

## Selecting Your Best Turkeys for Breeding

### Chapter 3 – Evaluating Breeding Stock

“Compare apples to apples” when evaluating breeding stock. Until a breeder becomes *very* familiar with the breed, it is best to evaluate birds in groups of the same age, sex, and variety. Approaching breeding stock evaluation in this systematic way will facilitate a more objective comparison between individual animals. As breeders grow in experience and knowledge, and as their hands and eyes begin to recognize quality, this approach may be relaxed. Know that master breeders spend decades developing these skills, and a systematic and orderly approach to examining each bird will help these skills develop.

You can first assess your hens at 24 weeks of age and your toms at 30 weeks of age or older. This allows you to assess them when they have reached their mature height. Evaluate all birds of the same sex at once and preferably the hens before the toms. The smaller hens will feel tiny when compared to the toms. Evaluating the girls first will help avoid discarding good specimens that just don't compare in size or stature with the toms.



*Feeling for flatness of back.*

#### ***Flatness, Width, and Angle of Back***

The back of the bird must be consistently wide, smooth, straight, uniformly broad, and free from injury or deformity. A desirable wide back carries through from joint of wing all the way back to tail assuring that hens have ample room for reproductive organs and good egg production potential. A wide back indicates a wide breast.

A straight, flat back is an indicator of correct skeletal development. Cull birds with crooked backs. A straight, flat back with good length and width also makes for a more attractive carcass on a table bird.

The carriage of the birds should be upright and balanced at a 45° angle to the horizontal of the

ground. This ensures that offspring have proper body carriage that will enable them to breed naturally. (See pictures in Chapter 2 on pages 9 and 11.)

#### ***Heart Girth or Spring of Ribs***

The circumference of the body must be large, round, and open. A large heart girth is an indicator that there is ample space for large, healthy internal organs, maximizing the bird's potential for growth and development. The girth can feel larger than it actually is if the bird's legs are held slightly forward during the assessment. For valid results, compare heart girth only between birds of the same variety, age, and sex, and be sure to measure each bird in the same place.

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### *Body Depth*

The body from the spine to the keel bone should be deep. As with heart girth, the depth of the body indicates whether there is ample or restricted space for internal organs. Adequate depth gives birds an advantage for internal organ development. This factor also contributes to carcass appearance for the table bird. Again, assess each bird in the same place on the body, and compare only between birds of the same variety, age, and sex. Be sure that fleshing is ample to cover the skeleton so the bird doesn't appear thin.

### *Breast and Keel*



*Feeling for straightness of keel and fleshing.*

The breastbone needs to be straight, parallel to back, and extend back to or between the legs when the bird is suspended. In toms, the rear tip of the keel bone turns in slightly toward the back. Examine the breast for overall fleshing. The breast should be broad, smooth, and well-fleshed to the tip of the keel. This should be accompanied by plump, well-fleshed drumsticks of appropriate size in proportion to the body.

The breast on the birds must be free of knobs or calluses. Fleshing of the breasts of hens optimally extends slightly beyond the edge of the keel, leaving a crease running along the length of the keel instead of a boney ridge. Toms have more prominent keels so the flesh will not completely cover the keel as it does with the hens. To judge ideal tom fleshing, place the bird's keel in the

center of a human hand, with the head running parallel to the fingers. Slowly close the hand over the keel covering the sides. A well-fleshed tom should have fleshing beginning where the fist knucklebones are located.

### *Legs*

Because of the heavy weight attained by adult turkeys, they require sound legs in order to carry themselves efficiently and to breed properly. Overly-short (like a Broad Breasted White turkey) or overly-long legs can cause mating and fertility problems.

Straight and strong legs are paramount in selecting birds with good breeding potential. To test this, begin by having the bird run or walk. (This point is very important!) A well-constructed bird will move smoothly with its legs placed directly forward as it walks. They must be centrally positioned under the body for optimal balance. The legs should not be thrown out sideward and the birds should not waddle.

The shanks of the legs are approximately the same width as that of man's thumb (about 4" circumference.) The thickness of the bone is important as it is crucial to the proper support of the body. In the case of Royal Palms, they may have smaller shanks which are appropriate for their naturally smaller size.

