


Exhibition Poultry

The #1 Internet Publication For Information On Showing & Breeding Exhibition Poultry

Volume 12 No. 3 • <https://www.ExhibitionPoultry.net> • May/June 2023

 **Nutrena**
What's inside counts.

T&M Sumatras (Tom Kernan & Mary Lewandowski) with Elliott Page at Dayton Feather Fanciers Show April 30, 2023. This three took home Junior Champion AOSB, Open Champion AOSB, and Open Champion AOCCL awards, all with Sumatras bred by T&M Sumatras.



Chris & James

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Exhibition Poultry

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Exhibition Poultry Magazine®

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Exhibition Poultry Magazine

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From the Editor . . .

I believe we have some really good content this month. We have a few guest contributors, plus a couple of short pieces I wrote myself. All are worth a thorough read and should be thought provoking, and hopefully informative.

I love our photo contests and the submissions from members of our EPMag Facebook group. Everyone is really honing their photography skills and giving us plenty of good photos to include in articles as we need them. Please keep them coming. Photo credits are given as always and I love sharing your birds and including them in the free online issue plus the printed copy which is mailed to our subscribers.

One article that did not make it into this issue was the one I have been working on about genetic tests that are available to those of us who breed chickens. I have been using IQ Bird Testing out of Florida for well over a year now and they do some inexpensive tests that really do help us out as poultry breeders. Although they *specialize* in parrots and related species, They do offer three key tests for the rest of us. One is a test for blue egg genes, the second test is for recessive white, and they also will sex test any birds that you are unsure of, and I believe that last test is just \$12. I have been using the blue egg gene test to try to find the last of any hidden single comb genes still in my flock.

Those single comb genes will really mess up a good pea comb and are ever present in the Araucana breed. Luckily for Araucana breeders, there is a tight linkage between pea comb and the blue egg gene. So If my birds are tested as homozygous for the blue egg gene (\$20 testing fee) I can be almost certain they are also homozygous for pea comb. I plan on testing 100% of my breeders by this Winter. I am still working on that particular article and it should be in a future issue. You may want to Google 'IQ Bird Testing' and give their services a try (and no, they are not paying me to say that).

To close . . . It's May! Happy hatching!

Ann Charles, Editor



April 2023
ABA Happenings

Happy Spring. 2023 is shaping up to be an exciting year for the poultry hobby. The ABA is celebrating a big year in Columbus Ohio with the 150 Year Anniversary. The ABA will be there with a table, so please stop in to say hello, renew your dues, and to see what we have to offer. This is a three-day celebration, so be sure to take your energy pills.

April 1st marks the start of a new ABA year and a new ABA Board of Directors.

Welcome All: ABA President, Bill Patterson, MI/ABA Vice President, Matt Lhamon, Ohio (also serving as an ABA Project manager) ABA Directors: District Directors: D1 – Steve Stanulonis, CT; D2 – Robert Bentley, NY; D3 – Emily Shoop, OH, D4 – Tom Roebuck, Jr., VA; D5 – Mike Sayre, OH; D6 – Amy Gabbard, MI; D7 – Chad Satterfield, SC; D8 – Brett Thompson, AL; D9 – Jackie Koedatich, FL; D10 – Gary Rossman, WI; D11 – Jacob Bates, AR; D12 – Bob Choate, TX; D13 – Kyle Tripp, AZ; D14 – Timothy Sheets, WA; D15 – Donald Barger, CA; D16 – John Beamer, Ontario. Karen Unrath, ABA Sec-

retary - Michell Lynch, Membership and Show Sanctioning Coordinator – Kevin Unrath, Manager of Order Shipments.

Please watch for updates on committees. These will be up-

date as necessary on our website (Bantamclub.com)

The ABA national Meet will be held in Shawnee, Oklahoma. For more information, contact Wade Walker at

Cindy Rusk
WINDGATE FARMS

Raising Call Ducks

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PASTEL
BLUE FAWN
BLACK & BLUE BIB
SNOWIE
MAGPIE

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BLACK
NUTMEG
GREY
BUFF
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wt.walker@yahoo.com for more information. Watch the Poultry Press for more information too.

I have been very busy this year reformatting the starred win file into individual files. These are posted on our website under Starred Wins — American Bantam Association (bantamclub.com). You can look for your wins and download them anytime. If you do not see yours, no worries — this is a project and I expect to have all of them uploaded by July 1st. Send me a friendly note that you are looking for yours, and I will try to speed that along.

I am very excited to announce, as of this date, the following ABA members have

earned their status of

Master Exhibitor 2022

Linus Clark, TX, Tim Lindenberg, TX, J&B's Illini Cornish, IL, Nicole Cox, NC, Marty Abrahamson, NC, Jerry DeSmidt, WI, Nate & Dan Estlack, TX, K & D Bantams, AL, Cindy Rusk, MO, Ken, April & Brody Miskimon, IN, Swamprun's Poultry, VA, and Clint Carter, UT.

