

ABSTRAK

MUHAMMAD IRFAN, 2018. Uji *In Vitro* Aktivitas Antibakteri Ekstrak Kulit Buah Manggis (*Garcinia mangostana* L.) Terhadap Bakteri Penyebab Hawar Daun Padi (*Xanthomonas oryzae* pv. *Oryzae*) pada Suhu dan Lama Simpan Buah Berbeda. Di bawah bimbingan **ADAM SAEPUK** dan **DEDI NATAWIJAYA**.

Kulit buah manggis memiliki beragam kelebihan, salah satunya ialah memiliki kandungan senyawa bioaktif yang berfungsi sebagai antibakteri. Percobaan ini bertujuan untuk mengetahui aktivitas antibakteri ekstrak kulit buah manggis (*Garcinia mangostana* L.) terhadap bakteri penyebab hawar daun padi (*Xanthomonas oryzae* pv. *Oryzae*) pada suhu dan lama simpan buah berbeda, dan untuk mengetahui interaksi dari kedua perlakuan tersebut. Percobaan ini dilaksanakan pada bulan Februari sampai Juni 2018 di Laboratorium Dasar Fakultas Pertanian Universitas Siliwangi Tasikmalaya dan Laboratorium Teknologi Pangan Fakultas Pertanian Universitas Jenderal Soedirman Purwokerto. Rancangan percobaan yang dilakukan adalah metode eksperimental dengan menggunakan Rancangan Acak Lengkap (RAL) yang disusun secara faktorial, dengan dua faktor perlakuan yaitu : faktor pertama suhu penyimpanan dengan 3 taraf (0 °C, 13,5 °C dan 27 °C), dan faktor kedua lama penyimpanan dengan 3 taraf (1 hari, 7 hari, dan 14 hari), serta masing-masing diulang sebanyak 3 kali. Pengamatan utama pada percobaan ini meliputi pengamatan diameter zona hambat dan kadar hambat minimum (KHM). Hasil percobaan menunjukkan terjadi pengaruh interaksi yang sangat nyata antara perlakuan suhu dan lama penyimpanan terhadap aktivitas antibakteri ekstrak kulit buah manggis. Adapun kombinasi perlakuan terbaik ialah buah yang disimpan pada suhu 13,5 °C selama 7 hari dengan rata-rata diameter zona hambat sebesar 24,46 mm dan nilai kadar hambat minimum sebesar 25%.

Kata Kunci: antibakteri, *in vitro*, ekstrak kulit buah manggis, suhu simpan, lama simpan

ABSTRACT

MUHAMMAD IRFAN, 2018. The *In Vitro* Test of Antibacterial Activity of Mangosteen Pericarp Extract (*Garcinia mangostana* L.) Against Rice Leaf Blight Bacteria (*Xanthomonas oryzae* pv. *Oryzae*) at Various Temperature and Duration of Fruit Storage. Under guidance of **ADAM SAEPUDIN** and **DEDI NATAWIJAYA**.

Mangosteen pericarp has many advantages, one of them is the bioactive contents that can be used as antibacterial agent. The purpose of this study is to examine the antibacterial activity of mangosteen pericarp extract (*Garcinia mangostana* L.) against rice leaf blight bacteria (*Xanthomonas oryzae* pv. *oryzae*) at different temperature and duration of fruit storage, and to determine the interaction of the both treatments. This study was conducted from February to June 2018 in the Base Laboratory, Agriculture Faculty, Siliwangi University Tasikmalaya and the Laboratory of Food Technology, Agriculture Faculty, University of Jenderal Soedirman Purwokerto. The research design was experimental method with Completely Randomized Design (CRD) arranged as factorial, with two treatment factors: the first factor was storage temperature with 3 levels (0 °C, 13,5 °C, and 27 °C), and the second factor was storage duration with 3 levels (1 day, 7 days, and 14 days), and each of them were replicated 3 times. The main observations of this study include the diameter of bacterial inhibitory zone, and minimum inhibitory concentration (MIC). The results showed there was significant influence of interaction between the treatment of storage temperature and storage duration towards the antibacterial activity of mangosteen pericarp extract. The best treatment was showed by the fruits that was kept in 13,5 °C temperature during 7 days of storage, with the average of diameter of inhibitory zone was 24,46 mm and the minimum inhibitory concentration was 25%.

Keywords: antibacteria, *in vitro*, mangosteen pericarp extract, temperature storage, duration storage