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*Breeder Danny Williamson measuring length of keel compared to length of shank.*

Cull any birds with leg deformities. Severe deformities will be easy to identify but minor deformities can only be detected by observing the birds as they move.

Compare the length of keel to the measurement of the leg shank from hock (knee) to ankle. These should be approximately the same.

**Shorter keel → shorter shank → short thigh**

This results in smaller drumsticks and decreased ability for male to mate successfully.

### ***Rate of Feathering and Maturation***

The rate of feathering is an indicator of the rate of maturation in a bird. Individuals that mature early (22-28 weeks) will produce offspring that will be more likely to mature in timely manner for the holiday market. In order to look for feather development, part the feathers and look for signs of pinfeathers. A mature bird will have few or no pinfeathers and thick, cream-colored skin over the entire body. Cull slow maturing birds.

With normal growth, an 8 week old poult will “get its head.” This means the poult will have lost most of the down from its head, producing the characteristically clean turkey head. From 8-20 weeks the birds are always growing new feathers with new sets coming in at 8 weeks, 12 weeks, and 16 weeks of age. By 24 weeks, pin feathers will have emerged and they won’t be difficult to pluck. By 28 weeks of age, all of the new feathers should be in and completely grown. It is interesting to note that on the wings, baby feathers are pointed and adult feathers will be more rounded in shape. Select against late feathering as these birds will be slower to develop than the fast feathering birds.

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### *Meat Status*

A tom “puts his breast on” between 16-22 weeks, meaning the pectoral muscles develop. Cull birds if their breast develops later than 22 weeks. The Beltsville Small White turkey will mature 2 weeks faster than the other varieties.

Under normal conditions, a bird should reach a degree of maturity suitable for marketing between 24-30 weeks for large- and medium-sized varieties and between 22-26 weeks for small-sized varieties. Use these same dates when selecting breeding stock. With Beltsville Small Whites, both males and females should reach market at 20-24 weeks.

### *Size and Weight*

Birds should be the proper size for the variety, as described by the American Poultry Association *Standard of Perfection*. Examine the breed standards before assessing size and weight of birds. Rate of gain should be consistent with achieving the standard weight for a young bird according to these standards.

<b>Turkey Variety</b>	<b>Young Tom Weight<sup>2</sup></b>	<b>Young Hen Weight<sup>2</sup></b>
Beltsville Small White	17 pounds	10 pounds
Black	23 pounds	14 pounds
Bourbon Red	23 pounds	14 pounds
Standard Bronze	25 pounds	16 pounds
Jersey Buff <sup>1</sup>	21 pounds	12 pounds
Midget White <sup>1</sup>	13.8 pounds <sup>3</sup>	8.2 pounds <sup>3</sup>
Narragansett	23 Pounds	14 pounds
Royal Palm	16 pounds	10 pounds
Slate	23 pounds	14 pounds
White Holland	25 pounds	16 pounds

1- not a standard variety

2- weight of a bird under one year of age, as defined by the APA *Standard of Perfection*

3- weight at 20 weeks

### *Health and Vigor*

Birds should be free from defects, deformities, or signs of disease or weakness. They must possess good physical strength and have sufficient energy to actively forage. Birds with poor vitality are likely to have offspring of poor vigor. In other words...you will get only what you tolerate in your flocks.



*Newly hatched turkey poults.*

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### *Reproduction*

Hens are largely evaluated by the quality and quantity of their eggs. This is a heritable characteristic and worth paying attention to for obvious economic reasons. Hens should have good egg production, producing 60% of their eggs within the first 13 weeks of lay. The eggs themselves must have consistent quality in shell thickness and shape. At least 80% of the eggs are expected to be fertile and fertile eggs should have a minimum hatchability rate of approximately 75-80%.

Some breeders select for aggressive males as these are most driven to mate. It is then advantageous to select for receptive hens that kneel for the toms, reducing the chances of becoming injured while mating. With particularly large toms it may be necessary to use “saddles” on the hens to protect their backs from becoming injured by the toms’ toenails and spurs while mating. To use a saddle, the wings of the hen are placed through side “arm holes” of the saddle so the device is securely resting across the back of the bird. At the end of the breeding season, evaluate hens for their overall condition and vitality.

