Given a standard graded polynomial ring over a commutative Noetherian ring $R$, we prove that the cohomological dimension and the height of the ideals defining any of its Veronese subrings are equal. This result is due to Ogus when $R$ is a field of characteristic zero, and follows from a result of Peskine and Szpiro when $R$ is a field of positive characteristic; our result applies, for example, when $R$ is the ring of integers. (Received May 12, 2020)