The following are being recognized for

ABA Master Breeder in 2022

Bob & Claudia Choate, TX — BB Red and Birchen Modern Games; Tracy Hill, TX — Blue Wheaten OE Game;

J & B Illini's Cornish, IL — Dark Cornish; Dwayne & Melody Jonas, Goldthwaite, TX; Brett & Adam Thompson, Thompson Ban-

tams, AL — BB Red Modern Game; Cindy Rusk, MO — White Call Duck; Bruce & Janice Sherman Family, CA — Light Brahma; Brent Davenport, AL — Black Langshan; Beams Poultry Yard, AL — Birchen Modern Game; Payton W Stuart, TX — White Call Duck; Allen Wetherbee, AZ — Quail Belgian d'Anver; C & C Poultry, CT — Birchen Modern Game; James Miller, MO — Brown Red Modern Game; Todd Spidel, TX — White Call Duck.

There could be more and we will include all that have achieved this honor at the time of yearbook printing. Congratulations to all for a job well done.

... Continued on Page 7

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. . . Continued from page 5

The journey to this award takes many wins and many years. We do like to call attention to those that are working hard on the breed and varieties. When an ABA member achieves a minimum of 5 starred wins on a single breed and variety, we recognize them with the Certificate of Merit Award. The following ABA members have made it in 2022.

2022 Certificates of Merit

Birchen Modern Game – Clint Carter, UT
Blue Breasted Red Modern Game – Bob & Claudia Choate, TX
Brown Red Modern Game- Bob & Claudia Choate, TX
Lemon Blue Modern Game – Beams Poultry Yard, AL
Red Pyle Modern Game – Brett & Adam Thompson, AL
White Modern Game – Kane's Feathered Friends, VA
Black OE Game - Tracy Hill, TX/Griffin & Redwine, IN
Blue OE Game - Trevor Baca, NC
Blue Wheaten OE Game – Josh Thigpen, AL
Brown Red OE Game – Linus Clark, TX/WNC Bantams, NC
Crele OE Game – K and D Bantams, MO
Silver Duckwing OE Game – Carolina Bantams, NC
Wheaten OE Game – Billy Grooms, FL/ TNT Bantams, SC
Black American Serama – Bill Patterson, MI
Black Tailed White Japanese – Sammy Collins, NC
SC White Leghorn – Beamers Poultry, ONT/ Brian & Peggy Gates, MO/Timothy Sheets, WA
Black Orpington – Bud Blankenship, OH
Barred Plymouth Rock – Swamprun's Poultry, VA
White Plymouth Rock – Triple F Bantams, AL/ Triple G Bantams, AL/ Clint Carter, UT/
White Plymouth Rock (continued) Burnette Bantams, NC/ David Roof Family, CA
Quail Belgian d'Anver – Kelley & Dillon Sheiss, IN/S&E Bantams, MO
RC Dark Brown Leghorn - Emmett Wild, WA
Dominique – Brett & Adam Thompson, AL
Black Rosecomb- Lori Cary, TX
Golden Sebright – Michael Richards, AL
White Wyandotte - Chad & Terri Blair, VA/Andrew DeHaan, ONT/Mark & Erica Orlowski, NY
Buff Brahma – Brian & Peggy Gates, MO
Light Brahma, Marty Abrahamsen, AR
Black Cochin – Tonya Macrae, AL
Blue Cochin - Bruce Auger, GA Mille Fleur Belgian d'Uccle - Susan Buchanan, AL

Bearded Blue Silkie – Beams Poultry Yard, AL
Bearded White Silkie – Melissa Schuckers, PA/ Wanderlust Farm, UT
White Chantecler – M & M Exhibition Poultry, OH
White Crested Black Polish - Johnny Haussener, PA
White Call Duck - Elite Waterfowl, WI

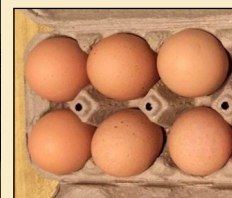
(This is an ongoing award program, and we are pleased to be able to announce these throughout the year)

One other important note - I really hope you all consider taking a 2023 ABA Yearbook Ad – Deadline for submission is May 15th.

Color: Full page \$225; ½ page \$125; Full page - Collective Ads for Club/Breed Club (maximum six individual ads) \$240; Qty discount on collective ads – three or more pages \$180 ea.

Black and White: Full page \$125; ½ page \$85; ¼ page \$65.00; Judges Ad \$35.00 ; Full page - Collective Ads for Club/Breed Club (maximum six individual ads) \$120.

