

**PEMANFAATAN EKSTRAK DAUN SIRIH (*Piper betle* Linn.)
SEBAGAI SENYAWA ANTIJAMUR ALAMI
PADA PENANGANAN PASCA PANEN *STRAWBERRY* DAN ANGGUR**

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INTISARI

Penggunaan fungisida untuk mengurangi atau mencegah kerusakan buah oleh jamur berdampak negatif pada kesehatan karena kandungan logam berat yang terdapat di dalamnya, oleh karena itu perlu dicari alternatif pengganti fungisida yang aman untuk kesehatan manusia. Pada penelitian ini digunakan ekstrak daun sirih (*Piper betle* Linn.) untuk dilihat kemampuan penghambatannya terhadap jamur perusak pada buah *strawberry* dan anggur.

Penelitian dilakukan dalam beberapa tahap, yaitu : enumerasi, isolasi, dan identifikasi genera jamur perusak ; ekstraksi daun sirih dengan menggunakan pelarut air dengan perbandingan 1:1 (b/b); uji kemampuan ekstrak terhadap viabilitas spora (menggunakan metode *spread plate*) dan laju pertumbuhan miselia (menggunakan metode *giant colony*). Pengujian dilakukan pada media Dichloran Rose Bengal Chloramphenicol dengan variasi konsentrasi ekstrak 10,20,30 dan 40%. Konsentrasi efektif penghambatan yang diperoleh diaplikasikan pada buah *strawberry* dan anggur dengan cara dicelup selama 10 menit.

Hasil penelitian menunjukkan bahwa dominasi perusak pada buah *strawberry* adalah genera *Fusarium* sedangkan pada buah anggur adalah genera *Aspergillus*. Secara umum ekstrak daun sirih dapat menurunkan viabilitas spora dan menghambat laju pertumbuhan miselia. Genera *Aspergillus* bersifat lebih resisten dibandingkan dengan genera-genera yang lain dan konsentrasi efektif penghambatan diperoleh pada konsentrasi 40%. Aplikasi ekstrak buah menunjukkan adanya penghambatan pertumbuhan jamur perusak namun kemampuan penghambatan menurun dengan bertambahnya umur simpan ekstrak.

Kata kunci : daun sirih, antijamur alami, fungisida, *strawberry*, anggur,

**UTILIZATION OF BETLE LEAF EXTRACT (*Piper betle* Linn.)
AS A NATURAL ANTIFUNGAL COMPOUND
IN POSTHARVEST HANDLING OF STRAWBERRIES AND GRAPES**

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ABSTRACT

The application of fungicides to minimize or to prevent the fungal spoilage in fruit showed negative effects in human health due to the heavy metal compounds which are contained in it. Therefore it is necessary to observe an alternative compound as a substitute of the fungicides which is safe for human health. The potency of Betle leaf (*Piper betle* Linn.) extract to inhibit the growth of spoilage fungi in strawberries and grapes was evaluated in this research.

The research was carried out in several steps, that were : enumeration, isolation and genera identification of spoilage fungi ; extraction of the Betle leaf using aquadest with proportion 1:1 (w/w) ; and evaluation of the ability of the extract to decrease the spore viability (using spread plate method) and to inhibit the mycelium growth rate (using giant colony method). Dichloran Rose Bengal Chloramphenicol medium was used as test medium in various concentration that were : 10,20,30 and 40%. The effective inhibitory concentration was applied to strawberries and grapes by dipping the fruit in the extract for 10 minutes.

The result showed that the dominant genera of spoilage fungi in strawberries was *Fusarium* and in grapes was *Aspergillus*. Generally, betle leaf extract was able to decrease the spore viability and inhibit the mycelium growth rate. *Aspergillus* was more resistant than the others and the effective inhibitory concentration was found at 40%. Positive inhibitory effect was found in application but the inhibitory potential decreased as the storage time increased.

Keywords : betle leaf, natural antifungal, fungicide, strawberry, grape