

Production strategies: Population Sizes and Structure of GPS

A typical day-old Grandparent package is given in following Table

Total day-old flock size is 20000

	Male Line			Female Line			Total
Line	A	B	Ratio	C	D	Ratio	
Sex	Male	Female		Male	Female		
No. of day-old chicks	2813	3122	1:1.11	2813	11252	1:4	20000
Live birds (Mortality 3% up to 4 weeks)	2728	3028		2728	10914		19398
No. of birds (after first selection at between 4 - 5 weeks of age, considering mating ratio)	432 (3028/7)	3028	1:7	1559 (10914/7)	10914	1:7	15933
Live birds (Mortality 5% between 6 to 20 weeks)	410	2877		1481	10368		15136
Final bird numbers – after second selection at between 18 -21 weeks of age (considering mating ratio)	288	2877	1:10	1036	10368	1:10	14569
Percentage of day-old birds retained after all Selections	10	92		36	92		72

Male –Female ratio of male line 1:1.11

Male –Female ratio of female line 1:4

(if ratio multiplying constant 1,

Then, Male line total population is $(1+1.11) = 2.11$

Female line total population is $(1+4) = 5$

So, the DOC male and female line ratio is (2.11: 5) i.e. 1: 2.37

Birds of male line = 20,000 of $1/3.37 = 5935$

Birds of female line = 20,000 of $2.37/3.37 = 14065$

1. Male and female ratio of male line = 1:1.11

Male birds of male line = 5935 of $1/ 2.11 = 2813$

Female birds of male line = 5935 of $1.11/ 2.11 = 3122$

2. Male and female ratio of female line = 1:4

Male birds of female line = 14065 of $1/ 5 = 2813$

Female birds of female line = 14065 of $4/ 5 = 11252$

- *Changes to this day-old package size may be required due to environmental constraints such as feeder space, floor area or stocking density. Any adjustments to package size should be discussed and agreed with GPS Business representative.*
- *Day old Male and female line ratio is 1:2.37*
- The final numbers at 21 weeks for both Line B and Line D females are 92% considering mortality (3%+5%) = 8% in rearing period.
- At 21 weeks the final number of Line B females should be not less than 30% of Line D females. This will ensure that there will be an adequate male to female ratio at day-old in the Parent generation.
- No of flock size will depend on the demand of hatchery and egg production of breeder hen in Bangladesh condition.