# Development of Mathematical Model for Repair and Maintenance of Some of the Farm Tractors of JNKVV, Jabalpur, India

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## Abstract

An experiment was conducted to studies on Development of mathematical model for repair and maintenance of some of the farm tractors JNKVV Jabalpur, the repair and maintenance data of the farm tractor were taking from the breeder soybean production farm, biotechnology, groundnut farm and horticulture farm. The data collect yearly working hours; yearly repair and maintenance costs included spare part and repairable part, lubricant, wages and others. A study was conducted to modelling of accumulated repair and maintenance costs of JNKVV farm tractors as percentage of initial purchase price (Y) based on accumulated usage hours (x). Recorded data were used to determine regression model(s). Exponential, logarithmic, linear, polynomial. The Prediction of cumulative repair and maintenance costs the power model is better than the models that is linear, (where $x$ in 1000) with $R^2 = 0.989$ to predict accumulated repair and maintenance costs of JNKVV tractors can be strongly recommended. The repair and maintenance cost consist of spare parts, lubricant, wages and other. The average spare parts, wages and others and lubricants costs is 49.32, 17.24 and 12.15%.

## Introduction

Worldwide Tractor is the main source of power on the farm, and represents a major component of farm xed costs. With due eld maintenance tractors can operate for long period and do great deal of work before major repairs are required [1]. Tractor break down can be of a high cost not only from expenditure point of view, but also because of the disastrous e ect on crop productivity, and the fact that idle sta must still be paid. e extent of the problem of tractor failure in developing countries is more serious as compared to developed countries. is is due to acute shortage of genuine spare parts, preventive maintenance,

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