Grain color is the only important character by which varieties of wheat can be grouped into types on visual examination of a seed sample. Two color types are recognized, the red wheats and the white wheats, although there is considerable variation in the intensity of the color between varieties of the red wheats, and the color of the grain in the white wheats is actually yellow. It is not normally difficult to clarify a particular variety of wheat as red or white-grained, but difficulties may be experienced in determining the color of individual grains when a sample has been treated with a fungicide as those usually incorporate an orange or pink dye. Difficulties may also be experienced if the sample has been subjected to weathering in the field during harvest, or premature ripening has resulted in a large proportion of grains with vitreous, as opposed to starchy, endosperm.

In a review of methods for testing the genuineness of variety in the laboratory, Chmelar and Mostovoj (1938) referred to a method for identifying any grains of white wheat varieties in samples of varieties with red grains by soaking a representative portion in a 5% solution of potassium or sodium hydroxide for 15 minutes. The grains of white varieties then became cream-colored while the grains of red varieties became an intense red. This test has been used to confirm the separation of grains by color in routine purity tests on wheat. The method consists of immersing each four replicates of 25 grains in 25ml. of 5% sodium hydroxide solution in a 10cm. glass Petri dish, and noting the color changes over a period of one hour. The grains of both red and white varieties assume a bright yellow color immediately when they are immersed in the solution of sodium hydroxide. But after 10 minutes the grains of the red varieties become dark orange which deepens to an orange-brown color after 60 minutes. By contrast, the initial bright yellow color of the white grains fades to a straw yellow color after 10 minutes in sodium hydroxide solution, and then shows little further change.

The method has been used to determine varying proportions of red grains as an admixture, in samples of a white grained variety in artificial light when the color difference could not be detected with certainty by visual examination. The method has also proved satisfactory for differentiating between red and white grains which have been treated with a seed dressing or have a vitreous steely endosperm.