Wang M L, Tang Z, Zhang B, Li Y. Differences in breaking behavior of rice leaves under microwave and naturally drying processes. Int J Agric & Biol Eng, 2022; 15(1): 89–100.

Figure 2 Rice plant and rice leaves morphology

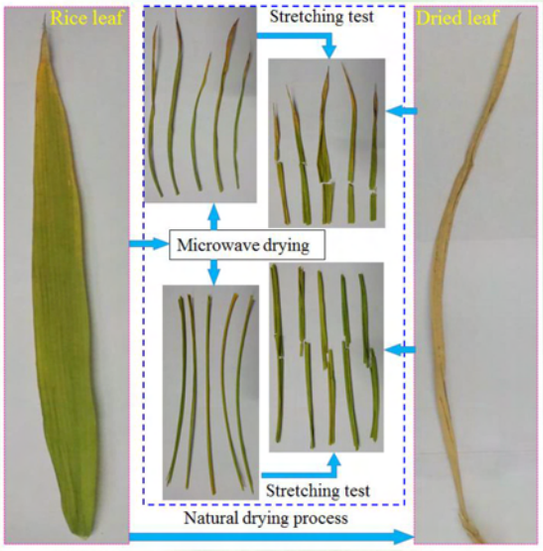


Figure 3 Rice leaves morphology undergoing microwave drying and natural drying

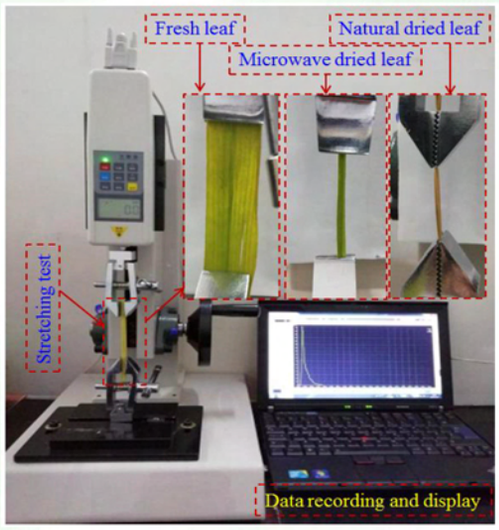


Figure 4 Rice leaves tensile breaking force test device and method

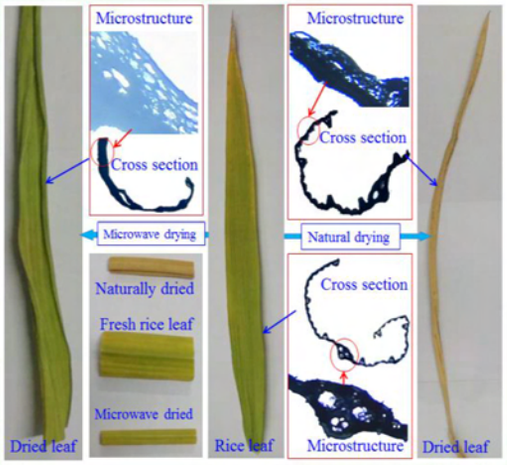
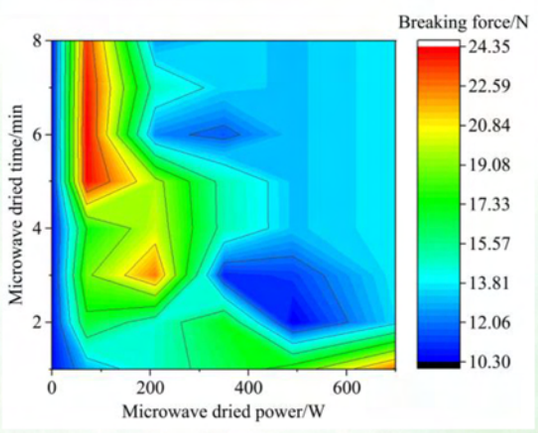
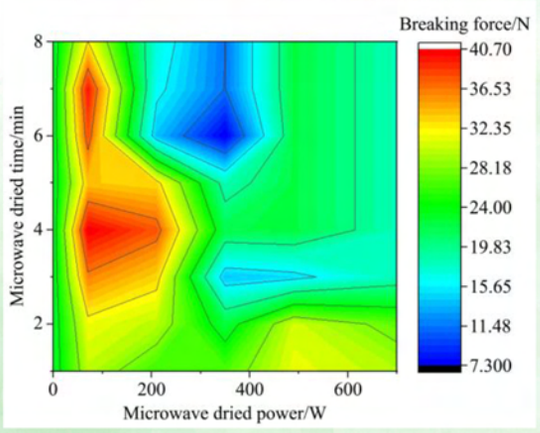


