

Biofuels: the good and the ugly



The Problems With Biofuels

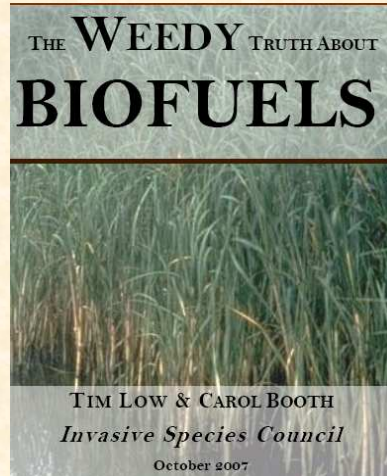
- Tech. Availability¹
- Markets
- Lots of land and water²
- Soil depletion³
- Chemical use⁴
- Competition food vs energy⁵
- Health concerns⁶
- Limited greenhouse benefits⁷
- Impacts on biodiversity⁸
- **Weed risks⁹**



HI Total use: 2,153 MM gals petroleum
 20%≈634MM gallons ethanol
 = 3170MM gals water
 620 gal per acre sugar cane currently
 1 MM acres of sugar cane needed
 1.3 MM acres in Ag land in HI

Biofuel crops = looking for weedy traits

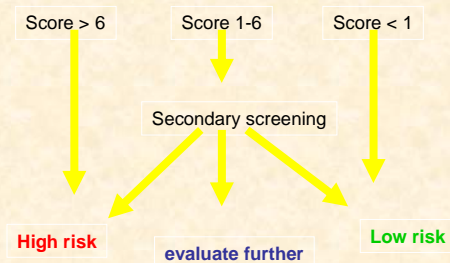
- High biomass production
- High fruit and seed production
- Fast growth
- Experimental crops
- Not all biofuels are invasive/weedy
- 60% High Risk



Characteristics of the Hawaii Pacific Weed Risk Assessment (HPWRA) System

Assign species score based on 49 questions

- Objective
- Science-based
- Repeatable
- Transparent
- Reliable



Daehler et al. 2004. Conservation Biology 18:360-368

Recommendations

- Don't assume biofuel production is benign.
- Decision makers should demand complete information.
- If feasible avoid invasive species.
- If invasive species are used, employ "polluter pays" policy
- Do not plant large areas with biofuel crops before technology is developed
- Do not allow planting of invaders near or conservation of important biological areas

