

## **PROFIL METABOLIT SEKUNDER PADA KULTUR *IN VITRO* TUNAS AKSILAR CABAI PUYANG (*Piper retrofractum* Vahl.)**

oleh:

Enik Sulistiyana

17/408641/BI/09772

### **INTISARI**

Cabai puyang (*Piper retrofractum*) merupakan tanaman yang tumbuh memanjat dan memiliki berbagai aktivitas farmakologis. Produksi tanaman ini tergolong rendah, sehingga perlu upaya perbanyakkan salah satunya dengan teknik kultur jaringan. Kultur tunas aksilar merupakan salah satu jenis kultur *in vitro* dengan menggunakan eksplan berupa tunas aksilar. Selain itu juga perlu dilakukan analisis profil metabolit sekunder yang terkandung dalam daun cabai puyang hasil kultur *in vitro* tunas aksilar. Penelitian ini bertujuan untuk mempelajari kultur tunas aksilar cabai puyang pada medium Murashige & Skoog (1962) dengan kombinasi ZPT serta mempelajari kandungan metabolit sekunder pada daun *in vitro* dan *ex vitro* cabai puyang. Tunas aksiler diinduksi pada medium MS dengan beberapa kombinasi ZPT NAA dan BA. Pada medium A<sub>3</sub> dengan kombinasi NAA 0,5 mg/L dan BA 1,5 mg/L muncul tunas tercepat pada 33 HST. Medium A<sub>2</sub> dengan kombinasi NAA 0,5 mg/L dan BA 1,0 mg/L memiliki jumlah tunas  $7,000 \pm 0.577$  buah, jumlah daun  $6,000 \pm 0.333$  helai, dan tinggi tanaman 2,360 cm. Profil metabolit sekunder pada daun cabai puyang diidentifikasi dengan KLT. Jumlah bercak positif pada uji flavonoid, baik daun *ex vitro* dan *in vitro* memiliki jumlah yang sama. Pada uji terpenoid, bercak positif pada daun *ex vitro* lebih banyak dibandingkan daun *in vitro*. Sedangkan pada uji alkaloid, bercak positif pada daun *in vitro* lebih banyak dibandingkan daun *ex vitro*. Kesimpulan pada penelitian ini yaitu medium A<sub>2</sub> merupakan medium optimal pertumbuhan tunas aksilar dan profil metabolit sekunder pada daun *in vitro* dan *ex vitro* berbeda.

Kata kunci: *Piper retrofractum*, cabai puyang, *in vitro*, KLT, tunas aksiler.

**SECONDARY METABOLITE PROFILES IN AXILLARY SHOOT  
IN VITRO CULTURE OF THE JAVANESE LONG PEPPER  
(*Piper retrofractum* Vahl.)**

by:

Enik Sulistiyana

17/408641/BI/09772

**ABSTRACT**

The javanese long pepper (*Piper retrofractum*) is a plant that grows climbing and has a variety of pharmacological activities. The production of this plant is relatively low, so it is necessary to propagate one of them with tissue culture. Axillary shoot in vitro culture is one type of in vitro culture using explant in the form of axillary shoot. In addition, it is also necessary to analyze the profile of secondary metabolites contained in javanese long pepper leaves from axillary shoot in vitro culture. This research aims to study axillary shoot in vitro culture of javanese long pepper in the medium Murashige & Skoog (1962) with a combination of growth regulator and study the profile of secondary metabolites of in vitro and ex vitro long pepper leaves. Axillary shoots are induced in MS mediums with some combination of growth regulator NAA and BA. In the medium A<sub>3</sub> with a combination of NAA 0,5 mg/L and BA 1,5 mg/L appears the fastest shoot at 33 HST. Medium A<sub>2</sub> with a combination of NAA 0,5 mg/L and BA 1,0 mg/L has a number of shoots  $7,000 \pm 0.577$  pieces, the number of leaves  $6,000 \pm 0.333$  strands, and the height of the plant 2,360 cm. The profile of secondary metabolites in the leaves of javanese long pepper is identified with TLC. The number of positive patches on flavonoid tests, both ex vitro and in vitro leaves had the same amount. In terpenoid tests, positive patches on ex vitro leaves were more numerous than in vitro leaves. While in alkaloid tests, positive patches on in vitro leaves are more than ex vitro leaves. The conclusion of this research medium A<sub>2</sub> is the optimal medium of axillary shoot growth and the profile of secondary metabolites in ex vitro and in vitro leaves is different.

Keywords: *Piper retrofractum*, axillary shoot, in vitro, javanese long pepper, TLC.