

Be Cautious Using the Apple (*Malus*) Paradigm in Under-utilized Crop Development

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Abstract

In the mid- and late 19th century there was a mass planting of apple seedlings (from a narrow germplasm base) in the developing US, as homesteaders were required to plant apples as a land ownership condition. As a result of displays at county fairs and evaluation by nurseries, a few of the outstanding seedlings were grafted onto seedling rootstocks and sold by the millions. The names of these are familiar throughout the world – Golden Delicious, Red Delicious, Jonathan, Rome and more. We now see that vegetative propagation and marketing by variety name set back apple improvement and ensured failure of many fruit farms that attempted to stretch the environmental adaptability of these genetically limited varieties. The “discovery” of the center of origin of apples in Central Asia and the presence there of wild fruit harvested from forest trees, local varieties propagated directly from wild trees and also global varieties has opened our eyes to the biological diversity present in the species and inspired us to use the apple story to engage Midwest American families in conservation and utilization of biological diversity. We also want to empower individuals to create and select plants of personal interest. The Midwest Apple Foundation, in collaboration with Dawes Arboretum (Newark, OH) and Ohio State University is focusing on combining disease-resistance, diverse horticultural fruit traits, and late bloom time into an array of new local varieties, marketed by their characteristics. We believe the intrinsic value of genetic diversity, and its conservation, will become real to people, as will the practical opportunity to successfully grow diverse backyard apples and to discuss differences among cultures in *Malus* preferences.