

BIOL2007 exam 2007: Section C q. 9

	domn AA	medio Aa	bimac aa	Total	
O		72	35	11	118.0000
p(C)=	a) 0.2415				
p(c)=	0.7585				
Sum(check)	1				
Exp Genot freqs	0.5753	0.3664	0.0583		
E	b) 67.8835	43.2331	6.8835		118.0000
X ²	0.2496	1.5679	2.4618		4.2793 total chi ²
					c) P<0.05 1df
					d) Value of F 0.1904
broods	36	42	21		99.0000
expect:	1:	2:	1		
e) expected nos	24.7500	49.5	24.75		99.0000
X ²	5.1136	1.1364	0.5682		6.8182 total chi ² P<0.05

f) Expect 1:2:1. Too many dominula, and too few heterozygotes, bimacula. It's significant. 2df
So maybe (i) selection against bimacula alleles in brood, and/or (ii) not possible to score genotypes properly.

g) In (l) expect bimacula to decline in frequency due to selection against the allele, or (ii) may stay same if no selection and its just a scoring error.