Let $a, b, c, d$ be given nonnegative integers with $a, d \geq 1$. We consider the Diophantine equation

$$\prod_{k=1}^{n} (ak^2 + bk + c) = dy^l, \quad \gcd(a, b, c) = 1, \ l \geq 2,$$

where $ax^2 + bx + c$ is an irreducible quadratic polynomial. We will show how one can obtain a computable sharp upper bound to $n$. Using this bound, we entirely prove some conjectures set by Amdeberhan, Medina and Moll in 2008. Moreover, we will the solutions of other related equations. This is a joint work with B. He and S. Yang. (Received December 08, 2011)