

# MUSHROOM RESEARCH AND COMMUNITY ACTIVITIES IN NAMIBIA

## ACEMM III 2012 CONFERENCE ON MUSHROOMS: FOODS AND NEUTRICEUTICAL FOR AFRICA University of Namibia

Mushroom activities at the University of Namibia (UNAM) is based at the Sam Nujoma Marine and Coastal Resources Research Centre (SANUMARC), Ogongo campus and the Zero Emissions Research Initiatives (ZERI) at main campus

- ZERI is a Regional project for Africa launched in 1994 by the United Nations University
- ZERI project and SANUMARC are designated Node of excellence in Mushroom farming
- Supporting Institutions / Donors for mushroom activities in Namibia
- NEPAD: The New Partnership for Africa's Development UNDP : United NedBank Namibia, Standard Bank of Namibia, Rössing Foundation
- Nations Development Programme
- GEF: Global Environment Facility

### RESEARCH FOCUS

- Exploring utilization of various organic substrates for mushroom production
- Pasteurization techniques of different substrates
- Mushroom cultivation under different climatic conditions
- Medicinal properties of indigenous mushrooms
- Genetic diversity of the endemic *Ganoderma* species in Namibia
- Evaluation of mushroom houses constructed from local materials
- Cost-benefit analysis of mushroom production in rural communities.

### COMMUNITY OUTREACH

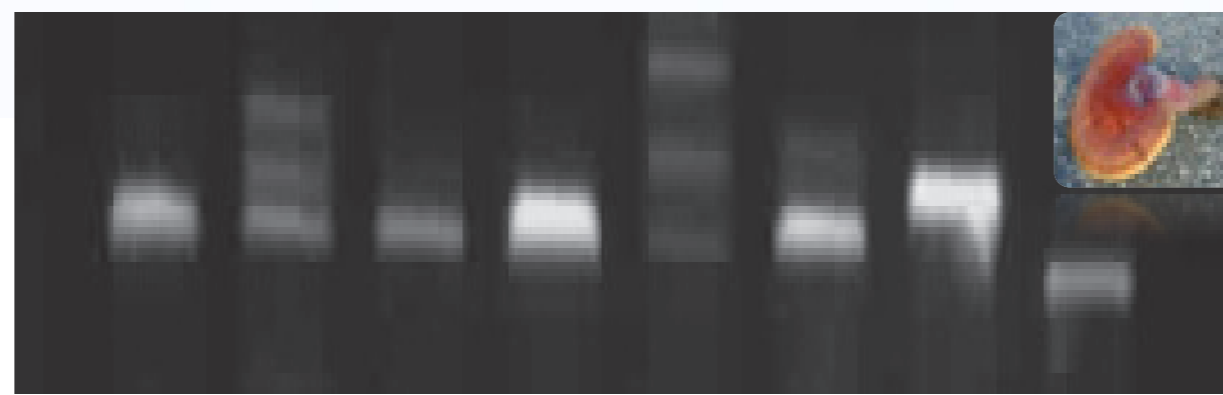
- Individuals & groups interested in mushroom cultivation are given training in cultivation techniques
- Trainings are aimed at promoting cultivation, consumption & medicinal uses of mushrooms in Namibia
- Trainees are encouraged to establish community projects
- Alternative Mushroom Houses for rural communities



Selected mushroom related publications for local communities

### BENEFITS OF MUSHROOMS

- **Source of nutrients:** Rich in protein, vitamins and essential micronutrients such as iron, calcium, sodium, potassium and phosphorus.
- **Medicinal value:** *Ganoderma* in Namibia is traditionally used for the treatment of liver problems, heart condition, asthma, cancer, high blood pressure, arthritis and veterinary applications
- **Source of income for rural communities:** Individuals and SMEs to generate income.
- **High production on substrates:** Ability to grow on substrates which are byproducts of other agricultural processes.



Gel electrophoresis of the amplified rDNA internal transcribed sequence 18S region of the *Ganoderma* species Kandhila-Muandingi (2011)



Fruiting bag of oyster mushroom at Unam, Main campus, Windhoek © Martha Hausiku, 2010

### CULTIVATION OF GANODERMA LUCIDUM

- The mushroom *Ganoderma* is an indigenous species found in the wild in Namibia
- Locally used for the treatment of liver problems, heart condition, asthma, cancer, high blood pressure, arthritis, boosting immune systems in HIV positive people & veterinary applications
- The *Ganoderma lucidum* fruits being cultivated at the University of Namibia main campus
- The project is funded by NEPAD/SANBio
- For human immune boosting.
- Construction of a technology Park is underway
- Fruit bodies will be processed into tea & capsules in Techno-park



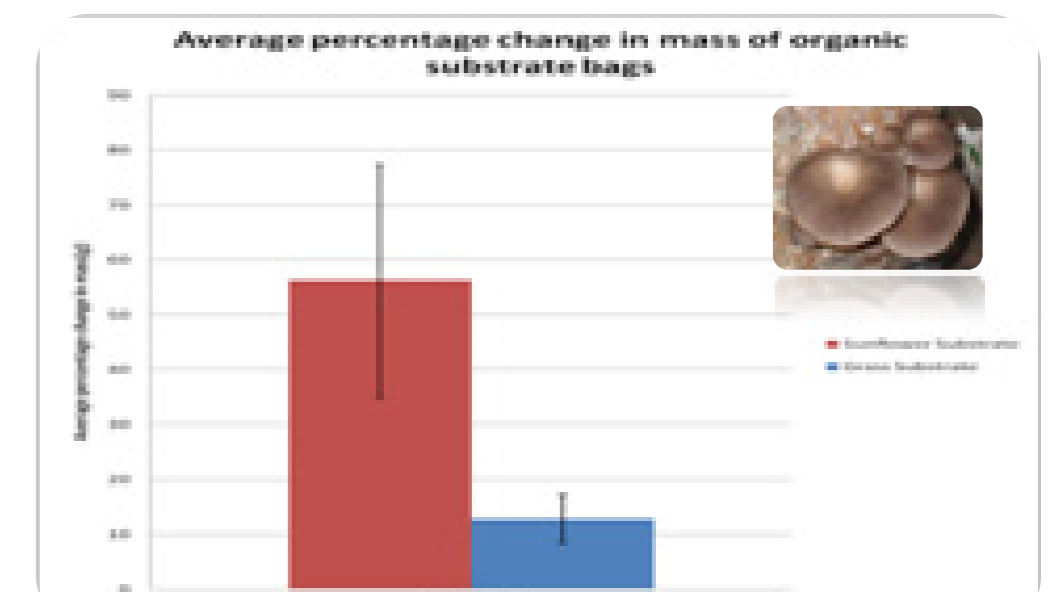
*G. lucidum* in the mushroom house at UNAM main campus ©Kadhila-Muandingi, 2011

### ALTERNATIVE MUSHROOM HOUSES

- Constructed from local materials such as thatching grass clay bricks, reeds etc.
- Moisture retention & ventilation are the most important aspects of a mushroom house



*Ganoderma* mushroom house at UNAM main campus ©Kandhila-Muandingi, 2011



Effect of different organic substrates on the growth of *Pleurotus eryngii* (Oyster mushroom)



Trainees posing with facilitators in Katima Mulilo, North east of Namibia © Martha Hausiku, 2010



Local mushroom house at Katima Mulilo, North-Eastern Namibia ©Martha Hausiku, 2010