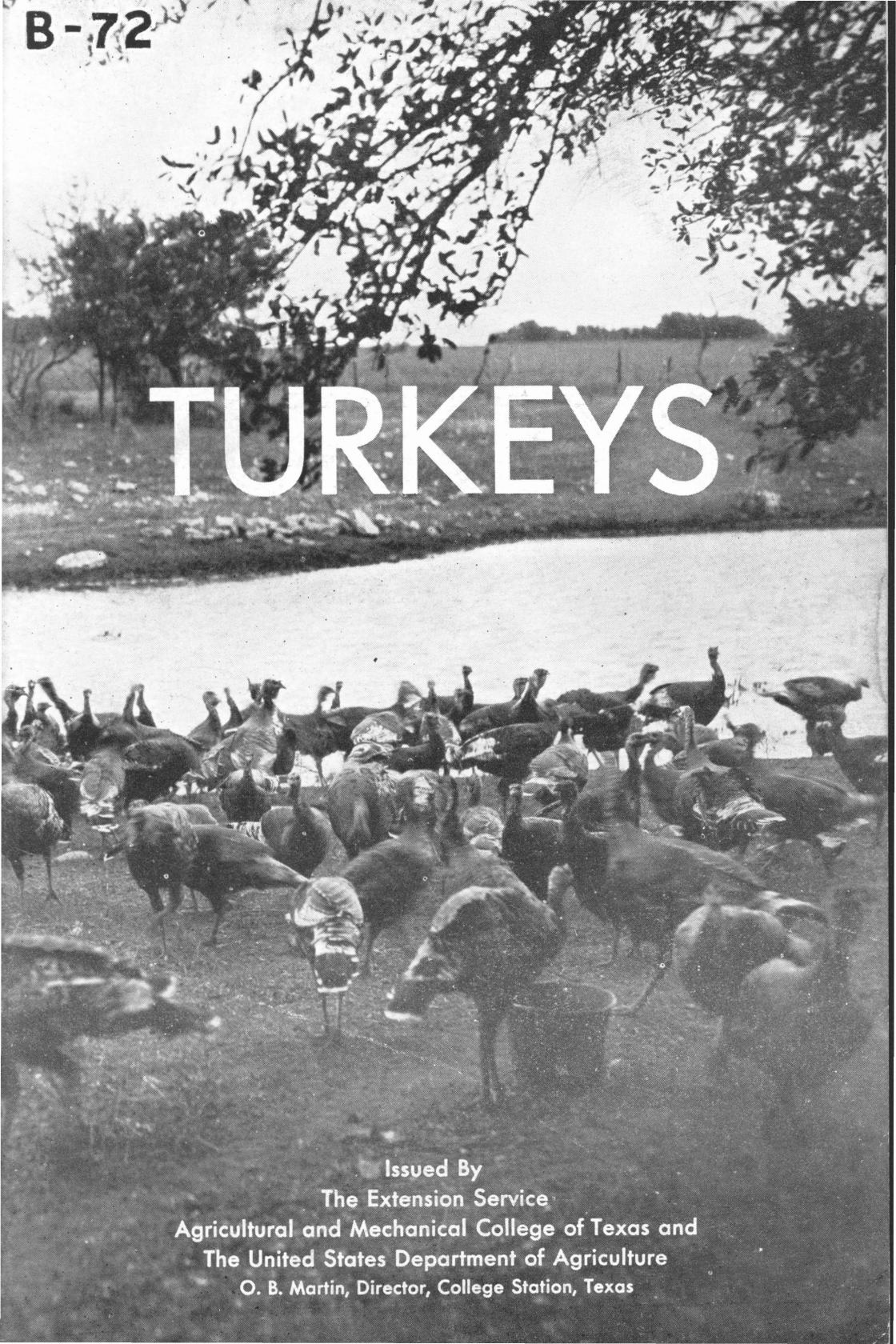


B-72

TURKEYS



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The Extension Service
Agricultural and Mechanical College of Texas and
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O. B. Martin, Director, College Station, Texas

*Let's
Get These Facts Straight---*

Turkeys are not naturally "wild" but are easily trained and controlled.

