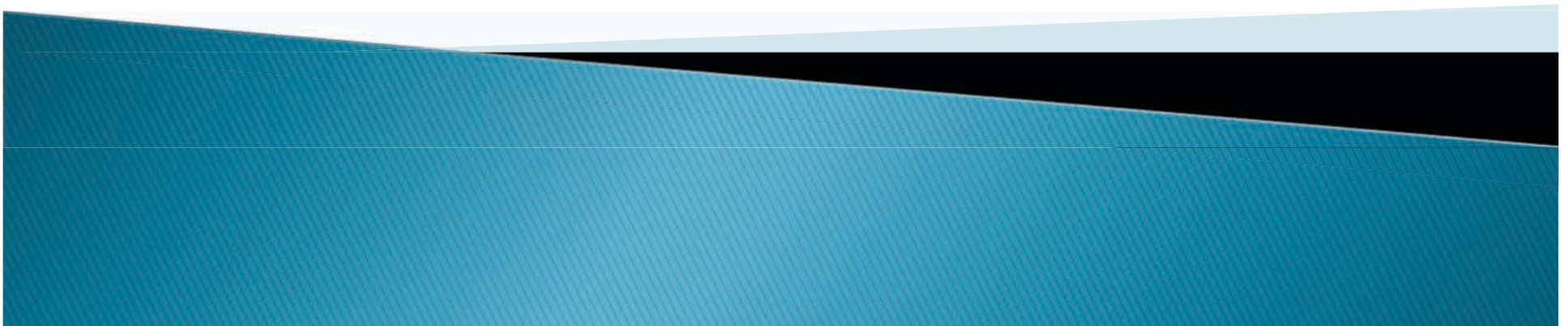



# Recent Biopiracy Cases

Tomato Wild Relatives  
Sorghum Genes  
Avon Cosmetics  
Lúcuma

Edward Hammond  
Research Consultant  
Third World Network

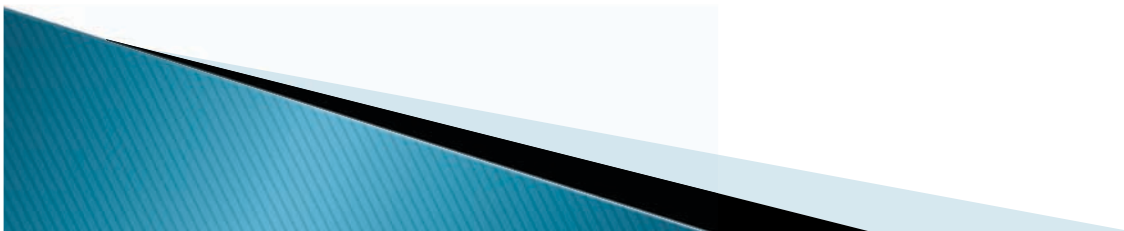


# Tomato Wild Relatives


- ▶ Center of diversity in Andes. ~17 wild relative species.
  - ▶ Few recent collections. *Ex situ* diversity important, especially Tomato Genetic Resources Center (University of California).
  - ▶ Not in ITPGRFA Annex.
  - ▶ Relatives are introgressed with cultivated tomato, traits used in breeding via molecular markers.
- 

# Tomato Wild Relatives


- ▶ EU-SOL program to “*extract the under-exploited natural biodiversity present in [tomatoes]*” has gathered *ex situ* collections from US, Netherlands, Israel, Italy, etc.
- ▶ Aim: “*new elite genotypes to boost our knowledge and provide a blueprint for novel high quality varieties to be developed by EU breeding companies*”
- ▶ IPR claims – on genes – by Monsanto, Syngenta, other Dutch and US companies and universities, most cooperating with EU-SOL.
- ▶ Genes from *S. habrochaites*, *S. pimpinellifolium*, *S. pennellii*
- ▶ Syngenta *S. habrochaites* claim *doesn't identify source*.
- ▶ Attempts to “reach over the top” of national access laws with patent claims.



