

Performance evaluation of yield monitoring system for rice combine harvester in Selangor, Malaysia

ABSTRACT

Yield monitoring system constructed for combine harvester was able to monitor and store required, measured attributes during field tests. A rugged, wireless crop yield monitoring instrumentation system was employed on a rice combine harvester to measure instantaneous rice yield in this study. A mild steel chute mounted with SWR SolidFlow microwave type flow sensor and SWR M-Sens 2 microwave type moisture sensor were located at the end top of the clean grain auger of the combine harvester to the flow rate of the dropped grain into the grain storage tank and measure the moisture content of the grain transferred by the auger. The objective of conducted performance test was to check both the operational and robustness of the instrumentation system under the actual harvesting operation with the combine in the paddy field. During harvesting, the embedded system, DGPS, router and all sensors within the instrumentation system functioned reliable. Instrumentation system records combined multiple data by following moisture content (%), cutting width (mm), elevator rotation speed (RPM) and combine speed (km/hr). Through yield monitoring and yield mapping, the rice farmers could correct soil nutrient deficiencies as indicated by the yield variabilities within the plot for the next cropping season

Keyword: Yield monitoring; Field performance; Rice combine harvester