

UNIVERSITI TEKNOLOGI MARA

**MEASUREMENT OF TRACTOR WHEEL
SLIPPAGE FOR TWO WHEEL AND FOUR
WHEEL DRIVE IN SHARE FARM UITM
JASIN**

MUHAMAD IRWAN BIN REPIN

Final year project report submitted in partial fulfillment of the
requirement for the degree of

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CANDIDATE'S DELARATION

I declare that the work in this Final Year project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. The Final Year project report has not been submitted to any other academic institution or non-academic institution for any other degree or qualification

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Name of Candidate	:	MUHAMAD IRWAN BIN REPIN
Candidate's ID	:	2012657036
Programme	:	Bachelor of Science (Hons.) Plantation Technology and Management
Faculty	:	Plantation and Agrotechnology
Title	:	Measurement of Tractor Wheel Slippage For Two Wheel and Four Wheel Drive In Share Farm UITM Jasin
Signature of Candidate	:	_____
Date	:	30 January 2015

ABSTRACT

Agriculture tractors considered as important machinery in agriculture industry for large area planting. The purpose of using machinery in agriculture sector is to improve the productivity, increase performance, and easier for farmers to manage their crop in field planting. Agriculture tractor can be divided into 3 categories which are unequal four wheel drive or front-wheel assist and two wheel drive. Wheel slippage can be defined as a measurable quantity that indicates the relative effectiveness of the traction delivery system to the tractor wheel. The suitable operating load was an important factor to optimizing the tractor performance before operates in field planting. The measurement of tractor wheel slip was important for the farmer to know in order to prevent the excessive ballasting on the tractor depends on the soil condition in their field. The tractor wheel slip should be optimally run at 10% to 15% for two wheel drive (2WD) tractors and 8% to 12% for four wheel drive (4WD) or front wheel assist (FWA) equipped units. This study was carried out to measure the tractor wheel slippage for 2WD and 4WD in tilled soils surfaces. The location was carried out on tilled soil in UITM Jasin. The result shows that there was significant difference between tractor engine speeds for 2WD but at the same times, it also shows there no significant difference at the certain engine speed on both 1000, 1500 rpm and 2000, 2500 rpm respectively. For 4WD tractor, its shows that there are significant differences among various speed but still show significant difference at 2000 and 2500 rpm. Besides, the relationship was strongly positive and percentage of wheel slippage for 4WD was most suitable to operate in tilled soil conditions at share farm UITM Jasin.

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