

Chromosome Linkages Sub-Menu

[..... Introduction:](#)

[..... Chromosome Linkages Table:](#)

URL: http://home.ezweb.com.au/~kazballea/genetics/linkages_print.html

Last updated: 9 Nov, 2008

* Most of the photos on this website originated from "[Feathersite](#)", and "[Old English Bantam Club of America](#)" websites, and have been given with permission by the website administrators.

© Copyright of images belongs to cited photography contributors.

Linkages

- Introduction on linkages
- Linkages tables, categorised into chromosome groups
- Map units

Chromosome Linkages Table

The following linkage map table is based on the following books:

1. Crawford (ed.) (1990) *Poultry Breeding and Genetics*.
2. Stevens, L. (1991) *Genetics and Evolution of the Domestic Fowl*.
3. Muir and Aggrey (ed.) (2003) *Poultry Genetics, Breeding and Biotechnology*, CABI Publishing.

All hashed data is from the last book (Muir & Aggrey), & is based on the following quote from this book (page 499):

The classical linkage groups I, IV and Z correspond to chromosomes 1, 2 and Z, and linkage group II to linkage group E22C19W28. These results also clearly show that several of the linkages reported in the past are incorrect. For example, naked neck and blood group P are located not on chromosome 1 (linkage group 1) but on chromosome 3 and extension of eumelanin (MC1R) is not located on chromosome 1 but located on microchromosome 11 (Takeuchi et al., 1996; Sazanov et al., 1998; Kerje et al., 2003, unpublished).

-Note, the recessive white locus (Tyrosinase) map reference is from Dr Ron Okimoto (pers. comm.)

*Recent sequencing of the yellow skin allele:

Eriksson J, Larson G, Gunnarsson U, Bed'hom B, Tixier-Boichard M, et al. (2008) *Identification of the Yellow Skin Gene Reveals a Hybrid Origin of the Domestic Chicken*. PLoS Genet 4(2): e1000010. doi:10.1371/journal.pgen.1000010

Quotes from the above article:

...yellow skin was previously assigned to chromosome 24. An examination of this chromosomal region revealed an obvious candidate gene for yellow skin, BCDO2 located at position 6.26–6.29 Mbp.

Due to the above information, I've included w locus on Microchromosome 24 () in the table below. It is obvious from growing discrepancies in data below that the old Linkage Maps in Crawford, etc (which most of the table below is based on) are outdated and need significant revision.

Locus	Map Unit Distance	Locus Description	Comments
<i>Group I : (# Chromosome 1- new)</i>			
Cp		Creeper	
	0.4		
R		Rose Comb	

	30		
U		Uropygial	linkage not given to lav
-----	-----	-----	-----
the below not linear			
lav	32.5	Lavender	lav 32.5 map units to R
	?		linkage not given between lav & Mp
Mp	16		Mp 16 map units to R
the above not linear			
<i>Group II (# linkage group E22C19W28- new)</i>			
fr		Fray	
	46		
Cr		Crest	
	12.5		
I, I ^D , I ^S		Dominant White, Dun, Smoky	
	17		
F		Frizzle	
<i>Group III: (# Chromosome 1- old)</i>			
w		Yellow Skin	*sequenced on Microchromosome 24
	22		
Ea-H		Blood Group H	

	21		
se		Sleepy Eye	se is 45 map units from P
	3		
Ea-J		Blood Group J	
P	36		
O		Blue Egg-Shell	
	4		
Cha		Charcoal	
	0.3		
P		Pea Comb	*Carefoot believed E locus linked to P -43 cM, this later determined incorrect.
	32		
Db		Dark Brown	Db is 32 Map units from P
	12		
MI		Melanotic	MI is 45 + map units from P
	10		
Pg		Pattern	
	?		
T		Tardy	
	?		
Ea-P		Blood Group P	(#Chromosome 3 - new)
	28		
Na		Naked Neck	(#Chromosome 3 - new)

q	43		
h		Hookless - Silkiness	
	11		
Fl		Flightless	
	?		
c		Recessive White	Tyrosinase (#Chromosome 1 - new)
<i>Group IV (#Chromosome 2 -new)</i>			
D ^V , D ^C		Duplex Comb	
	27		
M		Multiple Spurs	
	33		
Po, Po ^d		Polydactyly, Duplicate	
<i>Group V: (Z Chromosome -sex chromosome)</i>			
ro		Restricted Ovulator	
	3		
sh		Shaker	
p	14		
n		Naked	
	7		
px		Paroxysm	
	1.9		
ln		Liver Necrosis	

	3.1		
dw ^B , dw ^M , dw		Dwarf	
	3.4		
wl		Wingless	
	0.6		
pn		Prenatal Lethal	
	3		
K ⁿ , K ^s , K		Slow Feathering	
	1.1		
S, S ^{al-s} , s ^{al}		Silver, Imperfect Albinism	
	4		
lk		Lady Killer	
	12		
Li		Light Down	
	7		
y		Recessive White Skin	
	13		
br		Brown Eye	
q	27		
Id, id ^a , id ^c , id ^M		Dermal Melanin Inhibitor	
	14		
B ^{Sd} , B		Sex-linked Dilution, Barring	
	13		
ko		Head Streak	

Group VI: (W Chromosome -sex chromosome- females only)

<i>Group VII (Chromosome 6)</i>			
the below not linear			
Gc, Alb			
Ade-A			
Pgm-2			
the above not linear			
<i>Group VIII (Chromosome 7)</i>			
Ade-B			adenine synthesis B
<i>Group X (Microchromosome 17)</i>			
p			
B-G			
Ea-B			
	0.4		
B-F		MHC	
R-Rs 1			
B-L			
lr-GAT			
NOR		Nucleolar organiser region	
q			
Ea-B			

<i>#Microchromosome 11</i>			
E, ER, ER- Fay, e ^{Wh} , e ⁺ , e ^b , e ^s , e ^{bc} , e ^y , e ^q		E Series	
<i>*Microchromosome 24</i>			
w		Yellow skin	*see ref. above



[\// Home](#) \// [Genetics Theory](#) \// [Chicken Mutations](#) \// [Chromosome Linkages](#) \// [Chicken Variety Genotypes](#) \//
[\// Genetics Calculators](#) \// [References/Links](#) \// [About](#) \//