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Abstract

The response to gamma irradiation in the vegetative reproduction of *Schizophyllum sp.*, locally known as cendawan kukur or sisir was investigated. The mushroom mycelium was exposed to gamma rays at selected doses ranging from 0 - 5 kGy separately. The inactivation of mycelium viability was observed between doses of 0.75 - 1.5 kGy and complete inactive at 2.25 kGy.

Keywords: gamma irradiation, *Schizophyllum sp.*, Radiosensitivity

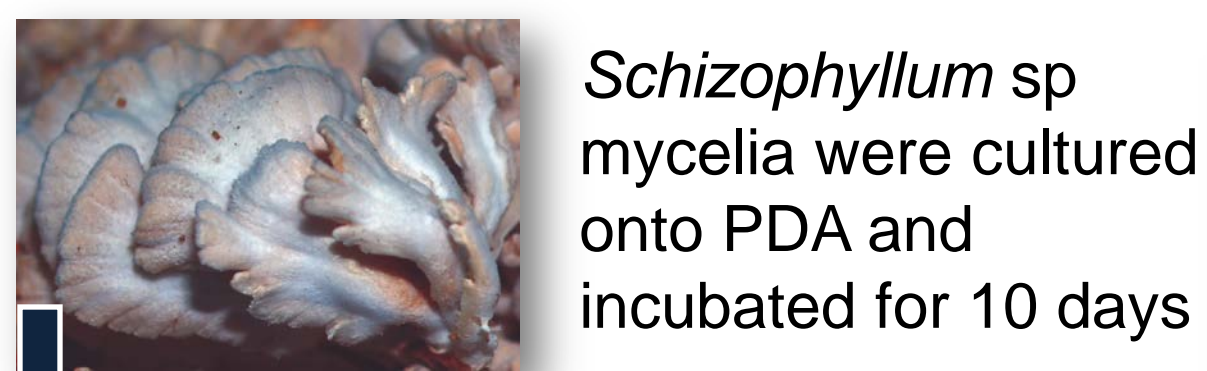


Schizophyllum sp. on decaying wood

INTRODUCTION

The *Schizophyllum sp.*, locally known as kulat sisir, jamur gerigit and cendawan tapak tiung (Anim, 2016) is a popular mushrooms in local village folk's cuisine. The local price for this mushrooms is about RM 70 per kilogram. Despite high priced, being popular in demand and its medicinal bioactive content potential, the mushroom is not widely cultivated at commercial scale. Our previous study has elucidated the gamma radiation in inducing new varieties of other basidiomycetes at lower irradiation doses. (Rosnani et al 2016). This preliminary works, is intended to explore irradiation mutagenesis of *Schizophyllum sp.*, with an objective to select strain with better market value and commercially producible.

MATERIALS AND METHODS



Schizophyllum sp. mycelia were cultured onto PDA and incubated for 10 days



irradiated at different doses of 0.25, 0.50, 0.75, 1.00, 1.25, 1.75, 2.00, 2.25, 2.50, 3.00, 4.00 and 5.00 kGy respectively.



The irradiation was carried out at the Nuclear Malaysia Biobeam GM 800 irradiator

Prior to irradiation, dose mapping study was carried out to verify the dose distribution in the irradiation chamber of the Biobeam GM 800 (Rosnani et al 2016).

The data for survival percentage of irradiated mycelium were collected from observation on the growth of mycelium for 12 days. Culture that showed no growing activity during this period was considered as not survived

RESULTS AND DISCUSSION

The dose mapping results showed that petri dish plate position no. 8 (12 cm height) had received the irradiation dose nearest to the targeted irradiation dose.

The inactivation of mycelium viability was observed between doses of 0.75 - 1.5 kGy and complete inactive at 2.25 kGy. (Fig 1)