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edgarmongold@yahoo.com or pm Edgar Mongold

The Practical Bantam:

Some Thoughts on Bantams

By Ann Charles

By definition, bantams are 'diminutive' fowl, with some being distinct breeds and no large fowl counterpart. Most bantams are miniatures of a larger breed, approximately 1/4 to 1/5 their size. However, this definition only applies to chickens. Ducks and Turkeys do have weight classes but there is not a bantam and large fowl category for each individual breed. As an example, Call Ducks only exist in the bantam class, and a Pekin duck only exists in the heavy weight class. The same with Geese - each individual breed exists in only one class without bantam and large fowl representation for each breed.

I wonder how long it would take to get a Muscovy or other

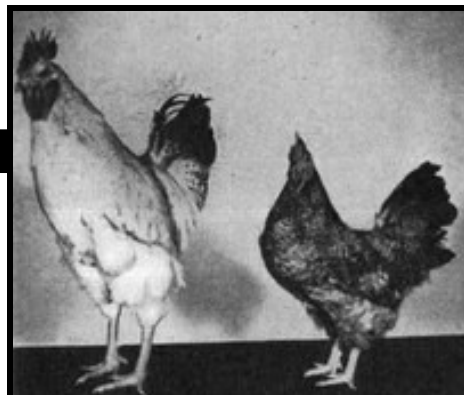


The Serama is the light weight (12-16 ounces) in the Bantam chicken world. Photo by Tyler Anderson.

larger variety of duck down to the size of a Call Duck and I also wonder if anyone has ever tried?

Bantam Genetics: In chickens . . . "There are four documented dwarfism genes, three of which are sex-linked . . . Most bantams I have worked with, especially those on the larger end, appear to result from two major genes, with one almost always being sex linked . . . The smallest breeds, such as Rosecomb, Old English game, and Serama seem to have at least 3 genes at work. . . " - Brian Reeder.

Some bantam breeds are 'true' bantams - having no large fowl counterpart. And some large fowl are large fowl only with no bantam counterpart. By definition, a 'large fowl' Serama would need to weigh in at 4-5 pounds based on their bantam weight of 14-16 ounces (reversing the APA definition of bantam (1/4-1/5) to achieve appropriate large fowl size). Back in 1960, bantam Jersey Giants (an oxymoron if I ever heard one) were actually approved by the APA (not the ABA) in both Black and White in a weight range of 30 ounces for pullets to 38 ounces for a cock. I have never seen a bantam Jersey Giant at a show. But, obviously someone thought they were worth creating. Considering the size of the large fowl Jersey Giants,



This photo has been around forever and does illustrate the powerful effect of the sex linked recessive dwarfism gene.

"Dwarfism due to the sex-linked recessive gene *dw*. Comparative size of two full-sib roosters. Left: Normal sibling (genotype *Dw/dw*). Right: Dwarf sibling (genotype *dw/dw*)." . . . Credit - Wikipedia.

which should range from 8-13 pounds, their bantam standard weights are a bit low but do average out at 1/5 of the large fowl size for this breed.



The Silkie is one of the largest of the bantam breeds and has no large fowl counterpart. Photo by Beckie Ballinger.

Incubating Capacity of Broody Hens and Chick Performance

By I. Azharul, H. Ranvig and M. Howlider (Research Gate)

Abstract

A study was conducted to determine the optimum number of eggs to be incubated under a broody hen of given size and to compare hatchability of eggs and performance of chicks when different numbers of eggs were set under hens of different sizes. Two classes of broody hens, weighing 800-950 g (WC 1) and 950-1100 g (WC 2), were used to incubate 8, 11, 14 and 17 eggs under the traditional method in rural conditions of Bangladesh. Hatching eggs, from parents (Rhode Island Red × Fayoumi), average of 41.3 ± 2.77 (SD) g and with a shape index of 66%, were set under the hens.

No differences were found in hatchability rate (%) of fertile eggs among the different egg numbers and between the hen weight classes.

Number of eggs had no effect on survivability of chicks, but hens of WC 1 had higher chick survivability (95.4%) compared to WC 2 (87.4%). Broody hens had a 40% reduced feed intake (wheat grain) and body weight loss of 12% during the incubation period. Weight gain of chicks during last 4 weeks and 8 weeks of rearing (fed on a commercial diet) were highest in case of 8 eggs (404 g), lowest with 17 eggs (329 g) and medium with 11 or

14 eggs (370 and 361 g respectively) of incubation. Feed efficiency was the same for all birds; it was high during the brooding period. During 8 weeks of rearing, total feed consumption was reduced with the increased number of chicks.