# Sorghum Gene Claims (2)

- ▶ African native grass cultivated for food and feed.
  - ▶ Carried to South Asia and China many years ago.
  - ▶ Hybridizes with (weedy) relatives in many places.
  - ▶ Of high interest to biofuel breeding programs in warm temperate and tropical climates.
  - ▶ Potential for biomass, grain, and sugar biofuel (latter process largely identical to sugarcane, except seed propagated).
- 


# (1) Kaoliang sorghum gene

- ▶ Texas A&M patent application, allows interspecies hybridization with grasses including sugarcane
  - ▶ Source accession acquired by East German scientists at a Chinese experiment station in 1956.
  - ▶ No record of prior breeding, or why it was selected.
  - ▶ Passed from IPK Gatersleben to Cambridge University (late 1980s).
  - ▶ From Cambridge to Texas A&M in 2003 or 2004.
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## (2) Bolivian sudangrass gene

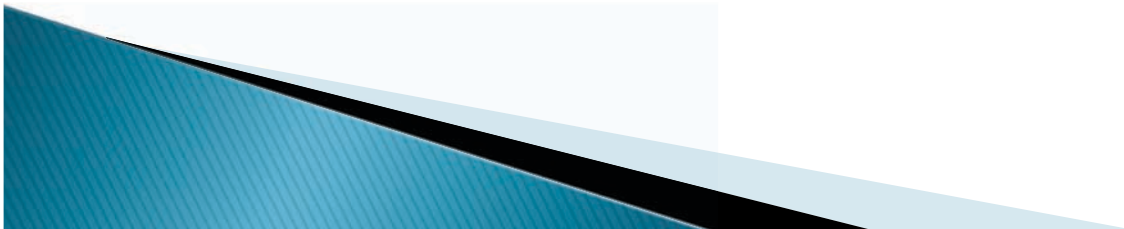
- ▶ From sudangrass collected by Kansas State University in Bolivia in 2007. (*S. bicolor* subspecies)
- ▶ Gene confers resistance to commonly used ACCase-based herbicides, e.g. quizalofop.
- ▶ Patented and licensed to DuPont.
- ▶ Backcrossed into sorghum cultivars.
- ▶ DuPont trade name “Inzen A II”, field trials underway, originally announced for sale this year.

# The Avon Lady runs amok in Asia

- ▶ Iconic cosmetics firm has taken interest in Asian medicinal plants as cosmetic ingredients.
  - ▶ Global skin care market is ~US \$90 billion/year, or 3–4x UNDP's estimate of annual cost of providing universal clean water and sanitation.
  - ▶ Projects high-tech, laboratory image, however, reliant on natural products.
- 

# Avon's Objects of Desire

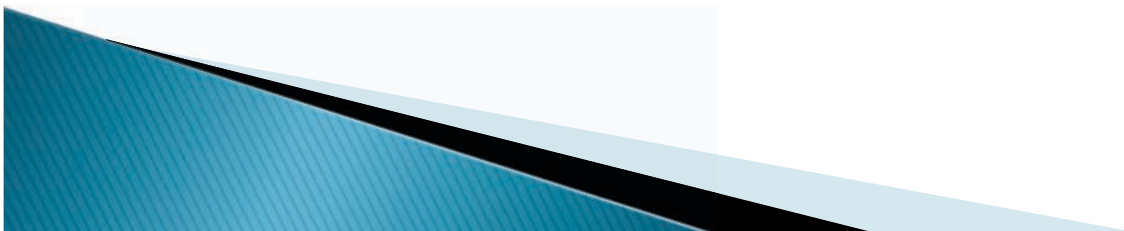
- ▶ Six patent and patent applications covering sixteen Asian species.
- ▶ All applications list US-based inventors, assigned to US corporation.
- ▶ A number of the plants have traditional use on skin in one of more countries, including
  - *Amorphophallus campanulatus* (elephant foot yam)
  - *Sapindus rarak* (lerak, “soap nut”)
  - *Sesbania grandiflora* (agati, agathi)





# Lúcuma – flagship product of Perú

- ▶ Peru native strongly associated with Peruvian history and identity. Found at earliest archaeological sites.
- ▶ *Pouteria lucuma* is similar to, but not necessarily closely related to sapotes (mamey, canistel).
- ▶ Named in 2005 as one of 10 flagship product by the Peruvian government:  
*“Flagship products of Peru are products or cultural expressions whose origin or transformation has occurred on Peruvian territory with characteristics that represent the image of Peru outside of the country.”*
- ▶ Rutgers University (US) claims use of lúcuma seed oil on the skin, for pharmaceutical and quasi-pharmaceutical uses, commercial relationship with Lipo Chemical.



# Lúcuma claim and traditional use

- ▶ International patent authority search uncovers no relevant traditional use or historical publications.
  - ▶ But relatively perfunctory background search reveals extensive documentation of traditional and contemporary use of lúcuma on skin.
  - ▶ 1864 and 1888 medical texts, 1888 chemical texts all citing (all European), etc.
  - ▶ Peru's 1995 technical report to FAO on genetic resources. (Leipzig conference)
  - ▶ Rutgers ironic renaming of lúcuma as “Incan golden fruit”.
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