

Development and Experiment of Fertilizer Spreader Device Mounted on Farm Wagon

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Abstract

Sugar apple is the most important fruit tree in Taitung. Farmers usually applied fertilizer by hand, which is a hard work and very labor-intensive. There are several kinds of fertilizer spreaders have been developed in the past, but none has been used successfully in sugar apple orchard, due to for price, mechanical stability, and other reasons. We developed fertilizer spreader device mounted on farm wagon in this research. Experiments results showed the fertilizer spreader device mounted on farm wagon can apply many types of solid fertilizers in sugar apple orchard, and spread 8-26 kg fertilizer per min, the fertilizer was located at 1.35 m both sides of the platform on the ground. The average operation rate is 1.43 ha/hr, that is 7 times of manual operation (0.2 ha/hr). Based on the cost analysis, scenario III of purchasing spreader machinery at 35,000 NT\$ and operating on a minimum area of 1 ha will be more economical than hand applying operation.

Keywords: Sugar apple, Fertilize, Fertilizer spreader device mounted on farm wagon, Cost analysis

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