



JUNCAO TECHNOLOGY

KWAZULU-NATAL DEPARTMENT OF AGRICULTURE AND RURAL DEPARTMENT

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BACKGROUND

- The Juncao Mushroom Project was launched in the KwaZulu-Natal Department of Agriculture and Rural Development (KZNDARD) in January 2005.
- The launch was made possible through the partnership between the Fujian Agriculture and Forest University (FAFU) - China and DARD, this partnership was facilitated by His Majesty the Zulu King, the provincial political leaders and senior DARD officials.
- The primary purpose of the Project was to establish a sustainable Juncao Mushroom Industry throughout KZN with the direct beneficiaries being the ‘poorest of the poor’ within rural communities – with unemployed women, child-headed households and youth being given priority.



BACKGROUND

- Raw materials used for mushroom production include Juncao grass, sawdust, sugar cane bagasse, wheat straw and hominy chop.
- On the initiation of the project, it was noted that the use of mushrooms, both as a staple food and as 'nutraceutical' has been part of the Chinese culture for thousands of years.



BACKGROUND

- This created a high demand for the product as a good cash crop for the development of the poor rural communities and creating job opportunities, in China.
- However, in KZN a significant amount of time and energy was spent introducing the concept and promoting the use of mushrooms in the local diet.
- Currently, the demand of mushroom by our beneficiaries is higher than the supply, the challenge is on meeting the demand.



PROGRESS ON MUSHROOM PACK PRODUCTION

- A total of 145 000 mushroom packs are produced annually
- Cedara inform the Advisory Services on how many packs are available and they respond with information on which Districts would collect packs
- Through Advisory Services fully colonized packs are distributed amongst 11 districts



PROGRESS ON MUSHROOM PACK PRODUCTION

From 2009 to 2023 the Cedara Mushroom Base has produced 1 322 129 mushroom packs.

Table 1: Cedara Mushroom packs production

| Year | No. of packs produced |
|--------------|-----------------------|
| 2009/2010 | 89 992 |
| 2010/2011 | 98 502 |
| 2011/2012 | 75 189 |
| 2012/2013 | 106 231 |
| 2013/2014 | 85 300 |
| 2014/2015 | 13 328 |
| 2015/2016 | 79 954 |
| 2016/2017 | 75 301 |
| 2017/2018 | 94 286 |
| 2018/2019 | 112 720 |
| 2019/2020 | 140 129 |
| 2020/2021 | 61 040 |
| 2021/2022 | 141 124 |
| 2022/2023 | 149 033 |
| TOTAL | 1 322 129 |



ACHIEVEMENTS

- One mushroom pack produced at Cedara produces 500 g of fresh mushrooms. In average our farmers sell 200g of fresh mushroom for R15.00. Therefore, for 1kg of fresh mushrooms, farmer can receive R75. From 2009 to 2023 the Cedara satellite base has produced 1 322 129 mushroom packs that had a potential yield of 661 064.5 kg fresh mushrooms for the beneficiaries of the FSG's.
- DARD has therefore indirectly by producing the mushroom packs, injected a potential income of R49 579 837,5 into KZN rural communities.



DISTRICT BASED MUSHROOM PROJECTS

- There are 156 mushroom Food Security Gardens across the province

Table 2: KZN food security gardens and the number of trained farmers

| DISTRICT | NR OF EXISTING FSG's | N0. farmers trained (simplified method) | DISTRICT MUSHROOM ADVISORS |
|----------------|----------------------|---|------------------------------|
| AMAJUBA | 5 | 25 | Mr. Madela |
| ETHEKWINI | 13 | 24 | Miss D. Sabela |
| HARRY GWALA | 6 | 26 | Mr. L. Mokgwamme |
| ILEMBE | 13 | 400 | Mr. N. Gebashe |
| KING CETSHWAYO | 33 | 86 | Miss T. Shabalala |
| UGU | 4 | 0 | Miss S. Mbotho |
| UMGUNGUNDLOVU | 16 | 50 | Miss T. Lembethe |
| UMKHANYAKUDE | 16 | 0 | Miss N. Zungu |
| UMZINYATHI | 12 | 25 | Miss N. Vilakazi |
| UTHUKELA | 12 | 37 | Miss T. Sibindi |
| ZULULAND | 26 | 70 | Mrs B. Buthelezi & Mr F Dube |
| TOTAL | 156 | 743 | |



ACHIEVEMENTS

- A total of six Research Bulletins have been produced on Mushroom Production and related fields.
- One Research Bulletin on Poisonous mushrooms has been translated into isiZulu.
- A Mushroom Production Manual has been produced.
- Formal training courses have been offered at the Cedara Mushroom Centre.



ACHIEVEMENTS

- Continuous training is given to the beneficiaries at the FSG's as and when the need occurs.
- Farmers are current trained to produce their own mushroom packs
- Graduates, interns, Cedara college students, EPWP staff are continuous trained.



