

Development of a Low-cost Narrow Band Multispectral Imaging System Coupled with Chemometric Analysis for Rapid Detection of Rice False Smut in Rice Seed

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A multispectral imaging system was developed for rice false smut (RFS) detection. It collected six spectral images at spectrum peaks of 460, 520, 660, 740, 850 and 940 nm, respectively, using a monochrome CCD sensor (MT9V032, ON Semiconductor, Phoenix, Arizona, USA). The light source was provided by 12 narrow-band high-power LEDs (Epileds Technologies, Inc., Taiwan, China). Four mirrors were installed at four sides of the dark box to ensure the light distribution as homogeneous as possible. The multispectral images data acquisition were performed on a software developed by our group using C++ programming language based on the platform Visual Studio 2018 (Microsoft, State of Washington, USA).

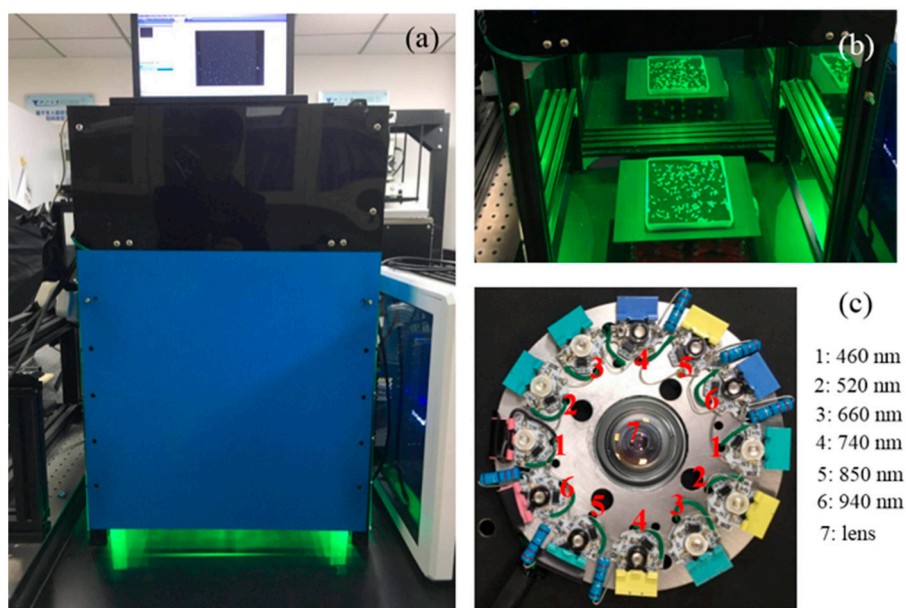


Figure S1. The multispectral imaging system (MSI) developed in this study. (a) and (b) were the overview and details of MSI. (c) was the upward view of 12 narrow-band LEDs arrayed around the camera lens.