Exploring GPS Data for Operational Analysis of Farm Machinery.

Abstract

Global Positioning System (GPS) has made a great evolution in different aspects of modern agriculturalsectors. Today, a growing number of crop producers are using GPS and other modern electronic and computer equipments to practice Site Specific Management (SSM) and precision agriculture. This technology has the potentialin agricultural mechanization by providing farmers with a sophisticated tool to measure yield on much smaller scales as well as precisely determination and automatic storing of variables such as field time, working area,machine travel distance and speed, fuel consumption and yield information. This study focuses on how to interpretand process raw GPS data for operational analysis of farm machinery. Exact determinations of field activities usingGPS data along with accurate measurements and records of yield provide an integrated tool to calculate field efficiency and field machine index which in turn increases machine productivity and labor saving. The results canalso provide graphical tools for visualizing machine operator's performance as well as making decision on field and machine size and selection.