommended dosages have been given under research conditions without adverse effects to the birds. Use of this product during molt, however, may cause deformity of the emerging feathers.

Leviamisole Solutions

52 gram (1.84 oz) pkt Tramisol in 100 gallons water

-or-

13 gram (.46 oz) pkt Tramisol in 25 gallons water

-or-

52 gram (1.84 oz) pkt in 3 qt water (stock solution)

Dissolve the 52 gram packet of "Tramisol Cattle and Sheep Wormer" or the 13 gram packet of "Tramisol Sheep Drench Powder" into the appropriate amount of water. If the stock solution is used with a water proportioner, be sure that the stock solution is dispensed at the rate of 1 oz/gallon in the drinking water.

Any of the solutions are effective at treating *Capillaria* (capillary worms), *Heterakis* (cecal worms), and *Ascaridia* (roundworms). The solutions contain .5 gram of leviamisole per gallon of water. Allow the birds to drink the solution for one day, then remove. In severe cases, the treatment can be repeated every 5-7 days.

PESTICIDE SOLUTIONS

Mite and Lice Body Spray Solution

Dissolve into 10 gallons of water:

6.5 fl oz 10% Permethrin EC

-or-

11.5 fl oz 5.7% Permethrin EC

-or-

2.5 fl oz 25% Permethrin EC

-or-

1.5 lb 25% Malathion wettable powder

-or-

5.3 oz 57% Malathion EC

-or-

.75 lb 50% Carbaryl (Sevin) wettable powder

Spray birds thoroughly to wet the skin and feathers. Pay particular attention to the vent area of the birds. Each gallon of spray will treat 75-100 adult leghorn-type laying hens or 250-300 adult quail. A second treatment can be applied about four weeks after the first application if necessary. The walls, ceiling, and litter of the house can be sprayed with these solutions to kill individual insects not on the birds.

Mites, Lice, and Housefly Residual Spray

Dissolve one of the following in 10 gallons of water.

1 quart 5.7% Permethrin EC

-or-

1 pint 10% Permethrin EC

-or-

6 oz 25% Permethrin wettable powder

-or-

3 lb 25% Malathion wettable powder

-or-

10 fl oz 57% Malathion EC

Apply the permethrin spray to all ceilings, walls, roosts, nests, cracks, and crevices at the rate of one gallon for every 750 square feet. One application will be effective for at least three weeks. Malathion sprays are used as residual sprays to ceilings, walls, roosts, litter, and any dark location that is difficult to reach. Malathion sprays are applied at the rate of one gallon for every 500-750 square feet. Malathion is not recommended for fly control, but is usually effective when used in combination with body sprays for mites and lice.

SANITIZING SOLUTIONS

These solutions will reduce or eliminate slime and most disease organisms in water, drinkers, and water lines.

For Constant Use

1 teaspoon chlorine bleach (sodium hypochlorite) in 5 gallons of drinking water

This solution provides 11 ppm chlorine for sanitizing. The birds will drink the water and not be harmed by drinking it. They may need a short time to become accustomed to this solution. A more dilute solution with half the above level of bleach can be offered for a few days before using the 11 ppm solution. Clean the waterers thoroughly each day to get the best effect.

Weekly Sanitizing Rinse Solution

1 oz Chlorine Bleach in 6-8 gallons water

Rinse, soak, or expose equipment to this solution. Let stand at least one hour, then rinse with fresh water. This solution contains equivalent to 45 ppm chlorine. The procedure is most effective if conducted on a weekly basis. Remember, chlorine disinfectants are inactivated by organic matter. Clean all equipment well before using chlorine rinse solutions.

VACCINE ADMINISTRATION GUIDELINES

Clean waterers prior to vaccination. Deprive the birds of drinking water beginning one hour in hot weather and two hours in moderate or cold weather. Mix 3.2 oz powdered skimmed milk packet or equivalent into ten gallons of water. The milk neutralizes the small amount of chlorine or sanitizer present in many water sources.

Follow the vaccine manufacturer's mixing instructions for dilution level. Administer vaccine-water solution in the waterers immediately after mixing. All the vaccine solution must be consumed within 15-20 minutes if good immunization is expected.

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PUBLICATIONS

PUBLICATION NUMBER: P2800

Northern Fowl Mite Management

PUBLICATION NUMBER: IS1953

Poultry Farming and Neighbors: The Little Things Are Important

PUBLICATION NUMBER: P3036

Choosing the Right Breed for Your Backyard Flock

PUBLICATION NUMBER: P3034

Modern Broiler House Heating Systems

PUBLICATION NUMBER: P3012

Rotary Drum Composting of Poultry Mortalities

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December 16, 2016



Agriculture value is part of state's economy

Filed Under: [Agriculture](#), [Corn](#), [Peanuts](#), [Rice](#), [Soybeans](#), [Sweet Potatoes](#), [Poultry](#)

December 15, 2016

STARKVILLE, Miss. -- The estimated \$7.6 billion value of Mississippi agriculture increased by 1.8 percent in 2016, helping the industry retain its prominence in the state's overall economy.



Poultry, forestry lead Mississippi agriculture

Filed Under: [Agricultural Economics](#), [Poultry](#), [Forestry](#)

December 15, 2016

STARKVILLE, Miss. -- Poultry remains Mississippi's top agricultural commodity with an estimated value of \$2.9 billion, and it shows no signs of slowing down in 2017.

Forestry comes in a distant second with total farm-gate value of \$1.4 billion, according to 2016 estimates.

Mississippi State University Extension Service economists just released their estimates for the state's agricultural commodity values in 2016. The top commodities remain poultry and forestry. Soybeans remain in the third spot, dropping 1.7 percent to just over \$1 billion.



MSU researchers cool poultry with sprinklers



Filed Under: [Poultry](#)

August 26, 2016

STARKVILLE, Miss. -- The same principle that cools down kids running through a lawn sprinkler on a hot summer day is being tested on chickens in Mississippi State University's commercial poultry houses.

Tom Tabler, Extension poultry specialist with the MSU Extension Service, said keeping chickens cool in the summer is a life-or-death matter. Mississippi summer temperatures often exceed 90 degrees with humidity above 80 percent.



2016 offers bright hopes for state's poultry, eggs

Filed Under: [Poultry](#)

April 22, 2016

STARKVILLE, Miss. -- Mississippi poultry and egg companies are poised for expansions to fill the national gaps caused by the 2015 bird flu outbreaks in other states.

Tom Tabler, poultry specialist with the Mississippi State University Extension Service, said companies are looking for more broiler growers or additional barns on existing farms.

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