The current study demonstrates conclusively that the statement 'The smaller the broody hens the lower the incubating capacity' may not be true. Indigenous broody hens have the capacity of incubating (87.2% hatchability on fertile eggs) up to 17 eggs weighing an average of 41g. Small broody hens could protect the chicks better from predators, thereby increased chick survivability up to 95.4% compared to big hens (87.4%). However, the incubation of 14 eggs by broody hens will be more profitable to farmers of Bangladesh.

SALT FOR POULTRY

From: *Salt and Trace Minerals for Livestock, Poultry and Other Animals*, by Larry L. Berger, Ph.D.*, *Professor of Animal Nutrition, University of Illinois, Urbana, Illinois

Deficiency Symptoms

Salt deficiency results in lower feed consumption, loss of weight, lower egg production, occasionally a loss in egg size and slower growth in broilers. Sodium chloride deficiency can also increase the bird's susceptibility to disease by suppressing the immune system.

Diet ingredients used today in poultry feeding are deficient in sodium and chloride, so salt must

be added for optimum performance. Mississippi data indicate that the body stores of sodium reserves in hens are negligible and last only about a week. Salt is not self-fed to poultry, so their needs must be met by an adequate level in the diet.

Recent research with broilers has shown that sodium and chloride concentrations recommended by the 1984 NRC publication for poultry was below the requirement for maximum growth using a corn-soy diet.

Florida studies have shown that feeding a corn-soy diet without added salt to Leghorn or broiler breeder hens causes an immediate drop in feed consumption and body weight with egg production dropping to near zero in 21 days.

Mississippi studies have shown that the sodium requirements of cage hens are approximately twice that of hens kept on floor. Floor hens recycle some sodium from their droppings, a fact to take into consideration in adding salt to diets of hens in cages.

Effect of High Salt Levels

Excessive levels of salt are toxic to poultry, but there is considerable variation in the levels considered toxic by various investigators. Younger birds seem more susceptible than older birds to salt toxicity.

In summary, it seems that the addition of one percent salt, probably the highest level to add to any poultry diet, is safe and will cause no toxic effects even with very young birds.



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From Hobby To A Business

- Success Takes a Plan—

By Edgar Mongold

A Business Plan For Marketing

Bantam New Hampshires

November 14, 2022: Started project with twenty, day-old New Hampshire Bantam chicks from Mongold's Standard Bred New Hampshire Utility Bantams. The following is a breakdown of actual expenses and income to point of lay at 5 months.

EXPENSES:

BIRDS

20 day-old New Hampshire Bantam chicks (20 X \$15) = \$300

FEED

4 bags of Buckley Brothers Medicated Starter (4 X \$17.39) = \$69.56

1 bag Kalmbach Fancy & Feathered Show Bird & Breeder = \$23.06

Total feed for 5 months: \$92.62

Total investment for remaining 4 cockerels and 9 pullets at 5 months old: \$392.62. Cost per bird \$30.20.

NOTE: At 5 months 2 more pullets were culled resulting in a total of 7 remaining pullets and 4 cockerels so down to 11 total birds in laying project at \$35.69 per bird.

ADVERTISING

Exhibition Poultry Magazine: 6th of page ad 1 issue at \$45.00, plus 6th of page ad—one year at \$180 = \$225

**Total Expenses to Point-of-lay,
at 5 months : \$617.62**

INCOME:

BIRD/EGG SALES

January 9, 2023: 2 pair of grow outs sold: \$80.00*

Two 15-day old chicks = \$400*

6 dozen eggs: \$600*

**amount represents money after shipping expenses.*

Total Income to Date: \$1,080.00

Profit to Date: \$462.38

INVENTORY/ASSETS: The 7 original project pullets, 4 cockerels.

PROJECTED FUTURE INCOME:

Tentative: 1) 8 dozen hatching eggs at \$100 profit/dozen (currently experiencing 85% daily lay rate). 2) Excess eggs for eating (estimate of 28 dozen).

— — — —



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Black Flies (Buffalo Gnats)

Protecting Your Flock & Livestock

by McMurray Staff

As a poultry owner, it's important to understand how insects can pose a risk of danger or disease for your flock. While Spring is an exciting time for many, seasonal rains and warm, humid weather across states including those in Central, Northern and even Southern areas often lead to an increase in mosquito and black fly populations. Across the nation, the months of April, May, and June are a prime season for swarms of buffalo gnats (also called black flies or turkey gnats).

WHAT IS THE RISK BUFFALO GNATS POSE TO BACKYARD CHICKENS, POULTRY, AND OTHER LIVESTOCK?

Black flies (Simuliidae family) are small, rounded flies measuring barely an eighth of an inch in length. Black flies often attack in swarms, and livestock and chickens can actually die from bites, so keeping them away from your flock is a priority. Deaths from these swarms are due to acute toxemia and anaphylactic shock caused by toxins introduced within black fly saliva; suffocation from swarming flies obstructing the animal's airway; blood loss; or by contracting leucocytozoonosis (see Merck: Leucocytozoonosis in Poultry).

