Supernilpotent centralizers

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Algebras whose polynomial clones are equal, such as the Boolean algebra and its corresponding Boolean ring, are said to be polynomial equivalent. In the 1990's Idziak and McKenzie asked whether there are only countably many finite Mal'cev algebras (algebras that generate a congruence permutable variety) up to polynomial equivalence. For proving that the answer is yes it would suffice to show that the following question has an affirmative answer:

> *Is the clone of polynomial functions on every finite Mal'cev algebra determined by finitely many relations?*

We use higher commutator relations and a strong version of nilpotence to obtain some positive results. As particular consequence we get a finite implicit description of polynomial functions on finite groups with abelian Sylow subgroups, as well as on finite commutative rings with 1.