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## Introduction

In recent years, the Oyster mushroom production (*Pleurotus ostreatus*) has increased around the world. The South of Brazil allows the development of this activity once it presents satisfactory climatic conditions: mild temperature and high humidity and a wide availability of subsistence agriculture residues. Considering the low cost, versatility and the fast mycelial growth, we tested the abundant wastes in this region to fungal biomass production as below:

## Materials and methods

In this experiment was used 22 sample unit (n). These units are bags with 5kg of substrate using the following formulation:

- 70% of corn straw
- 15% of eucalyptus sawdust
- 8% of wheat bran
- 5% of gypsum
- 2% of calcium carbonate to pH 5.5

The substrate preparation was conducted by immersing the ground of corn straw in water for 24 hours, after this period occurred the mixture including the sawdust, wheat bran and supplements. The moisture was adjusted in 70%. This mixture was conditioned in 5kg bags and submitted to the steam chamber at 95°C for 8 hours. After cooling 2% of *P. ostreatus* var. Florida inoculum in relation to the wet weight was used. The evaluation measure used was (BE) biological efficiency (Fresh mushroom/dry substrate)x100. The cultivation took place in greenhouse with controlled humidity.

## Results

The production volume of week 1 and 2 were similar (p=0.154), the same occurred at week 2 and 3 (p=0.092). The production volume of week 3 was lower when compared to week 4 (p=0.015). The mean values to mushroom's production per bag was 1025,45g. The mean values of week production per bag were: 361g (±118) to week 1, 297g (±80) to week 2 and 226g (±86) and 154g (±20) respectively to week 3 and 4. The result of BE=68.4% indicates satisfactory result for the first contact between fungus and substrate.

## Discussion

The biological efficiency (BE) is a good indicator showing the ability of the fungus to transform vegetal biomass in fungal biomass. Few articles have shown use of corn straw supplemented for the mushroom cultivation. The use of the more effective carbon/nitrogen sources can increase of the BE as cotton seed and paper waste (Girmay et al. 2016). The anaerobic digested plant material associated with paddy straw was successfully utilized to high EB (Chanakya et al. 2015)

## Schematic representation of the mushroom production process



## Conclusion

The result of BE=68.4% indicates satisfactory result for the first contact between fungus and substrate. The present productive process is a sustainable option to study region considering the availability of corn straw and eucalyptus sawdust, however others local wastes and formulations investigation are necessary to better the effectivity of this process.

## Bibliography

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