High fences are not necessary for controlling even Bronze turkeys.

Turkeys "run" long distances after food or water, and for no other reason.

Close confinement does not hurt turkeys. Lack of sanitation does.

Crooked breast is not due to roosting too soon, coyotes running the turks, or to any of a thousand other superstitions.

Onion tops, oatmeal, cornbread, curd, boiled eggs, and the like are not necessary, though they are fine to teach the turks to eat.

Turkey eggs are hatched successfully in incubators.

Poults are raised in brooders just like chicks—but require more care.

Turkeys and chickens should never run together.



TURKEYS

by

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and

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UNLESS you are willing to read and study the next few paragraphs carefully, there isn't much use of looking at the rest of this bulletin—not even the pictures. That is, unless you already understand all about why turkeys die and what causes crooked breasts and other “bad luck.” It is a little unusual to start off a discussion on turkeys by talking about intestinal worms but read on and see why.

When Dr. Tyzzer proved a few years ago that the disease causing most deaths among turkeys, called blackhead (but really heads have nothing to do with it) was carried by the small pin worms of poultry, an entirely new conception of

turkey raising originated. Since he also showed that black-head is a disease of young turkeys principally, older birds being more resistant, the big problem of rearing has become a matter of reducing pin worm infestation.

Chickens are the chief carriers of pin worms; therefore, Rule I—keep turkeys away from chickens or ground where chickens run. The worm eggs must pass outside of the chicken upon a warm, moist, shady place to hatch, and it requires seven to ten days for hatching; therefore, Rule II—keep moving to clean ground or clean up thoroughly every week.

All systems of raising turkeys are based on these two facts and possibly they need to be explained more fully before we go into detail about methods of raising.

Look at the diagram showing the life history of the turkey's public enemy number 1. Fortunately for us, his first cousin and public enemy number 2, the tape worm, leads a similar life and the same measures control both. Chickens, the innocent hosts to these racketeers, do their advertising, and act as distributing agents. But the pin worm egg is in turn host to the blackhead germ. This germ must be protected within the egg or it would die in a few minutes, while the pin worm egg itself would last only a short while without moisture, warmth, and shade.

Save trouble by destroying worm eggs while they are outside the turkey rather than trusting blindly in medicines. This requires real sanitation—meaning management more than sprays and disinfectants. True, all equipment must be kept clean, but the ground is the chief source of contamination, and it can not be cleaned that way. Frequent plowing, changing location often or both is far better.

There are many successful methods of raising turkeys. The two general systems outlined in this bulletin have proved practical under Texas conditions, and economical in the long run. Both are based on the same fundamental principles of sanitation. Neither is fool proof, but requires attention to detail and ample feeding throughout the summer for best results.

But first, let us discuss some things which are inevitable if we expect to be successful with any method.

Select the Breeders for Meat Type

TURKEYS are raised for meat purposes, yet very little breeding for market type of birds has been done. Most breeding up to now has been for color and for an arbitrary type having little or no relation to meat production. We are about 25 years behind other breeders of livestock and there is great need for trap nesting and pedigreeing turkeys. Hens in one flock in 1934 varied from 13 eggs to 83 eggs each during the laying season. Poor layers are usually late in starting so that a few weeks trapping in February and March may mean a considerable saving in feed bills besides tending to raise the average egg production of succeeding generations.

In the absence of any better means of selecting breeders, here are some common sense rules to observe:

Early hatched, well developed, quick maturing pullets and young toms are most desirable. Toe marking the different hatches is essential for accurcay in selecting.

Pullets usually lay earlier and more eggs than older hens, but good hens deserve being kept a second year. An old tom may be kept if he has given good results and is not too big and clumsy. If so, trim his spurs and toe-nails.

Never "swap" toms sight unseen just to get "new blood." It may be better to keep your own bird.

Select next year's breeders before Thanksgiving sales.

Pick strong, upstanding, alert birds that have a snappy walk and stand with legs wide apart. Then handle every bird to see that the back is broad and long, the breast is long, well rounded, and nearly parallel to the back and that the shank and thigh are short. Measurements on several hundred turkeys in many Texas flocks show that short legs do not mean light weight birds but are associated with early maturity.