ACHIEVEMENTS

Recent publication on Ilanga news paper, a mushroom farmer sharing how the project changed her life and the willingness to help others

20 ILANGA • OCTOBER 5-6, 2023

Zindaba

Usefuna ukucathulisa nabanaye ngebhizinisi lamakhowe

UNKz Ndlovu uthi kasenele isibalo sabalimi bawo eNingizimu Afrika

NONHLAKANIPO SHINGA

UNESIFISO sokufundisa abanye ngebhizinisi lokuthala amakhowe njengoba ethi ukhulwa wukuthi lalabo zabathali bawo sinesona kakhulu eNingizimu Afrika.

UNKz Sthembile Ndlovu (57), ungowokuzalwa eShewe, kodwa usezine KwaDukuza ngemsa yokuthi yilapho ethole khona indawo abengokwazi ukuzala kuyona ibhizinisi lakhe.

Uthi naye akakholwa ukuthi ngosuku usokwazi ukakhazisa ama tray alinganiselwa ku-200, awakambise ezitolo ezinkulu ezindaweni ezahlukene.

Uthi ngebhizinisi engena kulo mkhaka wezimoto, wayengakaze nziqose othale amakhowe.

WAKHUTHAZVA NGBONNYANGO WEZOLIMO UKUTSHALA AMAKHOWE

Uthi uqale ukuba nothando lwezolimo ngo-2015, okuyilapho esale khona ngokuthala amaklabishi, leipinashi nezinye izithalho, aidayise.

Phambili benzenza umsebenzi wokuthengisa ngomshwalane kodwa ngemina ngwushiyi, ngoba ngifuna ukwenza okwehlukile.

Ngize sengemina otholeweni obungaphantsi kukaMasipala Umalazi lapho bekugqeshwa khona abantu abasha ngezolimo.

Yilapho ngiqale khona ukuthala, Kwafika abomnyango bezokuthalaza ukuba siqale izihlangano, futhi alilime ngokuhlala ngemina, babesebenzika imibono yamakhowe.

Ngaba besihlala ngokwehlukana, futhi siqhelelene, bekuphoka ukuba uzithalele wena, okuyilapho ngibe sengemina amakhowe amaningi ngosuku.

UNKz Sthembile Ndlovu ephethe imikhqizo yebhizinisi lakhe i-Uluthando Agricultural Projects esitolo saKwaSpar, KwaDukuza. Kwezingezansi nguyena UNkz Ndlovu nomsebenzi wakhe.

UMKHQIZO WAKHE UWUPHARELA IZITLOLO EZILONSHWAYO KULELI

Uthi ibhizinisi lakhe, i-Uluthando Agricultural Project, linakho ngalowo sikhathi.

Ng-2019, uqale jeli bhizinisi lapho abeswadayisela abantu abahlakase amakhowe akhe.

Ngize zingithala ucingo obulwela kwabakwaSpar waKwaDukuza, becula ngabada- yisele amakhowe, bafuna ama- tray zwi-100 ngosuku.

Ngikwazi ukwenza lokho, ngemina sengeminezinye izitolo ebezifuna ukuthi ngizifakele amakhowe," esho.

Njengamanje uphakela iSpar waKwaDukuza, iFood Lovers esendaweni yabada izambane ikapondo eSahlito, iNature's Best Fruit and Veg, iIdeals Fruit and Veg noFarm Choice Fruit and Veg.

Uthi kunenqwaba yezitolo ezifuna umkhqizo wakhe kodwa ngemina yezingqinamba ezithile, ugena engakwazi ukufinyelela nakusona.

UTSA UKUTHOLA INDAWO ENKULU YOKUSEBENZELA

"Indawo engisebenzela kuyona imane kakhulu.

Nokho ikhona ipulazi engilitholile engizolikhokhela njalo ngosuku, inkqubo wukuthi kalibiyelwe futhi kalawo ngezi.

Lokho kuzokwenza kube nzima kakhulu ukusebenza kulona kanti ngeminezihlelo zokuthalaza leli bhizinisi."

Uthi kunezitolo eziseRichards Bay, eMpangeni, eMgungundlovu nakwezinye izindawo ezifisa ukuthi afake kuzona lo mkhqizo wakhe kodwa akakwazi, ngemina yokuthi umsebenzi usuke ube muniyi kakhulu.

"Ninabantu esengibagege- shile ukuba basithalele amakhowe abo, mina besengithenga kubona, ngilambise kulezi zindawo ezisuke zifuna umkh- qizo, kodwa ngifisa ukuba babe baningi abafunda ukuthalaza ngoba imakethe ikhona, futhi inkulu kakhulu."

