Fumigation with phosphine gas is the primary method of controlling stored grain pests. In Turkey, phosphine has been used extensively since the 1950's. Even though high levels of phosphine resistance have been detected in several key stored products pests across the world, it has never been studied in Turkey despite this long history of phosphine use. High-level phosphine resistance has been detected and genetically characterised previously in the rust red flour beetle, Tribolium castaneum in other countries. Since this pest is also a common problem in stored grain environment in Turkey, the current study was undertaken for the first time, to investigate the distribution and strength of phosphine resistance in T. castaneum. Four strains of T. castaneum were tested through bioassays for determining the weak and strong phosphine resistance phenotypes on the basis of the response of adults to discriminating phosphine concentrations of 0.03 mg/L and 0.25 mg/L, for 20 hour exposures respectively. Phenotype testing showed all strains exhibited some level of phosphine resistance with a maximum level of 196 fold. Sequencing and genetic testing of seven field-collected strains showed that all of them carried a strong resistance allele in at the rph2 locus similar to the one previously reported. Our results show that strong resistance to phosphine is common in Turkish strains of T. castaneum.