Concerns about the future of the pollinator population have led to the possibility of the registration for the neonicotinoid, imidacloprid, not being renewed for pesticide use in the United States. Supply and demand equations are designed to develop a model that projects apple bearing acreage, yield, imports, exports, residual supply, domestic use, and production to solve for market price. The model structure reflects the time it takes supplies to respond for a perennial crop. Four scenarios potential effects if this chemical is no longer permitted in the United States, including possible increases in production costs, reduced yields and restricted imports. Results are compared with the baseline estimates. All of the scenarios result in an increase in price during most of the projected years, with higher gross producer revenue, even if yields are lower, and suggest consumers will have to pay more for apples if imidacloprid’s registration is not renewed.