Avoid crooked breasts and extra large birds. Large coarse hens are almost always poor layers and late maturing.

These standard weights should never be exceeded:

Bronze		All Other Breeds
Old tom	36	33
Yearling tom	33	30
Young tom	25	23
Young hen	16	14
Old hen	20	18

Managing Breeders

TURKEY hens like chickens require feed and care to lay the maximum number of good hatching eggs. Most successful turkey raisers worm all breeding stock about Thanksgiving time and begin feeding laying mash early in December. Turkeys will eat laying mash after being trained, but it may be necessary to keep them away from grain stacks or other sources of food.

A common fault is to feed the hens too much grain allowing them to go into the laying season too fat to lay well. Any good chicken laying mash will do. Here is a good formula:

Two hundred pounds grey shorts or finely ground wheat
One hundred-fifty pounds yellow corn meal
One hundred pounds meat and bone scrap
Fifty pounds alfalfa leaf meal
Ten pounds fine oyster shell
Five pounds salt.

Skim milk may replace some of the meat scrap in this ration. Provide oyster shell in open hoppers at all times. Feed the grain at night in limited quantities to prevent the hens from getting too fat.

Green feed is necessary to get good hatchability. Wheat, oats, barley, or any sort of young, tender greens will do. Swiss chard, collards, lettuce, rape, cabbage, or even green cured leafly alfalfa hay may be substituted.

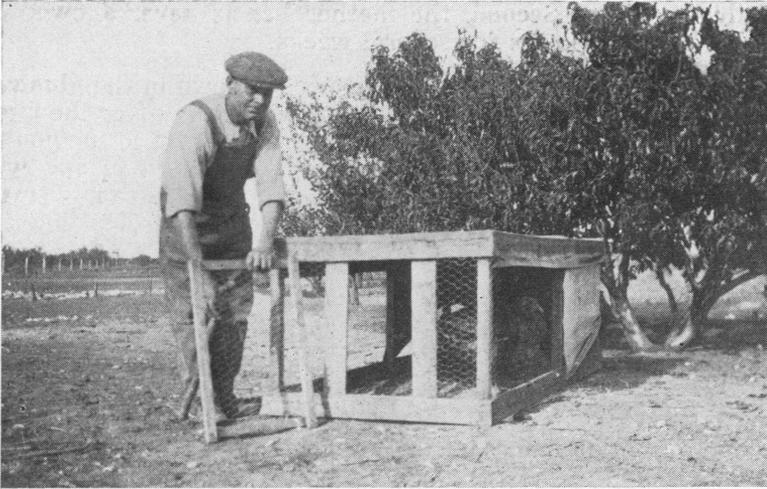
Turkeys do not require expensive houses or equipment. While resistant to cold they do, however, appreciate wind-breaks and sheds during wet, winter weather. A cheap shelter furnishing 8 square feet per bird is sufficient.

One young tom with 10 to 12 yearling hens or pullets form an economic unit. Older toms should be mated to fewer hens. Twenty hens in a quarter-acre pen with 2 toms used on alternate days works very nicely. It is always good insurance to keep an extra tom on hand. Use only one tom in a small flock at a time, but in larger flocks of 50 or more hens several toms may be run together.

Confinement forces the hens to eat the proper feed and makes egg gathering easier and surer. Turkey eggs are valuable and soon repay the cost of fencing the breeding pen.

Since most eggs are laid in the morning, penning the hens in a house until noon saves much trouble where no outside pen is available.

Broody hens are easily broken up by putting them in a wire bottom coop and feeding nothing but laying mash or by throwing them over the fence away from the flock.



A SIMPLE brood coop—inexpensive and easily moved every day or two.

Selecting the Eggs and Hatching

EGGs gathered daily and kept at a temperature of 50 to 60 degrees are most likely to give strong, healthy poults. Fresh eggs, never more than 10 days old and turned daily give better hatches. Small, misshapen, cracked, or dirty eggs seldom hatch. Eggs set after April 15 in South Texas or May 1 in Northwest Texas usually hatch poults that are trouble makers the rest of the season. They also are slower growing and require more feed, according to figures from North Dakota which show that late hatched poults ate 60% more feed to make the same amount of gain.

