

Development of Commercial broiler strain

Pure Line

The homogenous generations of repeatedly **self-fertilizing** animals, in which most **genes are homozygous**. The term was introduced in 1903 by the Danish geneticist W. Johannsen, who proved by experimentation on legumes that **pure lines exhibit similar phenotypes under identical conditions**. Pure lines are obtained from a single ancestor and are maintained by self-fertilizing and selection. **Individuals in pure lines repeat over several generations exhibit the same genetically fixed traits**. Hybridization of two pure lines often results in heterosis in the first hybrid generation;

Grand Parent Stock (GPS)

A male line and a female line are maintained to develop commercial strain or hybrid. Four grandparents come from two different pure lines through inbreeding, two of which produce the male parent stock and two of which provide the female parent stock.

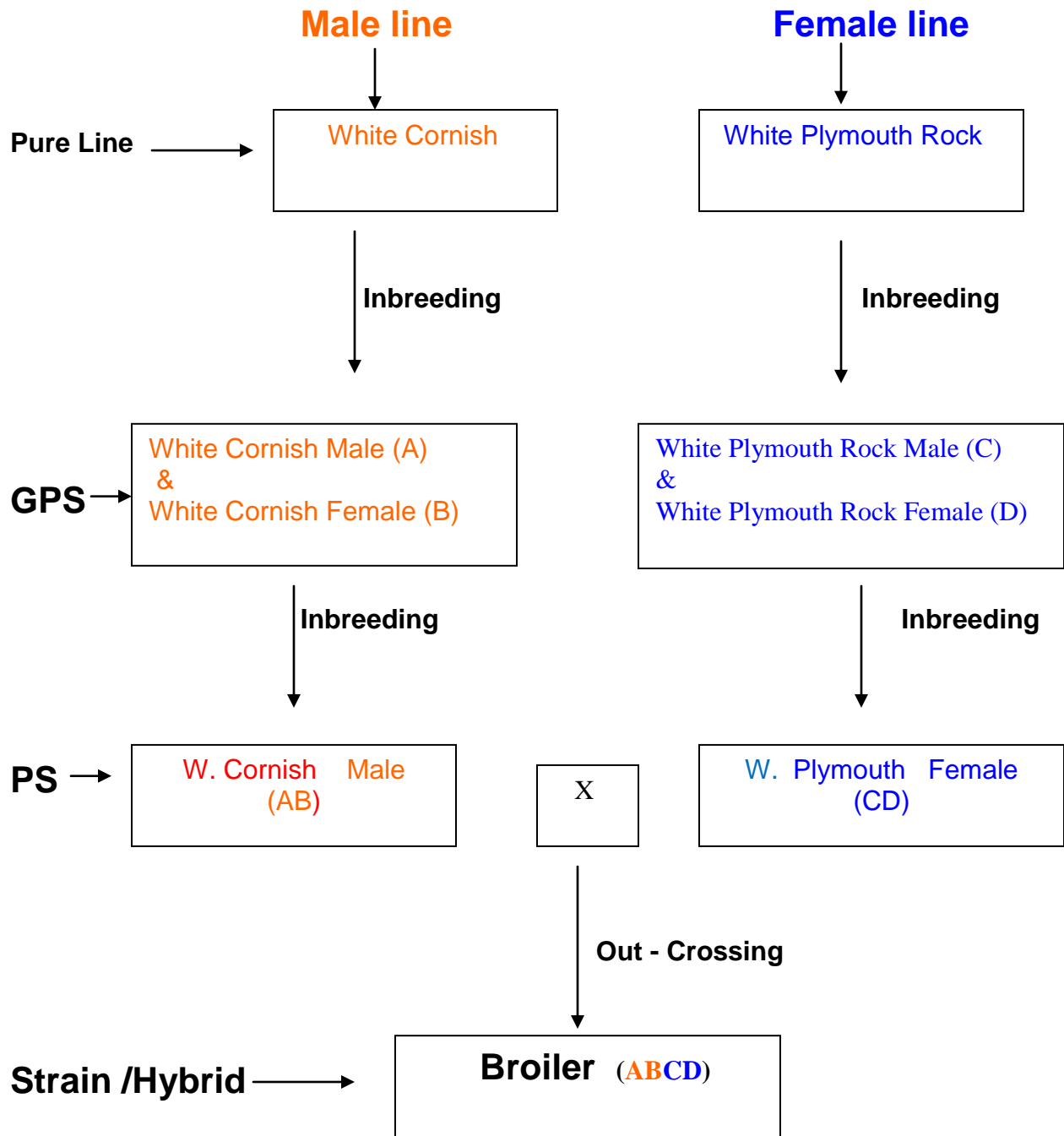
Parent Stock (PS)

The breeders flock of both male and female line which is developed from GPS through inbreeding to produce commercial strain of chicken.

Strain

Chicken which has been developed by the poultry breeder by introducing desired economic traits from the parent stock through out- crossing of two different male and female line of two different breeds. It is always superior to their parent stock.

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Modern broilers are typically a **third generation (3G) offspring** (F2 hybrid). The broiler's four grandparents come from four different individual, two of which produce the male parent line and two of which provide the female parent line, which are in turn mated to provide the broilers. **The male lines and female lines are not bred for the same traits**; for example, the female line needs to be able to lay as many eggs as possible, since the number of eggs laid per hen influences the cost of broiler eggs and hence broiler chicks. Egg-laying ability is less important in the male line, while rooster fertility is very important.