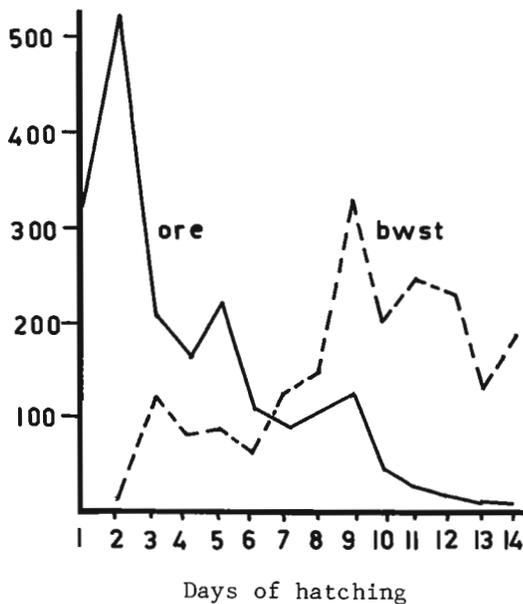


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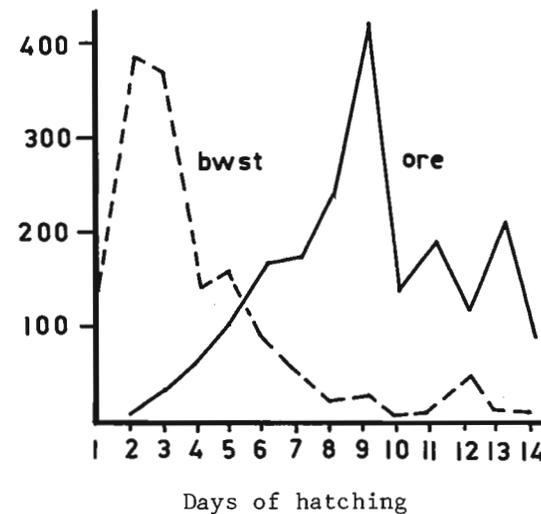
In order to find out the effect of earlier egg laying in a culture bottle with abundance of food a small experiment was carried out as described underneath. For this purpose 100 fertilized normal females (Oregon-strain) five days old (kept

during this period with males) were then transferred to a vial containing normal corn meal food and allowed to lay eggs for 24 hours. These females were then discarded and replaced by 50 fertilized females and 50 males of the mutant strain bw,st. The mutant flies were allowed to lay eggs for 10 days continuously and then removed before the first flies hatched. In another set of experiments the same procedure was followed with the exception that at first 100 mutant bw,st females were used and then replaced by normal Oregon females and males. The bottles were repeatedly seeded with yeast solution so that the food supply was abundant. Fourteen days after the first females were put into the vials, the offspring started to hatch. From that moment the hatching flies were counted daily for a period of two weeks. In total, the offspring from 14 vials, seven for each experiment, were counted. The results are shown in Figure 1. The diagram on the left corresponds to the cultures with Oregon ♀♀ first, the right to those with bw,st ♀♀ first. It can be clearly seen that whichever genotype was used first has its peak for hatching flies on the second day with steady reduction on the days following. The genotype which had a delay of a day in egg laying, however, has its peak on the 9th day.

Number of individuals hatched



Number of individuals hatched



From the data presented it can be concluded that in competition the genotype of the eggs laid first is at an advantage. The period between the hatching peaks for the two groups is much longer than the period of delay in egg laying. This finding can be interpreted in two ways. Either there is an interaction between larvae in the sense that the older larvae can suppress the development of the younger ones, or females which are ready to lay eggs do not do so if there are already eggs deposited on the food surface. Egg laying, however, cannot be hindered by the females longer than a certain period. The hatching behaviour of the strains used, irrespective of the strain allowed to lay eggs first, is practically identical.