

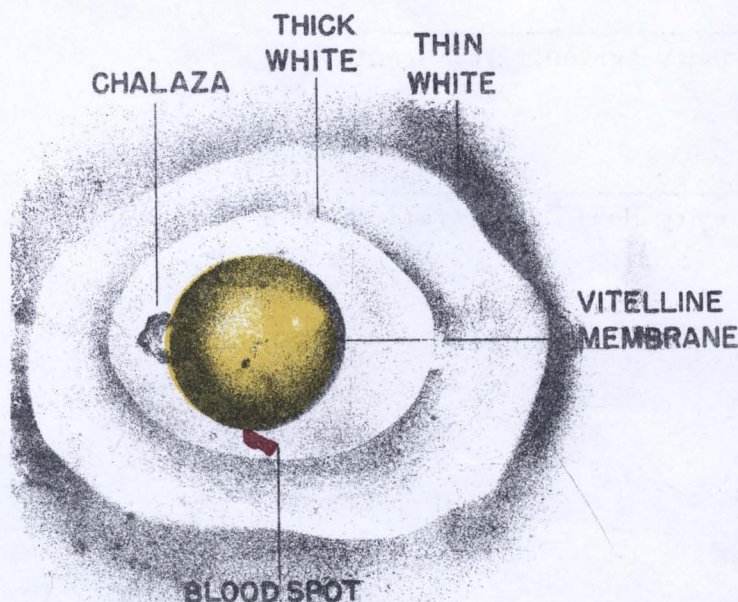
## The Effect of Blood and Meat Spots on Market Value of Eggs

Although blood and meat spots do not affect the nutritional value of eggs, they do affect their quality and thus are factors in their economic value. These spots also affect the consumers' acceptance; therefore, they are important items in the value, sale and use of eggs for food. The occurrence of these spots in eggs broken by the housewives tends to cause dissatisfaction with eggs as a food and they are, therefore, likely to use less eggs in cooking.

Grading stations report that it is not uncommon to find three to five eggs having blood or meat spots in a case of 30 dozen. This may not seem important when we consider that five eggs out of 360 or 1.39 per cent can have these defects. However, eggs are usually sold to consumers in dozen lots and if each purchaser bought one dozen from the case and the five eggs with meat or blood spots were in different dozens, this condition would cause five customers out of 30 or 16.66 per cent to receive a food product for which there would be just cause for complaint. Increased consumption is not likely for any product which gives this high per cent of dissatisfaction.

According to research workers, candling is the only commercial means by which blood and meat spots may be detected for removal. While this procedure may not remove all spots, it does remove the most objectionable.

*Research Results:* Nalbandov and Card, University of Illinois (1944), have demonstrated that blood spots degenerate into meat spots and that the tendency to produce blood and meat spots is inherited. They also report that these spots result from hemorrhages during the formation of the egg before ovulation takes place. They are usually found between the follicular wall and the vitelline membrane surrounding the yolk. Quinn and Godfrey, U. S. Department of Agriculture (1940), reported that there was a definite difference in breed and family with respect to the number of blood and meat spots found in eggs. Jeffrey and Walker, University of Massachusetts (1949), found more colored meat spots and fewer white meat spots in brown shell eggs than in white or light brown eggs. The work of Jensen, Sauter and Stadleman, State College of Washington (1951), indicates that within certain time limits an increasing per cent of blood spots can be identified as the age of the eggs increases. They further state that more blood spots can be detected during warmer seasons than cold. This is true because egg albumen becomes watery with age and high temperatures hasten this change. When these conditions exist, the yolk, around which most meat and blood spots occur, can be twirled closer to the shell. This enables the candler to see the shadows caused from these defects and thus detect a higher percentage. Jensen, Sauter and Stadleman also report that under normal conditions eggs should be three days old in order to detect the maximum number of blood spots when candling.





According to research data available on meat and blood spots and the results of studies made in egg grading stations, it is advisable for poultrymen to consider the inheritance of the breeding stock with reference to meat and blood spots when buying chicks for flock replacements.

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