AMAKHOWE AFUNA UKUCHELELWA NJALO

Uthi vize engene kulo mkhaka engazi lotho ngawo, uzilaphile ngokuthola ulwazi nezindlela ezishephele futhi ezemukelele zokuthalaza amakhowe, njengoba ethi kuhambisana nenhlazeko nokumakhelela okuningi.

Amakhowe ayahlutha njengoba efuna ukunikwa, achelelwe zonke izinsuku, okwenza ngemina ngingemina isikhathi esiningi, lekhuthakazi zokugqesha abanye abantu njengoba nomsebenzi ukhala.

"Njengamanje nginabantu abanye abayitsho, engisebenzi- sana nabo ngemina yokuthi kangikabi nayo indawo engise- benzela kuyona ngokugcwele."

Uthi lafiso zakhe esikhulu wukuthi athole isitifiketi sokukwazi ukugqesha, yikhona ezokhigiza abantu abazothola izitifiketi ezinyezinye.

UNEPHUPHO LOKUBA NENDAWO YOKUTSHALA NOKUGCISA AMAKHOWE

"Ndiyazi ukuthi kunabantu abafuna ukuthola izitifiketi ukuze kutholele kulobu babundise khona.

"Yisifafisa futhi ukuba, nendawo enkulu okuzothalwa, kuphi- lotho aithi yenza umkhqizo," wakhe ufuna yizitolo eziningi, wakhe ufuna umkhqizo yingoba kababonisa Kwezinye Natal abakhitiza amakhowe abaza ngemina ogeferi mushroom.

"Lapha KwaDukuza nje ngiyazi kulawo ovelwala elimbophe othale ama-button mushroom kodwa akukho emama-ogeter, okwenza imakethe ibe nkulu kakhulu."

"Nami ngaketha ukuthalaza wona ngoba ngibona lokho ukuthi kangizokuhlala nawo, ngingazi ukuthi ngizowazi," esho.

Uthi uvulelekile ngisho ukuthi isibalo abafuna ukwathenga bese bona beyowadayisela abanye, noma ethi kakuyona into ayikhuthazayo.

UKHUTHAZA ABANOLWAZI LOKUTSHALA UKUZIQALELA AMABHIZINISI

"Ngikhuthaza ukuthi bafunde ukwathalaza, bakwazi ukuziqale- la abawo amabhizinisi."

Le mtokazi ibonga ukusipala waseMalazi noMnyango wezoLimo esifundazweni ngokuyisithalho lokufunda ngalolu hlobo lokulima.

"Imibono bengisithala emnyangweni isikhathi eside, kodwa manje sengakwazi ukuzenzela eyami."

"Ngisebenzisa imibono elahlwa uma kugaywa umoba, ngibe nobudlelwano nezinkanyo ni ezinemishini yomoba.

"Noma bengingudayiseli kodwa neninge ukuyithola, yingakho ngifisa ukuba sibe nesivumelwano sokusebenzisana esimekethweni, ngazi ukuthi noma kushitshala abaphati, kangibi nenkinga."

OO HUAWEI NOVQ 9 SE OO 108MP AI QUAD CAMERA






FORMAL MARKETS



Oyster Mushrooms

grown right here in Pongola



Oyster mushrooms are highly nutritious, they may promote heart and immune system health, encourage healthy blood sugar control, and provide antioxidant and anti-inflammatory effects.

Add these versatile mushrooms to your diet by using them in dishes like pasta, stews, and omelettes.

Available at **Pick n Pay**
 Pongola



MSD Oyster Mushrooms

SHELF LIFE: 5 DAYS • USE WITHIN 3 DAYS OF OPENING

079 379 8455

msdfreshlyharvest@gmail.com

Umzimkhulu Local Produce



INFORMAL MARKETS



Simplified method of mushroom packs production

Mixing



Mixing without machinery



Simplified method of mushroom packs production

Bagging



Bagging without machinery





Simplified method of mushroom packs production

Pasteurization



Pasteurization using drums and firewood





Simplified method of mushroom packs production

Inoculation in a lamina flow

Inoculation in a clean room





Simplified method production and planting





Simplified method of mushroom packs production

Anticipated impact from simplified method training

- One home one garden
- Creates job opportunities
- Reaches more beneficiaries
- Forms part of exit strategy
- Reduces dependency on Cedara mushroom base
- Reduced production costs



- *Ganoderma lucidum* production and nutritional content analysis using readily available raw materials in KwaZulu-Natal
 - The objective of this research project is to produce *Ganoderma lucidum* using readily available raw materials
- The effect of pH in limiting microbial contaminants in agricultural waste used for oyster mushroom substrate production
 - The objective of this study is to use pH concentration to minimize mushroom contamination



GANODERMA LUCIDUM





JUNCAO GRASS



THANK YOU

**GROWING
KWAZULU-NATAL
TOGETHER**