

Zero Till Drill – A Suitable Tool for Sowing Wheat in Tal Area

ABSTRACT

Zero till drill is very useful implement for sowing wheat crop especially in such area where there is a little time for land preparation. In tal areas, water recedes in October and large area of field get exposed for sowing crop at a time. More in such areas due to high percentage of clay and low permeability of soil, proper tilth is not obtained by ploughing the soil which results in poor yield of wheat crop. Studies for the suitability of zero till drill in Tal area recorded better performance of Wheat under the system.

KEY WORD: Clay, Tilth, Yield

INTRODUCTION

The most prevalent cropping system of Eastern Bihar is wheat. The soil of this area is heavy consisting more than 50% clay content more than 50 percent. The clay type that dominates in montmorillonite which is of the swelling and shrinking type, the soil forms big cracks and hard clods on drying. Due to heavy rain and water stagnation in the catchment area, farmer faces several problems to get their land cultivated. Water recedes in October and large area of field gets exposed for sowing of crops at a time and sowing operation is which is to be done in very short duration within a week. Due to inundation of water for four months these areas remain completely free from weeds. Thus, Tillage is generally done to control weed and create a fine tilth for sowing of crop especially wheat. In Tal due to high amount of clay and low permeability of soil, proper tilth is not achieved by ploughing the field. Therefore, zero till drill, which doesn't expose the soil to a greater depth that's why and

Comment [A.1]: Rewrite the abstract to show meaningful sentences in the following order.....

Introduction (justification/significance of the study and objective)..... methodology..... results and discussion... conclusion

Comment [A.2]: Kindly give detailed address of this area, Country especially.... Remember this is an international journal where anyone in any other part of the world can access this article

Comment [A.3]: ??????

Comment [A.4]: What is Tal?

Where is Tal?

Brief info on Tal is needed here

25 | kicks against clods formation is not possible is used. Moreover, proper aeration is provided
26 | for germination of seeds., this avoids any mechanical obstruction for germination of seeds as
27 | furrow remains uncovered. The experimental findings on these aspects were observed and
28 | described into subsequent heads. Thus, the main objective of this study was
29 | to.....

Comment [A.5]: Let this first section end with a statement of the objective

30 | MATERIALS AND METHODS

31 | The test was conducted in Rajpur Tal of Bhagalpur district for direct sowing of wheat
32 | after harvest of rice. The soil and sowing characteristics has been is presented in Table 1.
33 | The paddy field was manually harvested and the stubble was left at a height ranging 10-15
34 | cm. For accurate seed rate, the drill was calibrated like traditional seed drill but in this case,
35 | seed rate was kept 20% higher than recommended conventional drilling due to. The moisture
36 | content was 20 percent. The other method for sowing of wheat was also carried out in the
37 | Rajpur Tal and the suitability of the zero till drill was evaluated.

Comment [A.6]: Justify the choice of this 20% increase in seed rate than recommended conventional drilling

Comment [A.7]: Dry or wet basis

Comment [A.8]: This is too ambiguous,

You have not explained any other method before now..... kindly explain the two methods clearly

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38 | RESULT AND DISCUSSION

39 | The results of this experiment are presented in Table 2 and Table 3. The emergence of wheat
40 | as influenced d by different method of sowing at an interval of 7 days is presented in Table 2.
41 | The maximum emergence was noted in case of zero till drill due to minimum resistance to
42 | germinating seeds. The yield attributing character is presented in Table 3. The effective tiller
43 | per square meter of field, no. of grains per panicle and 1000 grain weight is found to be more
44 | in case of sowing of wheat by zero till drill. The yield of grain has been noted 38q/ha by
45 | sowing the seed by zero drill, which is relatively higher than other sowing method adopted in
46 | the Tal land.

Comment [A.9]: This is not acceptable in articles

Comment [A.10]: You did not explain how all these were determined in the Materials and methods section

All the parameters you determined must reflect first under methodology and how you determine them including all mathematical relations/formula used

Comment [A.11]: Same as the comment above

Comment [A.12]: Strange????????

Comment [A.13]: Beef up the discussion section more appropriately

47 | Based upon the above results, the zero till drill prove most suitable machine for
48 | sowing wheat in Tal land, where little time is left for land preparation.

49 | REFERENCE

50 Annual report,1998-99, RWMP, RAU, Pusa, Samastipur.

51 Annual report,1999-2000, RWMP, RAU, Pusa, Samastipur.

52 Annual report,2000-2001, RWMP, RAU, Pusa, Samastipur.

53 Annual report,1999-2000, RWMP, PAU, Ludhiana.

Comment [A.14]: You did not cite any of this in the body of the report

54 **Table 1: Soil and sowing characteristics of experimental site**

You may also need to beef up the referenced materials and update the list

Location	Soil Characteristics						Sowing Characteristics	
	Textural class	PH	EC (mmh/c)	OC%	HC (cm/hr)	BD (g/cm ³)	Moist. Content (%)	Ht. of stubble (cm)
Rajpur Tal of Bhagalpur district	Clay	7.2	0.35	0.52	0.126	1.46	20	10-15

55

56 **Table 2: Emergence of wheat as influenced by different treatments**

Sl. No.	Treatments	No of emergence per sq. meter	
		7 days after sowing	15 days after sowing
1.	Broadcasting of seed and mixing by cultivar	152	170
2.	Sowing inploughed field by broadcasting and mixing by cultivator	178	205
3.	Sowing by zero till drill	185	230

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58 **Table 3: Yield attributing characteristics and yield of wheat**

Sl. No.	Treatments	Effective Tiller/sqm	No. of grains/panicle	1000 grains wt (gm)	Yield (q/ha)
1.	Broadcasting of seed and mixing by cultivar	208	39	34.8	27.8
2.	Sowing inploughed field by broadcasting and mixing by cultivator	218	37	36.5	34.5
3.	Sowing by zero till drill	221	41	38.2	38.0

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