In recent years, flock owners have reported chicken deaths after swarms of the black flies, or gnats, have attacked their flocks. According to the Iowa Department of Agriculture and Land Stewardship (IDALS), in 2018 an investigation showed sudden death/loss in flocks backyard chickens after buffalo gnats were seen swarming chickens. A necropsy revealed several black flies in the oropharyngeal cavity and trachea. That same spring, the International Society for Infectious Diseases released an alert stating that livestock producers in the Arkansas delta were working to protect their animals after a population explosion of black flies was blamed for the deaths of a bull and cow, and the closure of a nature center. Other states from Maine to Louisiana also reported black fly problems during that same timeframe.



Female Buffalo Gnat

CONTROLLING BLACK FLY (BUFFALO GNAT) POPULATIONS

Male black flies feed only on the nectar of flowering plants, but the females seek blood to nourish their developing eggs. Unlike mosquitoes that breed in stagnant water, black flies can breed in virtually any flowing water — often fast-moving creeks and rivers. This makes control extremely difficult because running water is often some distance from poultry flocks and livestock. Adult flies will travel 10+ miles in search of blood.

Black flies like warm, humid weather and are attracted to the carbon dioxide exhaled by people and animals, as well as perspiration, fragrances or dark, moving objects. They are most active just after sunrise and before sunset on calm days. Avoiding infested areas at these times is the best means of prevention.

So how can you protect your flock or livestock? Here are a few tips:

- **Keep Your Flock Cooped** — The best means of prevention and protecting your chickens, ducks, geese, turkeys and other poultry from black flies by keeping them cooped. Black flies rarely enter shelters.
- **Use Screen Mesh to Your Coop and Run** — The flies can pass through tiny spaces, so covering coops with screens of 24 mesh per inch (2.54 cm) or smaller is needed. It's important to note that screen mesh is not predator-proof for larger animals, so we recommend layering the mesh over hardware cloth for better flock protection.

- **Use Fans for Air Movement** — Experts also recommend using fans as air movement to help deter the flies.

As a poultry owner, it's important to understand how insects can pose a risk of danger or disease for your flock. While Spring is an exciting time for many, seasonal rains and warm, humid weather across states including those in Central, Northern and even Southern areas often lead to an increase in mosquito and black fly populations. Across the nation, the months of April, May, and June are a prime season for swarms of buffalo gnats (also called black flies or turkey gnats).

“Some poultry producers have reported success with products containing Citronella or Vanilla oil.”

Experts Weigh In on Controlling Buffalo Gnats in Poultry

Gail Damerow—*“Keep your flocks cooped and secure up openings. Aside from confining poultry indoors, with fine mesh screens covering openings and a running fan to keep air circulating inside the coop, not much else can be done but wait the several weeks until the black flies naturally abate.”*— Gail Damerow, poultry expert and best-selling author

Unfortunately, using pesticides for black fly control often has limited success. In some situations, liquid residual pesticides may be effective when applied to surfaces where flies land. Below are a few options to try if securing your flock in their coop isn't enough:

- **Permethrin Spray** — Spray permethrin aerosol inside crevices and in the areas of gnat activity. The spray is an insecticide so will kill the gnats using chemicals.
- **Essentria Insecticide Concentrate** — Quick control with residual protection. Multi-purpose: for indoor, outdoor, fogging, turf and ornamental, on animal and mosquito misting applications. Contains natural essential plant oils with fresh scent.
- **Insectrin X** — A long-lasting livestock and premise spray that provides quick knockdown, broad-spectrum insect control for up to 28 days.

Active ingredient is Permethrin. Controls poultry lice, fowl mites, ticks, fleas, flies, and numerous other insects.

- **Prozap Insectrin Dust** — This ready-to-use insecticide dust controls Northern Fowl Mite, lice on swine and northern fowl mites, chicken mites and lice on or around poultry.
- **Mite Strips** — Permethrin mite strips are an efficient and economical option to help protect your flocks.
- **Citronella or Vanilla oil**—Some poultry producers have reported success with products containing Citronella or Vanilla oil.

Gnat foggers will kill gnats which are currently present in your area. This option will not kill unborn gnats or adult gnats not currently in the area, therefore it is not a permanent solution and requires multiple foggings as gnats return. This may also require you to relocate your flock temporarily during treatment.



Editor's note: Photo from 2018, a very intense year locally for buffalo gnats. Vanillaroma car fresheners actually protected this bantam pair of Araucana that were in a small tractor, outside in my chicken run.

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Chicken Deep Litter Compost for your garden

By Ann Charles

I recently read the detailed recommendations for an annual Spring cleaning of your poultry barns. This was published by a major university and is broken down into these progressive steps: Dry Cleaning—Wet Cleaning - Soaking - Washing - Rinsing - Drying - Repairs - Disinfecting. Are you tired yet?