Figure 6 Morphology and microstructure difference of microwave dried, naturally dried and fresh rice leaves

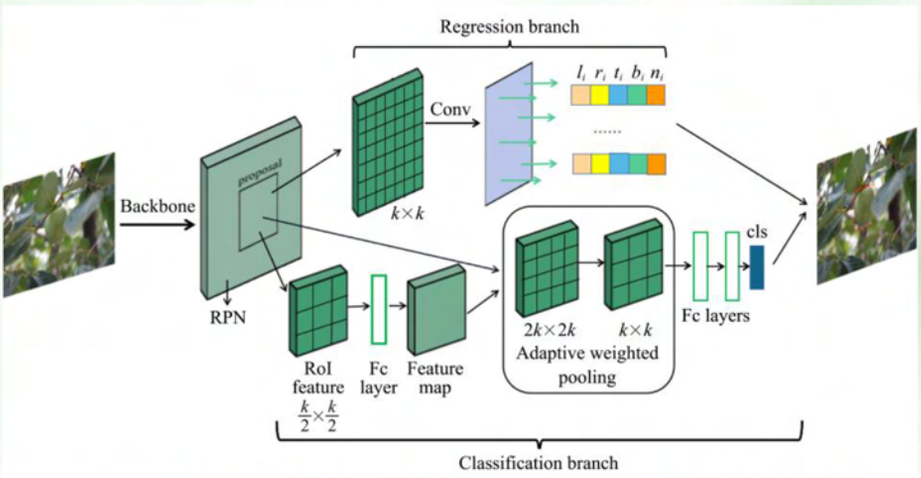


a. Upper part of rice leaf



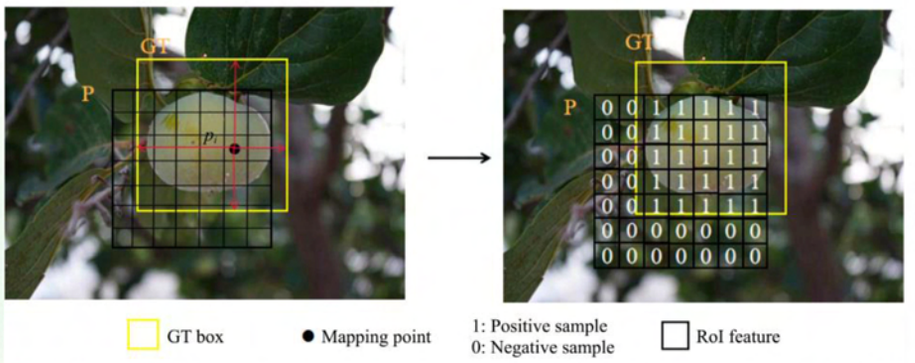
b. Bottom part of rice leaf

Figure 15 Contour map of tensile breaking force induced by different microwave dried power and times



Note: RPN: Region Proposal Network; Conv: Convolution; ROI: Regions of interest; Fc layers: fully connected layers; l_i, r_i, t_i and b_i respectively represent the offset from the i-th local feature to the left, right, up, and down of GT. n_i has only 1 and 0 values, which respectively represent that the i-th local feature belongs to the ground truth bounding box or background.

Figure 2 Overall structure of the flow chart of D2D



a. Calculation of local feature offsets in regression branch b. Distinction between positive and negative samples

Note: GT: Ground truth; P is the candidate proposal; p_i is the local feature of ROI feature.

Figure 4 Calculation of local feature offsets in regression branch and distinction between positive and negative samples

has high accuracy and strong robustness.

a. Detection effect of green persimmons b. Detection effect of green apples

Note: Red boxes represent the fruit detected by the D2D model.

Figure 7 Detection effect of green-fruit under different environmental conditions