In 2008 Maurin proved that given $n$ multiplicatively independent rational functions $\varphi_1(x), \ldots, \varphi_n(x) \in \mathbb{Q}(x)$, there are at most finitely many $\alpha \in \mathbb{Q}$ such that $\varphi_1(\alpha), \ldots, \varphi_n(\alpha)$ satisfy two independent multiplicative relations. This statement is an instance of more general conjectures of unlikely intersections over tori made by Bombieri, Masser and Zannier and independently by Zilber. We consider a positive characteristic variant of this problem, proving that, for sufficiently large primes, the cardinality of the set of $\alpha \in \overline{\mathbb{F}}_p$ such that $\varphi_1(\alpha), \ldots, \varphi_n(\alpha)$ satisfy two independent multiplicative relations with exponents bounded by a certain constant $K$ is bounded independently of $K$ and $p$. We prove analogous results for products of elliptic curves and for split semiabelian varieties $E^n \times \mathbb{G}_m^k$. 