

GMO Trees: Substantial promise but serious obstacles to commercialization

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Summary

This paper assesses the potential of transgenic trees to generate substantial financial returns in an environment where there are substantial investment costs in research and development, deregulation and deployment. The obstacles formidable and in addition to the usual research and development costs, include the costs of obtaining requisite intellectual property rights. Also, there are substantial costs to achieve deregulation, and some evidence of deregulatory slowdown in the U.S., and cost of product deployment. The product deployment costs are likely to be higher than for other products, e.g., traditionally improved seedlings, due to substantial and widespread opposition (stigma) to GE in general and transgenic trees particular. Finally, as with all trees, the payoff time (harvest) is delayed longer than most other investments and the financial returns adversely affected by the delay. Additionally, the financial costs and benefits may vary substantially by country and region. Some evidence suggests that deregulation costs may vary substantially by country. Additionally, the perceived “stigma” costs are likely to vary greatly among regions thereby providing better opportunities in some markets than others. If deployment depends upon the financial and economic returns, one might expect widespread adoption among some countries, e.g., China and Brazil, where the net benefits are large, and little or no adoption among countries where the net benefits are small, e.g., countries of the EU. However, at this time the final success of GE trees remains to be witnessed. Although some firms have withdrawn entirely from the area of tree GE research, other firms continue to invest substantial sums in tree GE development presumably anticipating eventual payoffs. It remains to be determined whether the technology ultimately is broadly accepted, accepted only regionally or fails globally.