I prefer deep litter.

My chickens have been on the same deep litter setup in their current location for almost 9 years now. I maintain my deep litter by simply adding coarse flake pine shavings when their pens get too dusty or damp. It can't get much easier than that. The 'compost/soil' my birds live on is probably a foot thick now. This deep litter exists in an open sided 12 x 28 shed that used to house a boat. There is regular overflow of the composted litter from the edges of the pens to the ground outside. Gradually, chicken scratched/dug composted deep litter makes it to the outskirts of the barn, where it is kept moist by periodic rain runoff from the slope of the roof. All of this area is shaded most of the year by a couple of large Oaks. This has resulted in a deep natural worm bed of about 6 feet by 28 feet in surface area running along the length of the barn. My poultry barn usually has about 50 birds confined in it at any one time.

Online research has not led to much information on the value

Analytical Results		Sample: 'Deep Litter Poultry Compost'		Simply Soil Testing	
Customer:		Ann Charles 180 Snowden Rd Winnfield, LA 71483		Date received: 04/01/23 Report date: 04/05/23 Sample reference #: 11620 Plant code: 01 - Vegetable Garden Tests requested: Basic, OrgM, B, S, Zn, Mn, Cu, Fe	

RESULTS		INTERPRETATION				
Nutrient	Level	Low	Medium	High	V High	Result
Nitrogen (nitrate-N)	6482 ppm					Very High
Phosphorus (P)	501 ppm					Very High
Potassium (K)	1580 ppm					Very High
Calcium (Ca)	5959 ppm					Very High
Magnesium (Mg)	904 ppm					Very High
Boron (B)	10.30 ppm					Very High
Sulfur (S as SO4)	1,032.2 ppm					Very High
Organic Matter	40.6 %					Very High

Micronutrients		Critical Range		Result	
Zinc	30.6 ppm	0.5 - 0.9 ppm		Very High	
Manganese	37.6 ppm	0.6 - 1.3 ppm		Very High	
Copper	3.6 ppm	0.3 - 0.5 ppm		Very High	
Iron	14.4 ppm	2.3 - 4.5 ppm		Very High	

pH and Lime Requirements

Current pH = 6.90 (within optimal range)

Acidic

Alkaline

3

4

5

6

7

8

9

Optimal pH range: 6.0 - 7.0

Lime Recommendation

None required.

Fertilizer Recommendations			
Nutrient	Weight / 1000 sq ft	Nutrient	Weight / 1000 sq ft
Nitrogen	2.8 lbs (120 lbs/acre)	Boron (B)	none required
P (as phosphate)	none required	Sulfur (S)	none required
K (as potash)	none required	Iron (Fe)	none required
Calcium	none required	Manganese (Mn)	none required
Magnesium	none required	Copper (Cu)	none required
		Zinc (Zn)	none required

N-P-K Fertilizer Options

A fertilizer with N, P and K in the proportions 20:0:0 is recommended (14 lbs/1000 sq ft). Phosphorus and potassium are already present at high levels. Only a standard annual application of nitrogen is recommended. Below are some nitrogen-containing fertilizer options, along with the quantity needed. Due to the current high level of nitrogen, you may wait 6 - 12 months before the next nitrogen application.

Ammonium sulfate - 13 lbs/1000sf

Calcium nitrate - 18 lbs/1000sf

Lilly Miller 21-0-0 (Home Depot) - 13 lbs/1000sf

Urea - 6.0 lbs/1000sf

Scott's Organic Choice - 25 lbs/1000sf

Simply Soil Testing, 20312 Lafayette Rd, Burlington, WA 98233 Email: service@simplysoiltesting.com

of my composted deep litter as a garden amendment. Since I recently was bit by the gardening bug I became even more curious about what 9 years of pine shavings, chicken manure, and composting actually had developed into—nutrient wise for plants. For a \$32 soil test and less than a week of waiting, I had my answers, and in more detail than I could have imagined. Thank you 'Simple Soil Testing'! See my re-

sults above. As rich as this mixture is, it is not what I am currently gardening with. I am using a equal mix of coco coir, potting soil and the worm castings that are a result of the litter overflow surrounding the chicken barn. So far so good.

I am not sure what most of you do with your chicken manure but it can be gold, and yet another great benefit of raising chickens!

The Genes Involved in Self-Black Phenotypes

By Brian Reeder

Black colored chickens are very popular in the poultry world. This is understandable, as they are striking, appear clean in most settings and present a beautiful silhouette, especially in type-bred fowl such as The Cochins, Silkies, Japanese bantams, etc. While self-black, or solid black, is popular, it is not often well understood genetically and can be difficult to breed, especially when the attempt is made to create a black variety of a given breed that does not already have this color variety.

