Finitely generated ideals in rings of integer-valued polynomials

Let D be an integral domain with field of fractions Q, and E be a finite non-empty subset of D; we set Int(E,D) = $\{f(X) \in Q[X] : f(E)$ is a subset of D $\}$, the ring of integer-valued polynomials on D with respect to the subset E. Recall that a Prufer domain is an integral domain in which every non-zero finitely generated ideal is invertible. It is known that D is a Prufer domain if and only if Int(E,D) is a Prufer domain, so that the Int(E,D) construction yields a method for producing new Prufer domains from old. In this talk, we determine the relationship between the minimum number of generators needed for finitely generated ideals of D to that of Int(E,D). As a corollary, we show that iterating the Int(E,D) construction cannot produce a sequence of Prufer domains whose finitely generated ideals require an ever larger number of generators.