Weak Galois cohomology can be used to classify all \( F \)-algebras \( A \) containing \( B \) such that \( A \) is weakly Azumaya with respect to \( B \), where \( K/F \) is a finite Galois extension and \( B \) a central simple \( K \)-algebra. There is a one-to-one correspondence between weakly Azumaya algebras with respect to \( B \) and weakly Azumaya algebras with respect to \( \tilde{B} \) for any \( \tilde{B} \) equivalent to \( B \) in the Brauer Group of \( K \). Moreover, it will be shown that if there exists a weakly Azumaya algebra with respect to \( B \) then there exists a Frobenius algebra \( A \) which is weakly Azumaya with respect to \( B \).

This paper is an extension of the work on weakly Azumaya algebras by D. Haile and L. Rowen in *Weakly Azumaya Algebras* (J. Algebra, 250:134-177, 2002). (Received September 20, 2017)