

Title            Nondestructive acoustic firmness tester detects the effect of manure on muskmelon texture.  
Authors        Al-Haq, M. I., Sugiyama, J., Tomizawa, A. and Sagara, Y.  
Citation        HortScience Vol: 39 (2004); 142-145

### **Abstract**

The effect of amount of manure (animal dung) on the texture of musk melons was studied. Melons were grown in a greenhouse and supplemented with 20 and 50 t manure/ha. Melons were harvested 4 times at 4-day intervals and kept at ambient conditions for approximately 8-12 days. Texture and firmness were also determined. During the first, second, third and fourth harvest, the fruits grown with 20 t manure/ha gave mean transmission velocities of 54.5 plus or minus 2.5, 55.2 plus or minus 5.7, 49.6 plus or minus 4.8, and 46.8 plus or minus 9.4 m/s, respectively. Linear regression equations for fruits grown with 20 t manure/ha showed that the fruits from the first harvest took 10 days to reach 40 m/s, while fruits from the second, third and fourth harvest took 11, 9.5, and 4 days, respectively. The corresponding values for fruits grown with 50 t manure/ha were 7.5, 10, 5.5 and 4.5 days, while those from the second harvest gave the best keeping quality. The firmness index of melon grown with 20 t manure/ha was greater than that grown with 50 t manure/ha. High soil NO<sub>3</sub>-N contents were associated with softer melons. The correlation between panelist scores for texture and the firmness index was 0.907. Both deg Brix and panelist scores for sweetness indicated that manure did not affect the sweetness of melon. The digital firmness tester could detect the effect of manure on the texture of the melons, and could be used to determine the appropriate time of harvest for each and every individual melon.