The law of unintended consequences seems intertwined in every human endeavor. In the South, two classic vegetative examples of the law are kudzu and johnsongrass. Both plants twine through southern culture, stereotype, literature, scenery, and agricultural research. Amazingly, their rise from nobodies to stars only took about a century. Will they soon have company?

To live in the South in summer is to see kudzu as a green, choking veil covering trees more than 98 ft tall. One can easily find old fields in every southern state completely covered chest high with kudzu vines and leaves while utility rights of way are choked by johnsongrass extending to the horizon. These plants are “poster children” for what are today called “invasive species” (i.e., plants that can escape confines or outcompete locally adapted species).

Both of these famous invasives were introduced to the South with the best of intentions. A Delta planter introduced johnsongrass for forage in the 1830s. A century later, in the 1930s era of early erosion control efforts, kudzu was introduced because of its positive virtues: swift growth, ability to quickly cover bare soils, and absence of natural pests. In each case, the introductions seem to have not considered that negative unintended results might occur if plants ignored property boundaries (Neofotis, 2001).

Indeed, negative results after introduction came so quickly and became so severe as to be deemed catastrophic. Johnsongrass is considered one of the world’s “10 worst weeds,” and kudzu can seem impossible to control. Both plants can quickly recover even when infestations are subjected to chemical and mechanical controls (Holm et al., 1977; Paterson, 2009).

Unintended results

Catastrophic unintended results are strikingly well depicted in a famous Walt Disney film from 1940. Even today, most Americans know the film by name: Fantasia. The “Sorcerer’s Apprentice” segment of the movie highlights the dangers of unintended consequences (view the segment at www.youtube.com/watch?v=mHTnJNGvQeA). The movie was made just as Kudzu control problems started becoming an academic concern.

In “Sorcerer’s Apprentice,” we see Mickey Mouse chop a broom into small pieces that rest, rise, and are unceasingly regenerated as clones of the original broomstick. We see what many fear can happen with today’s “feedstock” plants. Their concerns arise in parallel with a worldwide search for plant material suited to or bred for raw material for energy crop production.

Background

Some of your clients might be considering growing energy crops. Such persons might ask whether the risk of invasiveness of kudzu and johnsongrass is more or less than that of reed canary grass, giant miscanthus, giant reed, and switchgrass (among others) considered for energy crops. The question can’t be answered with a simple “Yes” or “No.”

As with all issues in which many competing interests interact, strong opinions are held. Answering knowledgeably means more than just the agricultural background must be considered. This is because competing national policies, scientific interests, and business interests can reasonably agree on principle but differ on detail.

First, competing directions seem to exist between new national policy introduced in a 2006 presidential address and ideals in a 1999 U.S. presidential executive order attempting to protect the country from invasive species. In the first, when introducing a renewable energy initiative,