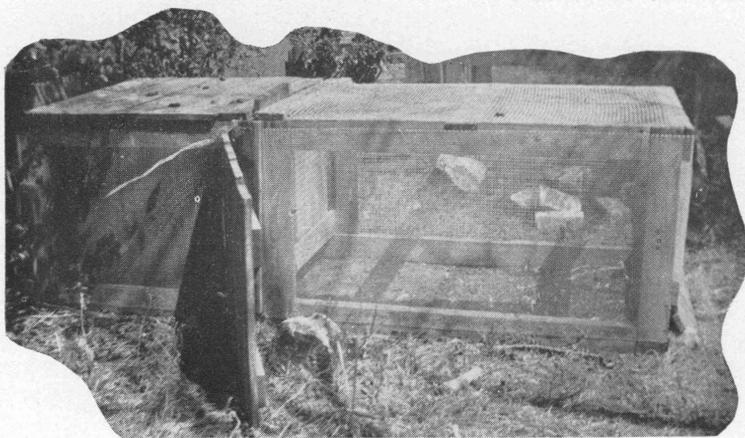
Hen hatching is still commonly used, but commercial hatching has increased over 300% since 1930. Hatcherymen are learning to set turkey and chicken eggs separately and provide less temperature and more moisture for the turkey eggs.

Coop Method of Brooding

MOST TURKEYS in Texas are still raised in small flocks, where the simple hen and coop method is still the most practical and economical. Some new ideas have been developed, however, since the recent discoveries on sanitation have shown us how to avoid trouble. First, everything must be easily movable. Second, the mother hen is never allowed to range with the poults for several weeks.

The hen is confined to the wire coop shown in the illustration while the poults are allowed to range freely after the first few days. Feed and water vessels are set near by so the poults never wander away very far. They do not need to and will not go far even without fences. If varmints are bad, a small temporary enclosure can be made with wire hurdles tied together at the corners.

The construction of the coop may vary according to the kind of weather usually experienced, but in South Texas may be very simple. In any case, a light coop is essential because every third day it is moved several steps away on fresh ground. Feed and water troughs should be



THIS brood coop is designed to protect the poults from varmints and weather. Move it often.

moved daily. Placing the coops on high ground such as terraces avoids the chances of drowning the poults during sudden rain storms. They soon learn to roost on the coop and take to small movable "sawhorse and pole" roosts at 5 to 6 weeks old without any trouble.

Remember the reasons for raising them this way: first, to keep them on clean ground and avoid diseases and parasites; second, to control the young turkeys and train them to stay where put; third, to make it easier to find them when sudden emergencies arise.

The mother hen may be kept in this coop until the poults are ready to go on the permanent roosts or she may be let out in the afternoons for short periods if watched closely. Of course, this means that the poults must have plenty of feed easily available or they will run themselves to death looking for it.

By shifting from one field or pasture to another, however, and having growing mash and water always nearby they will not go far. Each bird will require only about 25 pounds of growing mash during the growing season in addition to grain at night and all the bugs, seeds, and green stuff they can find. Compared to the old haphazard way of allowing the birds to run wild, the advantages of the coop method of brooding may be summed up like this:

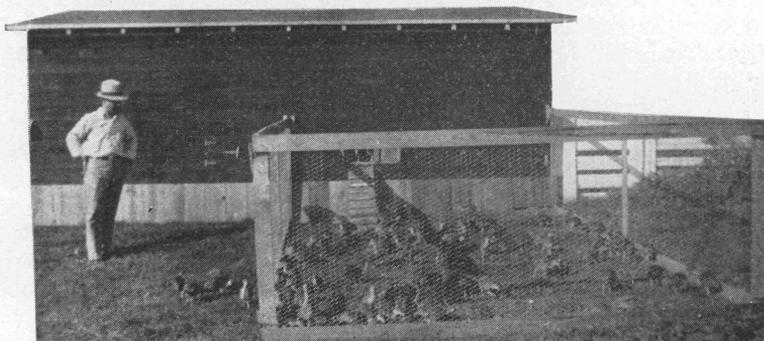
1. Much less labor of finding eggs and taking care of growing poults
2. No fuss with neighbors about gathering the wrong crop
3. 80 to 90% raised instead of the usual 35 to 50%.
4. Less worming required—one time instead of 3 or 4
5. Heavier, quicker matured birds which grade higher
6. Costs a little more but makes much more.