It is important to understand that there is no such thing as a “black gene”. Black is a complicated color variety genetically, though it looks very simple to the eye, as is the case for all of the self-colored varieties (many whites, buff, red, etc). To arrive at the self-black phenotype, we need several mutations that increase the melanin levels of the fowl. It is easier to fully melanize the female than the male, as the female is more melanized than the male in the jungle fowl to begin with. Of the six well known e-alleles, only three are generally found with the fully black phenotype: E (extended black) ER (birchen) and eb (brown). There have been some claims that other e-alleles may be capable of being fully melanized and though I have never seen any evidence for this, that doesn’t mean it is impossible. I will discuss this more at the end of the article.

Of the three e-alleles commonly associated with solid black phenotypes, E and ER are the most commonly encountered. Brown (eb) based self-black lines are much more rare. While E is called ‘extended black’, it does not make a solid black bird in and of itself, requiring the same generally group-

ing of additive type genes as the other two alleles to make the self-black phenotype. Extended black is named for the chick down of this allele and not because it makes a solid black adult plumage. The brown allele (eb) is a mutation of E and shows an extension of melanin in comparison to the red jungle fowl e-allele, e+ (duckwing). As all three of these e-alleles (E, ER and eb) are more melanized than the wild type allele (e+) it seems intuitively logical that it is these alleles upon which self-black phenotypes can be most easily made.

Both E and ER are known colloquially as “crow wing” in that the adult males do not show the pheomelanic wing triangle as seen in e+, eb, ebc and eWh males. As well, the hackle of both sexes and the saddle and shoulder of the males of the E

“Melanotic is diagnosed by the fact that it tends to melanize the top of the head and upper hackle of both sexes, while partially melanizing the shoulder and saddle of the male by making the mid-stripe of the feathers wider and more distinct . . .

The recessive black complex genes tend to have the strongest melanizing effect on the lower hackle of both sexes . . .”

and ER alleles show a heavy melanized stripe in the center of the feathers. These two alleles are then probably easiest to fully melanize to create the self-black, as they are already heavily melanized to begin with. The brown (eb) allele is more melanized than the e+ allele and is also less pheomelanic (as seen in the female body—absence of the salmon breast). While the male of the eb allele does show the pheomelanic wing triangle, both sexes show the strong black hackle stripe and the male shows a strong black stripe on shoulder and saddles. The

presence of melanotic extension in this allele also presumably makes it easier to fully melanize. The most difficult aspect of fully melanizing the eb allele is the pheomelanic wing triangle of the male. In my personal experience, lines of eb-based, nearly self-black birds often show fully black females and males that are fully black except for the wing triangle, which remains pheomelanic and must require a very specific melanizing gene to cover. Fully self-black lines of eb e-allele birds are known in black Wyan-

dotte and black Leghorn, so it seems that fully self-black eb birds are possible, but may be harder to make than on E or ER, possibly requiring a rare melanin mutation to be successfully, fully melanized.

To go beyond the basic color blocking of the e-alleles (E, ER and eb) requires the addition of two or more melanizers, generally. My experiences indicate that there are several different mutations that melanize normally pheomelanic areas of the fowl. Melanotic (MI) and charcoal are two of the known melanizers, with MI being the most well known and extensively studied of all the melanizers. I also refer to “recessive blacks”, which is a catch-all of several different unnamed and little studied factors that seem to be different genes and also seem to not be Melanotic or charcoal. It is my experience that most blacks have melanotic and at least one other melanizer, generally somewhat recessive in their function, being more recessive in males than in females. I refer to this as ‘sex-expressed’. Charcoal is likely one of the genes in the ‘recessive black’ complex of factors.

Melanotic is diagnosed by the fact that it tends to melanize the top of the head and upper hackle of both sexes, while partially melanizing the shoulder and saddle of the male by making the mid-stripe of the feathers wider and more distinct (as long as none of the interaction genes such as Pattern gene, Columbian and/or Dark brown {ginger} are present). The recessive black complex genes tend to have the strongest melanizing effect on the lower hackle of both sexes, as well as melanizing the outer edges of saddle and shoulder feathers in the male. There is some variability to the extent that the various recessive black complex factors melanize. None seem to be very effective at melanizing males when heterozygous.

When any of the three e-alleles (E, ER or eb) is combined with MI and any one (or more) of the recessive black factors a nearly fully self-black phenotype can be expected.

“It is my experience that most blacks have melanotic and at least one other melanizer, generally somewhat recessive in their function, being more recessive in males than in females. I refer to this as ‘sex-expressed’. . .”



