Anatolian black pine (P. nigra Arnold.), an economically important conifer taxa is a widely distributed tree species in Turkey. In the present study, the relationships between the potential geographical distribution of Anatolian black pine and some primary environmental factors were investigated by using Generalized Additive Models (GAMs) in the inner parts of central black sea region of Turkey. For this purpose, the current presence/absence data of the species as response variable in native stands were recorded during the field studies in summer 2014 at 453 sampling plots (about 100m X 100m) in Aydınca (Amasya) district. Black pine was recorded as presence in a total of 111 plots. On the other hand, the environmental variables to each sampling plots were obtained from the digital elevation model (DEM). The results of GAMs showed that elevation, climate and bedrock formations were the most influential factors on the potential distribution of the species in the district, respectively. An evaluation of all results collectively indicates that elevation appears to be most important factor for the potential distribution of the species in the region. In fact, this conclusion is considered to be result of climatic factors depending on the elevation. Also, it has been concluded that bedrock formations account for the other important environmental factors that might influence the distribution of the species in addition to elevation and climatic factors.