

龙眼力学参数测试与分析 Test and Analyse on Macromechanic Parameters of Longan

卿艳梅 李长友 曹玉华 张增学 程红胜

华南农业大学

关键词: 龙眼 力学特性 弹性模量 刚度

摘要: 对龙眼果实、果核进行压缩试验表明: 龙眼整果的压缩力-变形曲线为二次多项式关系, 其横向和纵向的刚度相近, 弹性模量为0.90~0.95 MPa; 果核的压缩力-变形曲线为近似线性关系, 横向和纵向刚度相近, 弹性模量约为40 MPa。龙眼整果破壳时变形随着加载速率的增加而减小。由果壳的拉伸试验得到应力-应变关系和果壳弹性模量-应变关系。试验表明龙眼果实可看作各向同性材料。 Compression experimental results on longan fruit and pit indicated that the force-deformation curves of longan fruit compression qualified with the second order quadratic equation and the elastic modulus ranged from 0.90 MPa to 0.95 MPa. The force-deformation curves of longan pit compression were nearly linear and the elastic modulus was roughly 40MPa. The transversal and longitudinal stiffness of longan fruit and pit were separately similar. Under different compression rates, longan deformation of broken-hull decreased along with the increase of compression rates. The fruit skin tensile tests were conducted that stress-strain curves and the relationships between elastic modulus and strains were determined. Experimental results indicated that longan can be regarded as isotropy material.

[查看全文 \(请使用Adobe Acrobat 6.0版本浏览\)](#) [返回首页](#)

[引用本文](#)