

NEW 915 HOODED SPRAYER DESIGNED TO FIGHT RESISTANT WEEDS

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Abstract

Weed control has always been a key part of producing high yielding and quality cotton. Over the years growers have employed the most up to date methods for accomplishing good weed control. Herbicide resistant weeds have become the new challenge for the cotton grower in the last decade. Researchers in the public and private sectors have devoted their full attention to finding methods to control these resistant weeds. With this same goal in mind, Willmar Fabrication took to the field with the idea that the hooded sprayer could aid the grower in his quest to control these weeds. Field test were conducted during the 2010 growing season to evaluate the hooded sprayers effectiveness in applying non selective herbicides such as Gramoxone® in cotton. These tests have proven that non selective herbicides can be safely applied in cotton to fight resistant weeds.

Introduction

The hooded sprayer was introduced in the early 1990s as a way to apply Roundup® Herbicide in cotton to control weeds. The first hooded sprayer was the model 410 which in the beginning was used primarily as a salvage tool. As more and more growers adopted conservation or reduced tillage practices, the hooded sprayer replaced mechanical cultivation. This change in cultural practices by growers, lead to the birth of chemical cultivation and the adoption of the hooded sprayer as a key component in their weed control systems. With the introduction of Roundup Ready® Cotton the growers no longer needed the 410 hooded sprayer. A need to be able to post direct Roundup under Roundup Ready Cotton and minimize contact with the cotton foliage lead to the introduction of the model 420 hooded sprayer. This hood was referred to as the lay-by or the dolphin nose hood. The Roundup Ready system was the most effective and easiest weed control system cotton growers had ever experienced. As with all good things, Glyphosate resistant weeds have changed the way growers have to plan and execute their weed control program in cotton today. After the results observed with the old 410 hood in field trials during the summer of 2010 and meeting with growers to see what improvements they suggested for the hooded sprayer, Willmar Fabrication introduced the new 915 Hooded Sprayer.

Design Improvements

The new model 915 Hooded Sprayer design incorporates many of the inputs given by growers to accomplish its superior design. This new design will allow growers to apply herbicides like Gramoxone with confidence that crop safety will not be sacrificed. The design improvements are as follows:

Sloped Front

This will allow cotton limbs to flow around the hood thus reducing damage to the plant vs. the old 410 hood.

Longer Hood

The longer hood will allow for improved spray coverage which is critical to the performance of contact herbicides like Gramoxone. This improved coverage should lead to better weed control. A longer design will add to the stability of the hood for more consistent post direct applications. This will be key for the early post direct sprays that will be needed for fighting resistant weeds.

Open Front

Allowing weeds to flow under the hood rather than being pushed aside as with the model 420 hood. Improved control of larger weeds can be better accomplished with the 915 hood.

Larger Weed Gathering Bars

The weed gathering bars are made of ½ inch rod VS 3/8 inch rod on the old 410 hood. These ½ inch bars are more durable than old bars leading to less repair and replacement.

Three Nozzles Under Hood

This gives better spray coverage than the two nozzle system used in the 420 hood and improved weed control.

Nozzle Placement

Nozzle placement from front to back and from side to side has been arranged to give better weed spray coverage. The front to back arrangement has the nozzle placed at an angle from side to side allowing the weed to stay in the coverage longer. The side nozzles are pitch inward slightly which should give better weed spray coverage than the 410 hood.

Center Nozzle Height

Center nozzle is approximately three inches higher due to over all height of the 915 hood VS the 410 hood. This will give better spray coverage.

Nozzle Size

The 915 hood will have 02 vs. 1.5 nozzles allowing for more spray volume which is needed with contact herbicides and larger screens (50 mesh vs. 100 mesh) for less screen slogging with the use of flowable formulations.

Nozzle Retention Plate

A nut has been molded into the plastic of the 915 hood to allow for the use of a bolt to hold the retention plate in place. The old hoods used a screw through the plastic which could become stripped and not hold the retention plate in place. The retention plates are also thicker and hold the nozzle between two plates for a more secure fit.

Spray Hoses Recessed

Under the hood spray hoses are snapped into a recessed area in the side of the hood to protect them from damage by cotton limbs.

Skids Hardened Surface

Skids on the 915 hood will be hardened by placing a weld bead on the bottom surface to make them last longer.

Stronger Down Pressure Springs

These springs will work in conjunction with the longer hood to add stability for post direct applications and to hold the hood in contact with the ground.

Grease Fittings in Hinges

Grease fittings placed at all four hinge point in the hood mounting bracket will allow for regular greasing to prevent hinges from freezing up.

Mounting Brackets Pre-punched

The mounting brackets will be pre-punched for 4, 5, and 7 inch toolbars which will allow growers to fit the 915 hood to toolbars they may have.

Summary

Resistant weeds have changed the way cotton growers have to plan for producing high yielding and quality cotton. The hooded sprayer proved to be a valuable tool for the growers weed control system prior to Roundup Ready Cotton. It has proven that even the old hoods could apply non selective herbicides to the row middles in sensitive crops very effectively. With the improved design of the new 915 Hooded Sprayer, it is the most effective tool

presently available to deliver the more effective herbicides post directed in the row. By controlling these resistant weeds, a cotton grower reduces yield and quality losses, as well as, the seed bank for future years. The 915 Hooded Sprayer is an affect weapon in the grower's war on resistant weeds.

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