

Preliminary Study On *Phaeomeria* sp Economic Potency

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ABSTRACT: Experiment to show influence of *Phaeomeria* sp rhizome extract treatment to germination of soybean and green peanut had been done at Laboratory of plant ecology, Biology Department, Faculty of Science, University of Sriwijaya, Indralaya, South Sumatera, Indonesia during February 2008. Data analysis shows that *Phaeomeria* sp had potency on herbicide, ornamental and medicinal plant.

KEYWORDS: zingiberaceae, *Phaeomeria* sp, germination,

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1 INTRODUCTION

Zingiberaceae family members have been known by South East Asian peoples as spices and medicinal plants. The famous species of them were *Curcuma domestica*, *Alpinia galanga*, *Zingiber officinale*, and *Costus speciosus*. *Phaeomeria* or *Nicolaia* or *Etilingia*, is a genus of Zingiberaceae that have not known much yet, because of their living in the forest. Some of them known because of the form, colour and size of flower; *Phaeomeria speciosa* or *Etilingia elatior* or *Nicolaia speciosa*.

In South Sumatera forest, there is a member of *Phaeomeria* living with specific character; the leaves is two colours, green on upper side and red underneath. Form of rhizome, stem, leaves and flower just like *Phaeomeria speciosa*. Peoples near of forest sometime use the rhizome for medicinal needs, liniment. They said that the rhizome has specific smell and make skin become hot after use as liniment. According to ARS Systematic Botanist, *Etilingera/Phaeomeria* is a member of Zingiberaceae family, Alpinioideae sub-family, and Alpinieae tribe^[1]. Figure 1 show these plant leaves, flower, rhizome and small shoot planted at home.

To show the potency of these plant, in this research we use the extract of rhizome as treatment to germination of soybean and green peanut (*Glycine max* & *Phaseolus radiatus*). Usage of plants extract as germination test have been conducted by lot of botanist; extract of pine needles has known inhibit the radicle growth of soybean^[2].

2 MATERIAL AND METHODS

Rhizome cut and grind and extracted by filtering and made solution with concentration 0%, 2%, 4%, 6%, by adding aquadest. Ten of soybean seeds placed in a plastic dish with a piece of filter paper. Each treat-



Planted at home

GAMBAR 1: *Phaeomeria* sp.

ment was replicated 6 times. Let the germination process during 4 days under dark condition (in the laboratory bench), and the percentage of germination and length of radicle measured then. Data processed by analysis of variance (F test) to find whether treatments influence the germination percentage and length of radicle. The same test also done to greenpeanut seeds with concentration of rhizome extract; 0%, 7%, 12.5%, and 18%.

3 RESULT AND DISCUSSION

Result of germination test of rhizome extract treatment to percentage of germination and length of radi-

cles of soybean should be seen at Table 1 and 2.

TABEL 1: Percentage of germination after rhizome extract treatment (%)

No	Treatment	Mean of Germ. Perc.
1	Control (0%)	8.83
2	2 %	9.16
3	4 %	8.0
4	6 %	6.83

TABEL 2: Length of radicle after 4 days germination (cm)

No	Treatment	Length of radicle (cm)
1	Control (0%)	4.08
2	2 %	3.25
3	4 %	2.66
4	6 %	1.46

Germination test to green peanut should be seen at Table 3 and 4.

TABEL 3: Percentage of germination after rhizome extract treatment (%)

No	Treatment	Mean of Germ. Perc.
1	Control	
2	7 %	
3	12.5 %	
4	18 %	

Statistical analysis for above data through analysis of variance at degree of error 5% should be seen at last page. It is shown that treatments influenced the percentage of germination.

The above data show that extract of *Phaeomeria* rhizome could inhibit germination of soybean and green peanut seeds. Marisa^[2] has reported that extract of pine needles also inhibited the germination process of soybean. It is mean that rhizome of *Phaeomeria* has a potency for bioactive like herbicide.

Ornamental; search of cybernet had found that a company from New Zealand, Russell Fransham (exotic and unusual plants landscaping commercial and retail, Clements Road, Matapouri Bay RD 3, Wangarei) sell lot of exotic flower plants, included *Phaeomeria/Nicolaia*. They sold it at \$ 20 USD/pot^[3]. So, because our plant has two colour of leaves, might be it should more expensive than Russell Fransham plant. It is mean, beside it had chemical bioactive potency, but ornamental potency too.

Medicinalplant; furthermore, because of peoples near of forest use it as liniment, mean *Phaeomeria* sp with two color of leaves had the potency on medicinal

TABEL 4: Length of radicle after 4 days germination (cm)

No	Treatment	Length of radicle (cm)
1	Control (0%)	2.485
2	7 %	1.42
3	12.5%	1.285
4	18 %	1.02

thing. Deeper research could be made by pharmacologists about it. For a while, Anonymous^[4] reported that *Phaeomeria speciosa* has some chemical content like saponin, flavonoid, and polyphenol. Culture of *Phaeomeria* should be done by planting the rhizome, because if we plant their seeds, it needs 2 years duration for germination^[5].

4 SUMMARY

Phaeomeria sp that living in south sumatera, with two color leaves (green and red) had some potency as economic plant, herbicidal, ornamental and medicinal plant. Culture of these plants and further study should be made.

DAFTAR PUSTAKA

- [1] Anonymous, 2008, GRIN Taxonomy for Plants, USDA, Agricultural Research Service, Bestville Area, <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409479>
- [2] Marisa, H., 1990, Effect of aquaous, ethanol and acethon extract of pine needles on germination and vegetative growth of soybean, *Magister Degree thesis*, Postgraduate program, Bandung Institute of Technology, Bandung, 1990
- [3] Fransham, R., 2008, Subtropicals, <http://www.subtropicval.co.nz/catalogue2>
- [4] Anonymous, 2008, *Nicolaia speciosa* Horan, http://www.bebas.vlsm.org/vl2/artikel/ttg_tanaman_obat/depkes/buku1/1-205.pdf
- [5] Fazlisyam, 2008, Kantan, <http://www.fazlisyam.com/2008/02/21/bunga-kantan/> Accessed on March 17, 2008