Choose hens that reach sexual maturity by 28 weeks of age and are ready to breed at the appropriate time of year. Turkeys do have some breeding seasonality which is variable with latitude and weather conditions. For example in Central Kansas the following varieties will, on average, come into lay during these months:

- Beltsville – January/February
- Bronze – February
- Narragansett – March
- Bourbon Red – April
- Black – late March/early April
- Slate – late March/early April
- Royal Palm – April or later



*A Slate turkey hen*

### *Livability*

Evaluate the overall livability or survivability of the flock by selecting for health and vigor in all of the birds. This also ties in with selecting for longevity within the flock. Hens are expected to live 7-8 years with the best years for reproduction being year 2-3. Egg production will drop for the hens at 5-6 years of age. Toms are expected to live for 8-10 years with their most productive years between 2-4 years of age. The tom’s sperm count begins to drop at 4-5 years of age.

### *Selection Points Checklist for Breeder Birds*

Genetics control the shape, size, color, and performance of the turkey. Over time your birds will become more productive and healthier if great care is given to the selection of breeder birds. Here is an overview of the key points for evaluation:

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### 1. **Balance** ✓

This should be a primary selection point for the bodies. The balanced bird is successful at reproducing, and produces a better-looking market bird. Balance is evaluated while the bird is standing and walking.

- Back at a 45% angle to ground
- Broad, deep, compact with upright carriage

### 2. **Breast** ✓

Check the breast first. Using your free hand, and with the resting turkey between your legs, head downward, or laying on its side on a table. Check for:

- Width
- Length of keel
- Knobbiness
- Balance
- Straightness of the keel

### 3. **Back** ✓

Place your hand across the turkey's back from wing joint to wing joint. Check for:

- Straightness
- Width
- Back and keel parallel to each other

### 4. **Legs and Feet** ✓

Check size and plumpness of drumsticks and thighs where the fleshing of the thighs should be full and round. Check shanks, hocks, and feet for the following:

- Toms should have a keel of 7 inches and the length of the shank from hock to foot should also be approximately 7 inches
- Hens should have 4-5 inch keel and the shank should be also be approximately 4-5 inches long
- Shanks and toes should be straight and strong
- Legs should be centrally positioned under the body
- Check for defects

### 5. **Watch it walk** ✓

The way a bird moves will help identify minor defects that might not be detected during a physical evaluation. Check for:

- upright carriage
- natural, unimpeded gait
- normal legs and hocks

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### *Faults and Defects*

Watch for and CULL the following:

#### *Body*

- Knobbiness is a common defect in nearly all turkeys. True knobbiness is a condition where the flesh cuts away from the front and sides of the forward tip of the keel bone (genetic)
- Crooked back or roachback
- Narrowness especially over the ribs and especially in the hens (Remember, large hens produce large breasted gobblers!)
- Roost dent is an indentation in the keel just behind the forward tip of the keel, where the keel bone has rested against the roost. Though undesirable, it is a husbandry fault and not nearly as serious as a knob which is a genetic fault.
- Short keels (under 7" on tom and under 5" hen)
- Curved or crooked keel (genetic fault)
- Pendulous crop (genetic fault)
- Breast blister (husbandry fault)
- Off-color feathers. Males having female colored feathers, and females with male colored feathers should be culled. This can indicate some hormonal problems that you would not want to keep in your breeding flock. (genetic) Note: hens go through menopause later in life and may take on male coloration. This is normal.
- Cull underweight as well as overweight birds. Again, go to the breed standard for guidance in making this determination.



*A Bronze tom with a roached back.*

#### *Legs and Feet*

- Lack of bone – they need to have good heavy bone to carry their body
- Joint weakness
- Bowed legs
- Legs too short or overly long.
- Legs set either too close together (knock kneed) or too far apart
- Waddling
- Splay legged (tendency toward is genetic, can also be husbandry or a mycoplasma)
- Don't balance the body well

For the producer, healthy productive birds not only produce superior table birds but also translate into better profits through the sale of purebred breeding stock. Remember that not every bird is meant to become a breeder and only the top 10% typically make the cut. Careful attention to detail ensures that these birds are identified and incorporated into a successful and potentially lucrative breeding program for the farm.