A Plan For Large Units

Where several hundred turkeys are raised, it is much easier and more economical in the long run to have some labor saving equipment. A brooder house, a range shelter possibly, and some movable roosts are all that are necessary except

the usual feed troughs, water vessels, and small cleaning tools and plows. The same plan of strict sanitation used with the hen and coop method is easily carried out if everything is built to be moved.

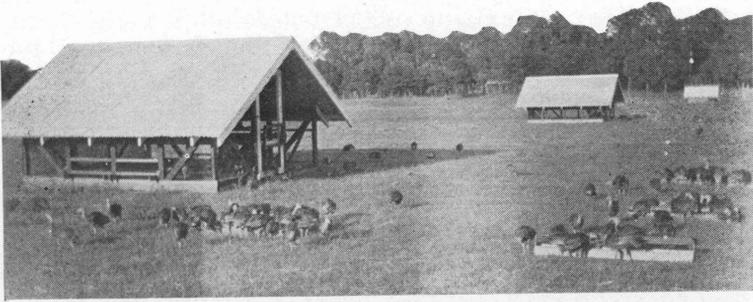
Remembering that a week is the maximum time for poults to remain on the same ground, it is easy to figure out several ways of brooding to accomplish this. One plan makes use of three chicken wire hurdles four feet high and twelve feet long. These are arranged as shown in the picture and moved each week to a different side of the house making house moving necessary only once for each brood. Where the house is not movable, this plan also can be used by turning



SHIFTING the temporary pen to different sides of the house each week keeps the poults on clean ground.

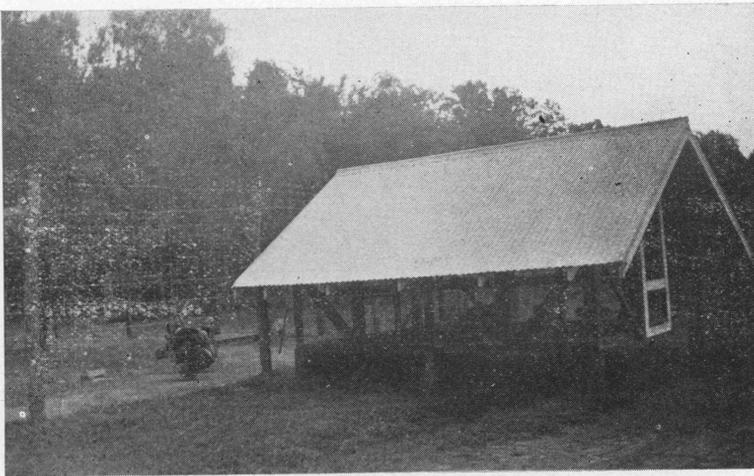
over the ground after each move of the hurdles. Others prefer a wired-in sun porch 12x12 feet adjoining the house with several inches of coarse gravel which allows the filth to filter through. Turkeys have been brooded successfully for several weeks in battery brooders or feather brooders. The more artificial conditions are, however, the more care is necessary during and after the brooding period.

A 12x12 foot house with a 500 chick size brooder will accommodate 175 poults comfortably. If more are put in it, they usually "die down" to this number or less. Young poults do not learn to eat readily; so it is wise to give them a light feeding of a very palatable feed the first, certainly not later than the second, day. Liquid milk instead of water for the first feeding is excellent. See instructions under feeding.



MOVABLE range shelters make sanitation easier. Be sure to move them each week or two.