Black Australorp female—Mackenzie Schasel

However, in my experience, unless both (all) factors are homozygous, it is not likely that a fully self-black male will result. The males seem to require homozygosity for both of the melanizing factors in order to create a fully black phenotype. However, on the be e-allele, just these two types of melanizers do not seem to be sufficient to make the fully black phenotype in males, which will usually still show the pheomelanic wing triangle even with the full gene combination described. For the brown allele (eb)

there seems to be a third gene (atleast) required to make the fully black male.

As a further consideration, some of the non-melanized varieties seem to carry a factor that suppresses the expression of melanin in the sex feathering (hackle/saddle/shoulder) of the males. When this factor(s) is accidentally recombined with the melanizers, even on one of the three more melanized e-alleles, it can be extremely difficult, even impossible, to create the fully

black phenotype in males. Some attempts to make self-black varieties in some breeds seem to be stymied by this type of factor.

I have seen several odd anomalies in relation to self-black phenotypes that make me believe this is a very complicated subject for which we have only touched the tip of the iceberg. In one rare instance, involving a line of black Minorca, there seemed to be only one melanizing gene in addition to the e-allele (E). However, I was never able to extract that factor and observe it functional in recombination with any other line, no matter the outcross I tried or how many generations I carried those outcrosses forward. Only when the f1 offspring were back-crossed to the said Minorca line for two or more generations did the factor begin to express again in the phenotype. Perhaps there was a gene that suppressed pheomelanin and allowed only one melanizer to completely blacken the feathers? I can't be sure and never pursued the factor far enough to make any definitive determination.

Wheaten is an interesting e-allele, as it is the opposite of those we have discussed. Wheaten restricts melanin, as can be seen in the absence of hackle striping in males and the drastic reduction of melanin in females as well as the extension of pheomelanin across the female's back. The fact that the fully pheomelanic varieties such as self-buff and self-red occur on a wheaten base tends to reinforce



Black Cochon male—Kathy Ashcroft

this notion. It is my experience that wheaten is the least amenable of all the e-alleles to melanization, with MI having only a small effect on this allele and the recessive black complex factors showing only partial expression in females and nearly none in males. The most melanized expression on a wheaten base that I have ever witnessed is found in the Redcap breed, which appears to be a melanized and patterned wheaten.

In closing, I want to point out that self-black fowl are very elegant, lovely birds. Self-black allows the silhouette to really stand out. As well, a well-bred line of the self-black variety of any breed is an excellent starting point for beginners, as long as the males are sound for melanization in the hackle/saddle/shoulder, thus implying homozygosity for the melanization genes. If the males are not sound in the sex-feathered areas, they can be very difficult to clean up, in many instances.

Self-black is a very popular variety for showing in many breeds and there are often very good lines available of the variety in those breeds. The beginner would do well to work with such a line. However, I would strongly discourage beginners from trying to make a black variety in a breed where none exists, as it is a complicated variety genetically and can represent many difficulties that beginners may find insurmountable.



Black Rosecombs—Brad Blankenship.

Editors Note . . . Once you truly understand the color black, you can more easily comprehend the patterns based on a solid black bird as shown here.



Black, with Barring pattern -
Emily Garland



Black, with Blue dilution -
Donna Sheckler



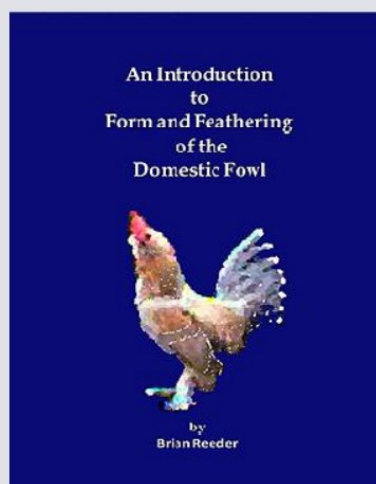
Black, with Mottling pattern -
Michelle Geer



Black, with Exchequer pattern -
Leigh Schilling Edwards



Black, with White genetics -
Ryan Pousson



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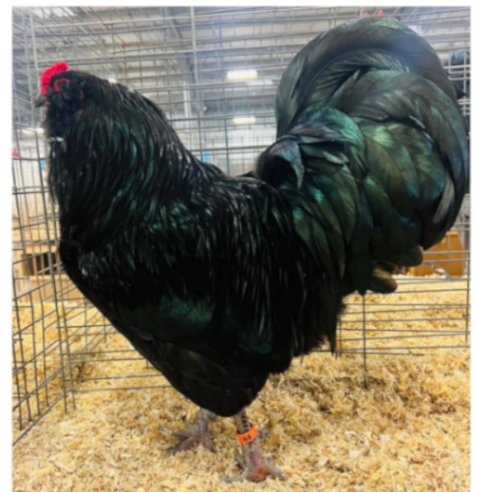
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