

- b. Yield -- high density about 15% over conventional.
- c. Quality -- Threshed beans very clean with very little mechanical damage - less than from regular combine harvest.
- d. Problems --
 - (1) Planting equipment.
 - (2) Weed control.

CHISHOLM-RYDER "MULTI-D" HARVESTER

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The Chisholm-Ryder Company has responded to pressures exerted by all members of this panel, their associates and leaders of our industry in various areas for the development of a narrow row or High Density Snap Bean Harvester. The indispensable assistance of many forces, the encouragement and cooperation of many individuals and institutions has resulted in less than three year's time into a development that promises to be a very versatile, productive method of harvesting snap beans and several other crops important to the processing industry. We have termed this development a "Multi-D" method and/or a "Multi-D" Harvester.

We wish to direct to the attention of those interested in bean variety development a few slides showing undesirable and desirable plant types.

Let us emphasize the desirable growth and plant characteristics for Multi-D harvesting of snap beans.

Vigor - Robust and vigorous in a density of at least 36" per plant.

Roots - Strong and deep - tolerant to root rot. We have seen roots on experimental varieties which appear certain of overcoming this severe problem. Let's get this gene into our commercial varieties.

Plant Stem hypocotyl and main stem thick and sturdy enough to hold plant erect. Keep beans off the ground with 6 ton crop.

Leaf - Reduce size as far as practical.

Bean Stem - Longer stems aid harvesting and reduces damage.

A short movie film, in an amateurish manner shows the Multi-D Harvester harvesting #958 baby limas, Blackeye Peas, Edible Soybeans, Fordhooks and Snap Beans. A longer film showing "Snap Bean Multi-D Harvesting Cross Country" can be seen by request.

Although we have had many compliments on the Multi-D Harvester, it has several imperfections which are being corrected for the 1972 production harvester.

1. Increase the effective harvester width by 8". This means a total of 92" plus a 3" plant guide on each side which directs plant material from an 8' width. This was done for two reasons:
 - a. To harvest at least as wide as outside of right hand front wheel.
 - b. Have harvester more productive and versatile. Versatility in row widths will be 3-38" or 8-12" or narrower rows or any combination in between.
2. Reduce leaks. A great deal of the 1971 spillage will be eliminated and thus improve efficiency of the harvester.
3. Bearing in the reel will be replaced with those needing less attention.
4. Reduce percentage of damage to beans occurring in transfer to main conveyor.
5. Discharge debris on left hand or harvested area.
6. Install diesel power.

The investment per acre of harvest or per ton harvested will be comparable to present harvesters. In addition, the capability is incorporated to harvest much narrower rows which certainly have a much higher yield potential.

Productivity per acre, per dollar invested and per man hour is becoming increasingly important.

This harvester will harvest in any forward direction regardless of direction of the rows. Operate the harvester within boundaries of the field and the field will be harvested.

The potential of this harvester to harvest a multiple of crops should not be overlooked. The future of Multi-D harvesting and resulting potential developments for our industry will depend on the acceptance by the processing industry of phase one. Marginal crops may become profitable. New crops and products may have promising profitable market.

Holding the status quo has always been expensive to those who find it comforting. Chisholm-Ryder's future developments for our industry must be dependent on its resources.

We appreciate the cooperative efforts of all and look to the future with optimism.