Hybrid System for Weed & Flower Leaf Removal

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Abstract: Weeds compete with crops for essential nutrients. In agriculture, it’s a very difficult task to weed out unwanted plants manually as well as using bullock operated equipment’s which may further lead to damage of main crops. More than 33 percent of the cost incurred in cultivation is diverted to weeding operations there by reducing the profit share of farmers. Weeder are machines used for weed removal. Mechanical weeding is one of the prominent forms of weed removal. Smaller weeding machines commonly known as portable weeders are solely used for weed removal in agricultural fields, gardens, public parks, etc. Unlike tractors, weeders are non-conventional so far as the displacement of labours is concerned. In promoting weeders especially considering the fact that the majority of farmers are having small land. So they can hardly afford costlier tractors. Therefore, the weeder should become a useful machine in the internal cleaning of crops which having small distance between them like groundnuts, sugarcane, soya bin crops, cultivation of paddy, in particular, and other crops in general for the smaller farmers. This project the application of Hybrid System for weed removal is quite common to reduce the human effort in several things. The Hybrid System Weed Removal can be used to remove weed, flower leaf. Which reduces human efforts of cutting them easily. This project can be easily handled to cut the flowers leaf easily by means of the cutter. Weeds are one of the major causes of loss of agricultural produce. Main objective of weeder is to reduce the manpower as in today labours are very hard to find as well as working time is more Rotary tillers power is directly transmitted to the tillage blades, so the power transmission efficiency in rotary tillers is high

1. Introduction

Agriculture is the backbone of Indian economy. India being developing nation agriculture and industries based on agriculture products has prime importance in the national economy. As Per the 2010 world agriculture statistics, India is the world’s largest producer of many fresh fruits and vegetables, milk, major spices, select fresh meats, select fibrous crops also. Majority of the Indian population depends on agriculture and agro-based industries and businesses. Lack of mechanization or automation is one of the major roadblocks to improving the productivity of agriculture. Weeds are one of the major causes of loss of agricultural produce. Weeds compete with crops for essential nutrients. In agriculture, it’s a very difficult task to weed out unwanted plants manually as well as using bullock operated equipments which may further lead to damage of main crops. More than 33 percent of the cost incurred in cultivation is diverted to weeding operations there by reducing the profit share of farmers. Weeder are machines used for weed removal. Mechanical weeding is one of the prominent forms of weed removal. Smaller weeding machines commonly known as portable weeders are solely used for used weed removal in agricultural fields, gardens, public parks, etc. Unlike tractors, weeders are nonconventional so far as the displacement of labours is concerned. In promoting weeders especially considering the fact that the majority of farmers are having small land. So they can hardly afford costlier tractors. Therefore, the weeder should become a useful machine in the internal cleaning of crops which having small distance between them like groundnuts, sugarcane, soya bin crops, cultivation of paddy, in particular, and other crops in general for the smaller farmers. Its main objective is to reduce the manpower as in today's scenario labours are very hard to find as well as it reduces the working time.

A weed is a plant considered undesirable in a particular situation, "a plant in the wrong place". Examples commonly are plants unwanted in human-controlled settings, such as farm fields, gardens, lawns, and parks. Taxonomically, the term “weed” has no botanical significance, because a plant that is a weed in one context is not a weed when growing in a situation where it is in fact wanted, and where one species of plant is a valuable crop plant, another species in the same genus might be a serious weed, such as a wild bramble growing among cultivated loganberries. Many plants that people widely regard as weeds also are intentionally grown in gardens and other cultivated settings. The term also is applied to any plant that grows or reproduces aggressively, or is invasive outside its native habitat. More broadly "weed" occasionally is applied pejoratively to species outside the plant kingdom, species that can survive in diverse environments and reproduce...
quickly; in this sense it has even been applied to humans. Certain classes of weeds share adaptations to rural environments, that is to say, disturbed environments where soil or natural vegetative cover has been damaged or frequently gets damaged, disturbances that give the weeds advantages over desirable crops, pastures, or ornamental plants. The nature of the habitat and its disturbances will affect or even determine which types of weed communities become dominant.

2. Proposed work

3. The main Idea of development this project is for developing a hybrid machines that is capable for removal of weed as well as flower leaves. In this system we provided a motor for removal of weed, we provided an electric power source for the motor to drive the mechanism of removal of weed.

4. The weed will be removed due to rotary motion of the blades, (Blades are connected to the motor using a chain sprocket mechanism). Using the electric motor we also decided to develop a system which is capable of removing a leaf and the thorns of the flowers.

5. Weeding with the use of tools like cutlass and hoe requires high labour force in a commercial farming system hence mechanical weeder is necessary to reduce the labour force. Environmental degradation and pollution caused by chemical is reduced by the use of Mechanical weeder. Low effective operation, low work effort and high time requirement for different types of hoe or cutlass, can be overcome with the use of mechanical weeder

6. Presently in India, weeding with simple tools such as cutlass, hoe etc is labour intensive and intensive and time consuming. Thus, there is a need for the design of manually operated weeder for intensive and commercial farming system in India. One of the problems in crops and vegetables production is poor weed control; hence there is need of mechanical weeder to increase the production of these products. The cost for employing a Labour force when using simple tools is very high in commercial farming system. This can be reduced using mechanical weeder

7. Objective of Work

Objective of this work is to develop working model which can reduce the man labor required to remove the unwanted weeds in farms or requested area. This Concept involved the development of mechanical weeder, after discovering that tools such as cutlass and hoes require high drudgery, time consuming and high labour requirement. As a solution to these problems, mechanical weeder was designed and developed. The mechanical weeder was made of two implements attachment i.e. the primary cutting edge which is in front to loose soil above and the secondary cutting edge which is behind to do cutting and lifting of weeds. An extra attachment of funnel and circular pipe for fertilizing and seeding of ragi after cultivation. The tool developed will be able to fulfill the present requirement for the weed control. Accordingly, the present development is directed to an improved manual tilling, mulching and weeding tool. As it is hybrid system we also thought about focusing on renovation of unwanted leafs on flowers. This is considered as a headache for farmers to remove the leaf and thrones from the flowers.

8. References