When three or four weeks old (or older depending on the weather), poults take to roosts readily if put by hand upon low, wire covered frames for a night or two. These should be only a few inches off the floor and have a sloping front with wire preventing any access to the droppings. Then they take naturally to roosts either in a range shelter, or if this step is omitted, to the large roosts at 8 to 10 weeks of age. Some prefer to "harden off" the six weeks old poults by letting them roost for a few weeks in a shelter such as shown in the illustration or any kind of open shed type house.



A RANGE shelter also may serve as a house for breeding hens.

Raised in this way, turkeys are very tame and easily controlled. Large flocks up to 2,000 birds often have a herder who lives with them day and night, sleeping in a tent near the roosts and driving the flock across grain fields during the cooler parts of the day. The entire camp location, roosts, tent, and all is changed every week or two for sanitary reasons as well as to keep near the grain fields as they are used.

Feed Wisely and Well

TURKEYS well started may save a month's feed bill later on by finishing more quickly. Since feed is the largest item of expense, it is doubly important that the poults learn to eat early and get all elements necessary for rapid growth.

It takes only two pounds of feed to grow the first pound of meat, but nearly ten pounds to grow the last pound. The average is about four pounds feed per pound of gain. Much of this, of course, is picked up on range.

First Six Weeks

Any palatable feed may be used to teach young turks how to eat. Oatmeal, cornbread crumbs, curd, boiled eggs, and many others are old favorites. All of these are eaten more readily when mixed with chopped tender green feed of any kind and fed fresh every few hours.

None of them contain all the essential nutrients in the proper proportions for normal growth; so it is always wise to begin feeding a starting mash either at first or within a few days at least.

Most commercial growers simply mix the mash with finely chopped greens and sprinkle on sacks spread over the litter as the very first feed. After the first day or two the dry mash is left in troughs all the time with water near-by.

Any good chick starter will do, although the tendency now is toward a higher protein ration for turkeys. This can be done by feeding liquid milk along with the chick starter, or by adding more dried milk to the mash itself. Many growers have found it practical to use a ready mixed mash for starting, but for those desiring to use a home mixed ration, the following formulas are among the good ones.

Item	Starting Mash		Growing Mash	
	Fed with Milk	Fed alone	Fed with Milk	Fed alone
Ground corn or grain sorghum	55	50	35	25
Wheat Bran	—	—	20	—
Wheat Shorts	20	20	20	—
Ground Wheat	—	—	—	25
Ground Oats or Barley	—	—	—	20
Meat and Bone Scrap	6	6	5	10
Dried Skim or Buttermilk	6	10	—	—
Cottonseed Meal	6	6	10	10
Alfalfa Leaf Meal	5	5	5	7
Oyster Shell	1	1	2	2
Bone Meal	—	—	1	1
Salt	1	1	1	1

Plenty of green feed from start to finish will cover up a lot of our ignorance about the science of feeding. Green alfalfa is best, but sudan is most common because it is so drought resistant. Sudan should be kept grazed down closely to avoid getting too tough. In a pinch any kind of green leafed garden vegetable will do.



TURKEYS, like humans, eat and drink all at the same time—provide plenty of feeding and watering equipment.

Finishing on Range

Turkeys get ripe like watermelons. There must be no pin feathers or the bird does not pick clean and is classed as unripe. To grow feathers requires protein feed over a long per-

iod of time, and is one of the main reasons for feeding a high protein ration throughout the growing period.

There is no definite 4 or 6 weeks fattening period, and range turkeys should never be closely confined for force feeding. Gradually increase the proportion of grain fed as cooler weather comes on until it exceeds the amount of growing mash eaten. Some prefer to grind the extra grain and mix it in the mash, thus making a so-called "fattener" which can be wetted with milk and fed three times daily for a final finishing touch. Either method is good, but be sure you don't wait until fall to grow good turkeys. It isn't done that way.

Market Only Finished Birds

IT is not necessary to rush the turkey crop on the earliest market for the Christmas and January markets are usually as good as or better than the Thanksgiving. Wait until the birds are free of pinfeathers. Some will finish more quickly, so at selling time divide the flock into three groups; (1) mark the most mature birds to save for breeders; (2) sell the other finished birds; (3) save for further feeding small or "pin feathery" birds.

