

**HIGH VOLTAGE ELECTRIC FIELD
APPLICATION ON BACTERIA OF DURIAN**

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ABSTRACT

The high voltage electric field engineering has stretched its tentacles in all branches of science. This project is the high voltage electric field application on Durian.

The methods that used in this project are divided into three methods. At first application of AC high voltage and then DC high voltage and the finally application of high voltage pulse in the preservation of fruit will be consider.

The main purpose of Durian processing is Durian preservation, which involve maintaining the high quality properties of the Durian for as long as possible. Thus the study titled —high voltage electric field application on Durian was carried out to estimate the effect of various types of high voltage on life time of Durian. By the way, no method for high voltage application on Durian has been established. In this project three level of voltage was considered for each type of high voltage electric field. The best result in this project was obtained in AC high voltage field. On application of AC high voltage at various magnitude ranging from 10 KV up to 30 KV and the time duration of three hours, it was found that in the attribute 30 KV AC the Durian was so fresh after seven days. So with optimal voltage (30 KVAC) can extending the shelf life of Durian. Also, the main advantage of this emerging technology is that the retention of fresh quality attribute, is well proven in the preservation of Durian.

ABSTRAK

Bidang kejuruteraan medan elektrik voltan tinggi telah berkembang ke semua cabang bidang sains. Projek ini adalah kegunaan medan elektrik voltan tinggi keatas durian. Kaedah yang digunakan di dalam projek ini dibahagikan kepada tiga kaedah. Pada aplikasi pertama, voltan tinggi AU, seterusnya voltan tinggi AT dan akhir sekali aplikasi denyut voltan tinggi dilakukan keatas pemuliharaan buah-buahan. Tujuan utama adalah untuk memelihara durian, dimana ia melibatkan mengekalkan kualiti durian selama mungkin. Maka tajuk bagi projek ini adalah IPenggunaan medan elektrik voltan tinggi keatas durian dilakukan untuk menjangka kesan beberapa jenis voltan tinggi terhadap durian. Walaubagaimanapun, tiada kaedah untuk penggunaanya terhadap durian dibangunkan. Dalam projek ini tiga aras voltan, dilakukan untuk setiap jenis medan elektrik voltan tinggi. Keputusan yang terbaik bagi projek ini diperolehi didalam medan elektrik voltan tinggi AU. Pada applikasi voltan tinggi AU beberapa magnitud dari 10 kV sehingga 30 kV dan jangkamasanya selama tiga jam, penemuan yang diperolehi dimana 30kV AU durian akan bertahan kesegarannya selama tujuh hari. Maka dengan voltan optimum (30KVAU) boleh meningkat jangka hayat durian tersebut. Kebaikan utama penggabungan teknologi ini adalah ia dapat meningkatkan kualiti kesegaran, seperti yang telah berjaya dilakukan keatas pemuliharaan durian.

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