



*Plant Biotechnology Academic Subject Certificate
at
Windward Community College*

ASC Plant Biotechnology (26 credits)

- Produce skilled biotechnologists (workforce)
- Promote agri-bioprocessing entrepreneurs
- Prepare academic transfer to higher degrees in biotechnology, bioinformatics, agriculture, horticulture, botany, biology, aquaculture, medicine and pharmacy.



Plant Biotechnology Program & Facilities supported through USDA grants



1. Kuhi La'au - Tropical Plant & Orchid Identification Facility



2. Tissue Culture and Plant Biotechnology Laboratory



3. Climate-Controlled Greenhouse



4. Bioprocessing-Medicinal Garden Complex

Laboratory Activities



- BOT 101 (General Botany/Lab)
- MICRO 140 (Microbiology Lab)
- AG 152 (Orchid Culture)
- BOT 199/299 (Independent Study)
- BOT 205 (Ethnobotanical Pharmacognosy)
- BOT 210 (Phytobiotechnology)
- BIOL 275 L (Cell and Molecular Biology)



Student Research Internships

Collaborative Research with: UHM, HARC, Private Industries



Impact:

- 45 ASC-PB graduates to date (38% are Native Hawaiians)
- 42% of graduates have entered agribiotech workforce
- 76% of graduates have transferred or received higher degrees
- 24% of graduates have become agribioprocessing entrepreneurs



Impact (cont.):

Collaborations with:

- HARC (15 students have been trained in biotech research)
- Biotech industries (30 students have been employed/become entrepreneurs)
- UHM & UHH (34 students have been transferred)
- UAF-Kuskokwim (2 students, Ethnobotany & Pharmacy majors)

Impact (cont.):

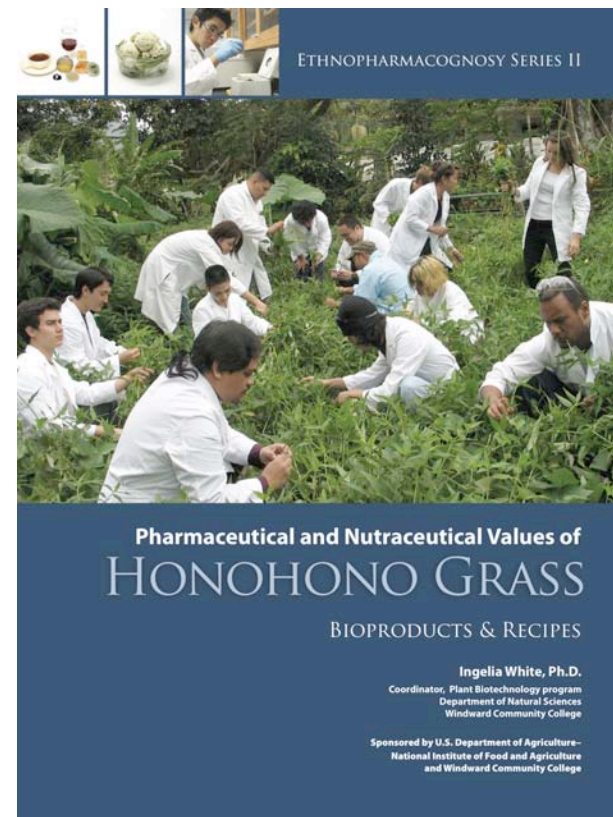
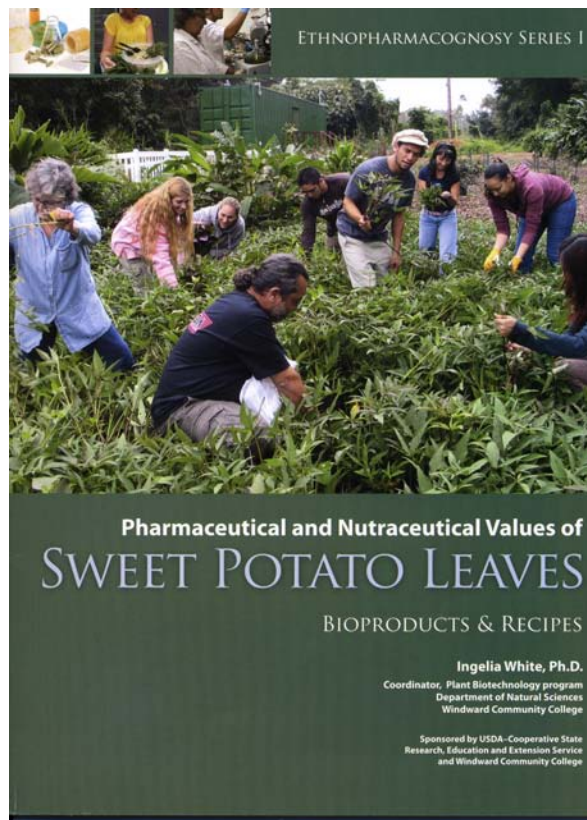
- 8,000 AA Liberal Arts students have been educated through courses offered for the ASC-PB
- 2000 high school students and community members have gained awareness of pharmaceutical/nutraceutical research and bioproduct manufacturing through BMGC since its opening in June 2007



Impact (cont.):

Publications:

- **2 volumes of Ethnopharmacognosy Series**
http://windward.hawaii.edu/people/Ingelia_White/Sweet_Potato.html
http://windward.hawaii.edu/people/Ingelia_White/Honohono_grass.html
- **16 scientific articles**
- **12 scientific posters**



Future direction:

- Number of students declaring major in Plant Biotechnology has increased by 33,3%
- In Fall 2010, ASC-PB will be changed to a BOR-approved Certificate of Achievement in Plant Biotechnology



BOT 105 students posing w/ USDA-SPEC Program Officer, Dr. Gregory Smith



BOT 160 students posing w/ USDA-NIFA Program Officer, Dr. Saleia Fa'amuli →



Thank you

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