Precision land leveling needs in relation to water management and onfarm energy under agriculture intensification conditions

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Abstract
Egypt intends to use agricultural intensification in order to increase the yield of farmland due to the relatively high rate of population growth. The use of the agricultural intensification utilizing the techniques of laser land leveling with an optimum slope of 0.03% at Beni Suef Governorate resulted in a saving of irrigation water, a decrease in irrigation time and an increase of the farm yield; in other words, an increase in the water use efficiency. Relative to machine performance, this technique decreased the tire slippage, improved fuel consumption and decreased the overall energy requirements. As far as costs are concerned, the use of technology increased the net present value, the internal rate of return and significantly reduced the pay back period compared with the traditional land leveling methods. Finally, the use of the laser land leveling technique in combination with agricultural intensification resulted in overall increase in the income of the farmer. Key Words Agricultural intensification, precision land leveling, traditional land leveling, laser land leveling.

Keywords