

Separation of Picung (*Pangium edule* REINW.) Seed for Active Compounds and Biological Activity Test to Grayak Caterpillar (*Spodoptera litura* F.)

Tuti Setiawati Sudjana¹, Gustini Syahbirin¹ and Andrian Setyawan¹
Departemen Kimia FMIPA IPB

Abstract

Employing a synthetic pesticide may give harmful effect to the environment, such as in-soil water pollution, killing natural enemy of pest, creating higher pest resistance, and secondary pest attack. The development of organic pesticide is aimed to reduce such negative effects since it has some advantages compared to synthetic pesticide, as rapid degradation, quickly decrease eat desire of pest or preventing pest from destroying more plants, and low toxicity to mammals.

Picung is expected to contain compounds that potential to be organic pesticide. This research was focused to the seed of picung fruit. The research used solvents with various polarities for extracting, and further analysis was applied in order to find the most active extract to be fractionated. This research applied two types of activity test to *S. litura* larva, feed obstruction and mortality test. The research used wet and dry samples and the secondary metabolite content of both samples were qualitatively analyzed.

Phytochemical test of crude extract of wet and dry picung seed indicated the existence of flavonoids, triterpenoids, saponins, quinones, tannins and cyanides. The result showed, that MeOH extract of dry picung seed was the most active extract on feed obstruction test with inhibition level 88.04 % with extract concentration 1 % (w/v), while chloroform extract was the most active to the mortality test with 36.67 % on 10 % extract concentration and LC₅₀ 13,85.

MeOH extract fractionation of dry picung seed using thin layer chromatography preparative (TLCp) resulted in 4 fractions, and fraction IV was the most active fraction in the activity of feed obstruction of *S. litura*. Fraction IV, however, show negative result when applied to mortality test. So, it can be inferred that the compounds of chloroform extract of dry picung seed work synergically. The research was not extended to the identification phase using instrument because of impurity of the active fraction. Tests for the best eluent to separate the most active crude extract, especially for MeOH extract and the use of better quality of TLCp plate, are highly recommended.

Keywords : Picung, *Pangium edule* Reinw, *Spodoptera litura* F