Turkeys are easily scuffed and rough handling may lower the value several cents a pound. A small catching pen or even a simple wire seine makes catching much simpler. Never tie or lock the wings nor tie the legs above the feather line.

Haul in coops either low enough to force the birds to sit or high enough to allow them to stand without rubbing their backs. Hold off solid feeds for 24 hours before selling, or soft mash feeds for 12 hours, but give plenty of water. "Cropy" birds are docked in price because of the loss in weight, time, and quality during the dressing operation.

Turkey producers can never expect the unreasonably high prices of a few years ago since turkey meat is now a competitor of other staple meats the year round. Low production cost is one answer to this new problem, but the Texas turkey grower will get a higher price regardless of economic or competitive conditions when two things happen:

- (1) Payment to the farmer is made on a quality basis so that the producer of finished turkeys will be rewarded; when quality is paid for, it will tend to raise the average quality and price of Texas turkeys;

- (2) General adoption of standard U. S. grades of dressed

turkeys, causing buyers in consuming centers to bid on car-loads according to their value instead of geographical origin as at present. (Good turkeys from Texas are most frequently sold under some other state's brand to avoid this "stigma" of origin and the extra price is not reflected back to the producer.)

Turkey Troubles

THE area of turkey production has constantly moved westward to new clean ranges as the old ones have become contaminated. Texas must in turn give way to others as the leading turkey producing state, unless we can control the ever increasing death toll.

A day of sanitation before may be worth a hundred dollars of "cure" after. No medicine can do more than assist nature, even when used properly. Here are some common sense rules for sanitation:

Keep turkeys separate from chickens or ranges used by them recently.

Use only healthy breeding stock.

Keep free of lice, mites, blue bugs, and worms. Management is better than medicine for any of them.

Brood on new ground and keep moving to new locations often.

Keep poults away from older turkey flock.

Feed everything in clean troughs. Scald milk vessels frequently.

Cut open and examine dead birds, then burn them.

Avoid late hatched birds. They usually cause more trouble than they are worth.

Intestinal Worms

Worms are the root of all evil almost with turkeys. A flock managed as suggested and kept reasonably free of tape and pin worms seldom has other troubles.

Summer colds, roup, and blackhead, are directly traceable to worms in most cases. Any unthrifty condition of the flock is good cause for suspicion and may be verified by sacrificing a bird to split open its intestines where the worms are usually not hard to see.

Tape worms cause most of the trouble and are white, flat, and jointed. Different species vary from microscopic in size to a foot long, and are found attached to the inside lining of the intestine.

Round worms are not common in turkeys, but may be found floating free in the intestines. They are long, round, pointed, and stiff.

Pin or cecum worms are carriers of the fatal blackhead germ, and are seldom found in turkeys without this disease also showing up. They live in the ceca or blind pouches alongside the intestines and are like very small round worms. Medicine or other treatments are not effective in control. Complete segregation from chickens and frequent moves to clean ground are the only practical control measures.

Treatment for worms is a last resort. It is usually expensive and troublesome and does little good anyway unless proper sanitary measures are used afterwards to prevent reinfestation. Spend this time moving to clean ground, plowing, and cleaning up.

There are several good worm capsules on the market which are satisfactory. Before buying inquire from successful turkey raisers, or your county agent. Use each according to directions.

Recently plain white gasoline (not colored) has proved effective and cheap. A teaspoonful up to a tablespoonful, depending upon size of the bird, is given directly into the crop being careful to avoid getting any gasoline in the wind pipe. Do not do this within two weeks of marketing time or the meat may taste of gasoline.

Blackhead

Blackhead shows up in the intestines and liver and not necessarily on the head. Foamy, sulphur, or green droppings and a droopy, sleepy appearance are characteristic symptoms. Ulcerated ceca and a spotted liver are positive indications. Young birds may die too quickly to develop these lesions, but old stock usually linger several days or weeks and show most of these symptoms.

