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In Piemonte region two autochthonous chicken breeds exist: 'Bianca di Saluzzo' and 'Bionda Piemontese'. These slow-growing meat breeds are reared in farms mainly located in Cuneo and Asti provinces. In the past decades both breeds underwent to a strong reduction in size and they were frequently replaced by fast-growing lines. Only recently, conservation plans were undertaken. The main objective of this work was to determine the genetic structure of these breeds. We used 26 microsatellites suggested by the literature. Allelic richness was 5.9 and 6.4 for the 'Bianca' and the 'Bionda' respectively, gene diversity was 0.665 in both breeds. Differentiation was measured by Fst (0.056) and was highly significant ($P<0.001$). Using the Bayesian analysis (Structure software) under the hypothesis of two clusters, all runs split the dataset into samples from the 'Bianca' and from the 'Bionda' and most individuals were correctly assigned with membership >0.9. With three or more clusters the 'Bionda' split into two different ecotypes whereas the cluster including most of the 'Bianca' was very robust, showing that this breed was the most different but also the most homogeneous within the dataset.