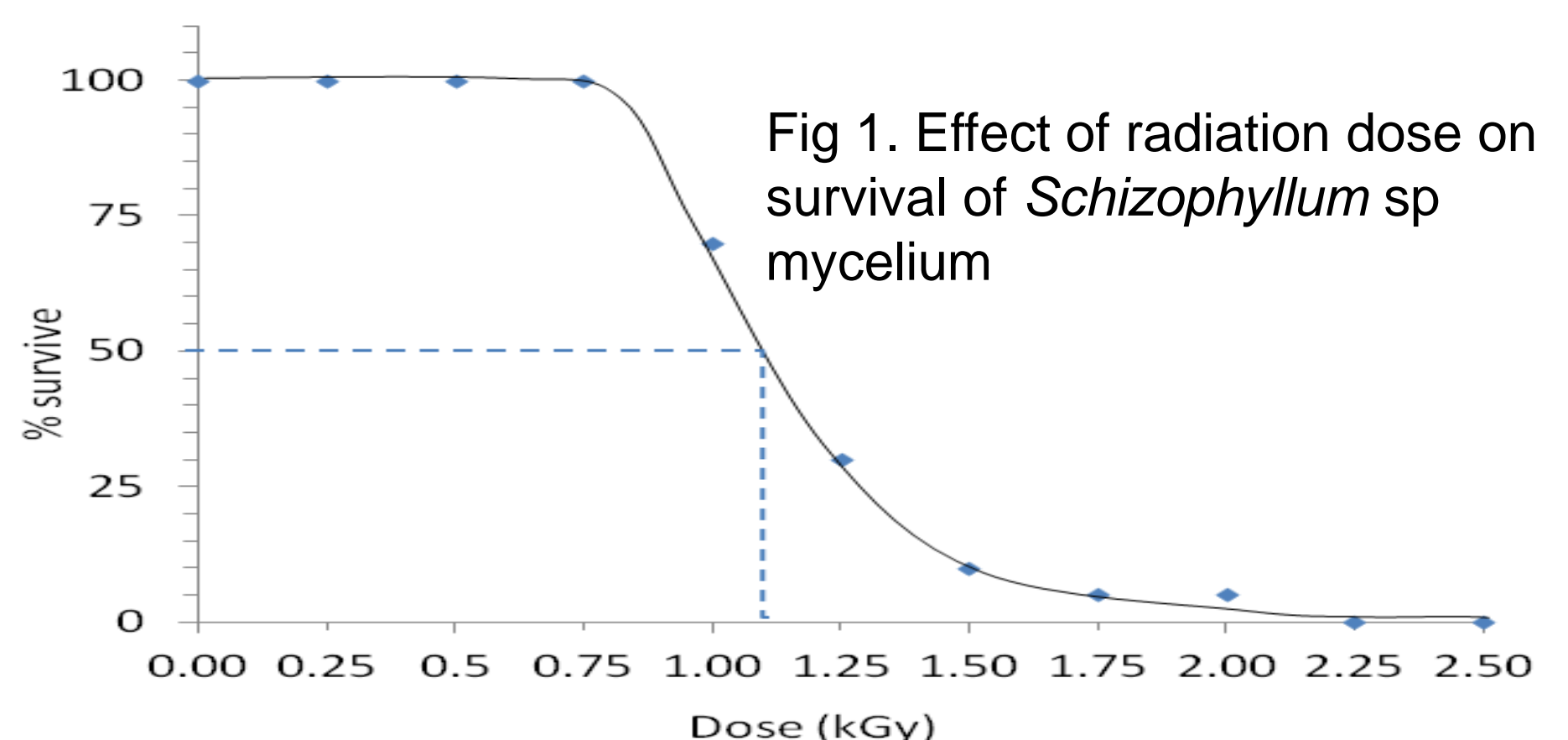


Fig 1. Effect of radiation dose on survival of *Schizophyllum sp.* mycelium

CONCLUSION

Schizophyllum sp. is more radiosensitive to gamma radiation than *P. sajor-caju.* *Schizophyllum sp.* mutant strain with desirable character could be selected through radiation mutagenesis using gamma at the dose below 2 kGy.

REFERENCES

Foziah Ali, Muhamad Lebai J and Mat Rasol A. (1998). Enumeration, identification and decontamination of micro-organisms on empty fruit bunches (EFB) and palm press fibres (PPF) from selected palm oil mills in the Peninsular Malaysia. *Journal Sains Nuklear Malaysia*. 16 (1): 7-20

Rosnani Abdul Rashid, Fauzi Daud, Mat Rasol Awang, Hassan Hamdani Mutaat, Sahidan Senafi, Azhar Mohamad, Mohd Meswan Maskom, and Khairuddin Abdul Rahim, Evaluation of Mycelia Growth, Morphology and Yield for Low Dose Gamma Irradiated Grey Oyster Mushroom *Pleurotus sajor-caju*. *International Journal of Innovation and Scientific Research*, ISSN 2351-8014 Vol. 24 No. 2 Jun. 2016, pp. 332-336

Rosnani Abdul Rashid. 2016. Kesan Dos Rendah Sinaran Gama Terhadap Pertumbuhan dan Pemuahan Cendawan *Pleurotus sajor-caju*. Thesis Ijazah Sarjana Sains, UKM

<http://animhosnan.blogspot.my/2012/11/cendawan-kukur.html>. access August 30, 201