Apparently blackhead is not contagious except through droppings. The pin worm egg voided in droppings carries and protects the germ until it is picked up by the turkey in feed or water. Nearly all chickens carry plenty of

pin worms but are very resistant to the disease. Complete segregation from chickens or ground ranged over by them within a year is the best preventative. No practical cure is known.

Colds And Roup

Low vitality, whatever the cause, may result in colds and roup. Worms are most often the predisposing cause and their removal usually remedies the condition. Summer colds and roup (puffed face, not the smelly kind) often appear during dry hot summers due to a lack of green feed.

Abundance of green feed or a vitamin A substitute not only stops these nutritional ailments, but helps to control the regular odorous kind of colds.

Very young turkeys often get sealed eyes and runny nostrils from overcrowding or piling up at night. They get sweaty, then cool off too quickly. A strong disinfectant sprayed over them at night will cause sneezing and help check the trouble. A good spray can be made of two parts formaldehyde, 1 part glycerine, and 7 parts water. A dose of baking soda, 1 pound to 400 pounds of turkey, fed in a wet mash tones up the system also.

Individual severe cases may need the nostrils cleaned out and several drops of 15% argyrol or iodine applied.

Fowl Pox

This disease is widespread and especially serious in turkeys. It can be recognized by the scabby sores on the head and caruncles, and sometimes cankerous growths around the eyes and in the mouth and throat. Treatment by scraping off the nodules and painting with iodine is about the best but is troublesome and slow acting. Where outbreaks have occurred in previous years, vaccination of the 4-6 weeks old poults by new feather follicle method is cheap and a sure prevention.

Limberneck

Eating rotten meat produces ptomaine poisoning, called limberneck because of this distinctive symptom. If the bird lies limp and the feathers pull out very easily, it is true limberneck. First, remove the cause to prevent more cases. Second, dose affected birds with $\frac{1}{2}$ to 1 grain strychnine tablet to stimulate heart action, and follow by a tablespoon of castor-oil to absorb and expel the poisons.

Big Craw Or Sour Crop

This trouble is quite frequent in dry years. It is not a contagious disease but is caused (1) by eating too much fiber or indigestible material which stops up the outlet; (2) by drinking filthy water which causes souring.

In either case, fever causes the bird to drink more water which causes a pendulous crop. Treatment in advance cases is not very effective. Beginning cases can be treated by emptying the crop through the mouth or if necessary, making an incision in the lower side which is sewed up again. Washing the crop out with soda water counteracts the sourness. Keep the birds up in a coop or small pen without food for 24 hours and feed only soft food for several days. Often a cloth sling tied over the back supports the crop until the muscles can contract to normal again.

Crooked Breast

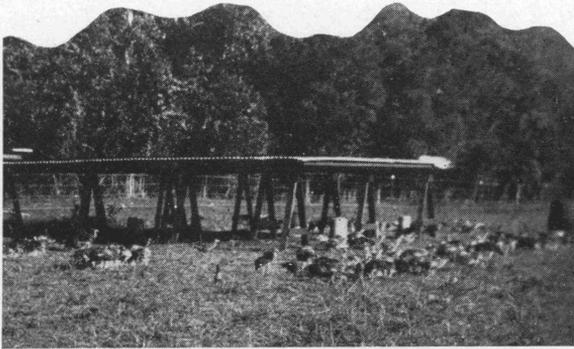
Crooked breast is caused mainly by faulty feeding, although sharp edged roosts, low vitality, and other things aggravate the condition also.

Good stock kept free from worms and fed bone meal and oyster shell seldom have such trouble.

Feeding plenty of milk assists in supplying the necessary mineral. Small flocks often pick up enough mineral naturally on the range, but large flocks frequently do not find enough to go around. Toms suffer more than hens probably because they have larger skeletons and require more mineral.

Theft

The most effective prevention of theft is by tattooing the web of the wing with an identifying mark. The job is easily and quickly done with a simple tattoo instrument sold by any poultry supply house or magazine. Organization of anti-theft associations with brands registered in the county clerk's office, warning signs posted, and rewards offered for conviction give the new state law some teeth. Further information will be supplied upon request.



ARTIFICIAL shade is easily built. Make it 5 to 6 feet high and large enough for all the birds.

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