

# **STUDIES OF POTATO PLANTER MANAGEMENT IN ELMORE COUNTY**

**Mir M. Seyedbagheri and James M. Torell**

## **INTRODUCTION**

Potato planting has been recognized as an area of potato crop management that can be improved. Since potato plants rapidly fill in blank spots, the effects of poor stand are not readily apparent in the field. However, deviations from optimum plant spacing affect below ground behavior of the potato crop resulting in lower overall yield and the production of many undersize tubers. For the past several years, the Elmore County Extension staff has been conducting evaluations of planter performance to demonstrate how better management can be applied to improve performance. The studies reported here are a continuation of these studies (Iritani and Thornton, 1984, Seyedbagheri and Torell, 2000, Seyedbagheri, 1995).

## **METHODS**

Seed cutter performance was evaluated by taking samples from the seed lot being used by the grower cooperator. Planter performance was evaluated by uncovering the seed pieces in 25 feet of row. Seed pieces were counted and the spacing between seed pieces was measured. Distances were categorized as underspaced (0-7 inches), acceptable (8-13 inches), or overspaced (>12 inches). The number of spacings in the acceptable range was divided by the total and multiplied by 100 to get percentage planter efficiency.

## **RESULTS AND DISCUSSION**

In this evaluation, 8 to 13 inches was used as the optimum range. However, seed piece spacing just below and just above the optimum range will still produce acceptable results. In this study, a substantial number of spacings measured fell into this category of being slightly less than or greater than optimal but close enough to produce good yields of high quality potatoes (Tables 1-3, Figures 1-4). These results are consistent with the results of our previous studies of planter performance (Seyedbagheri and Torell, 2000). These studies demonstrate the importance of planter speed for achieving good planter performance. Relatively small decreases in planter speed result in large increases of seed pieces spaced in the desirable range 8-12 inches.

## LITERATURE CITED

Iritani, W.M., and R. E. Thornton. 1984. Potatoes: Influencing Seed Tuber Behavior. PNW 248. 15pp.

Seyedbagheri, M. M., M. Thornton, and M. Larkin. 1995. Efficient Planter Performance Adds to Potato Profits. Proceedings of the Winter Commodity Schools. 27:127-32.

Seyedbagheri, M. M., J. M. Torell. 2000. Improved Management of Potato Planters and Potato Seed Cutters. Proceedings of the Winter Commodity Schools. 32:99-104.

**Table 1. Evaluation of Spudnik planter at 3.5 and 3.9 mph**

Spacing Range	Planter Row <sup>1</sup>				
	Planter A Middle Row <sup>2</sup>	Planter B Left Row <sup>2</sup>	Middle <sup>3</sup>	Front Right <sup>3</sup>	Front Left <sup>3</sup>
0-7 inches	18%	8%	8%	0%	0%
8-13 inches	51%	72%	73%	67%	85%
14 inches +	29%	20%	19%	33%	15%

<sup>1</sup>Percentage of Seed Pieces

<sup>2</sup>Planter speed at 3.5 mph

<sup>3</sup>Planter speed at 3.9 mph

**Table 2. Evaluation of Kverland planter**

Spacing Range	Planter Row <sup>1</sup>	
	Left	Middle
0-7 inches	0	7
8-13 inches	65	85
14 inches +	35	7

<sup>1</sup>Percentage of Seed Pieces at 3.5 mph

**Table 3. Seed piece profile**

Seed Piece Weight	Percent of Seed Pieces
0.5-1.5 oz	6
1.5-3.0 oz	70
3.0-4+ oz	24

Figure 1. Seed piece size profile

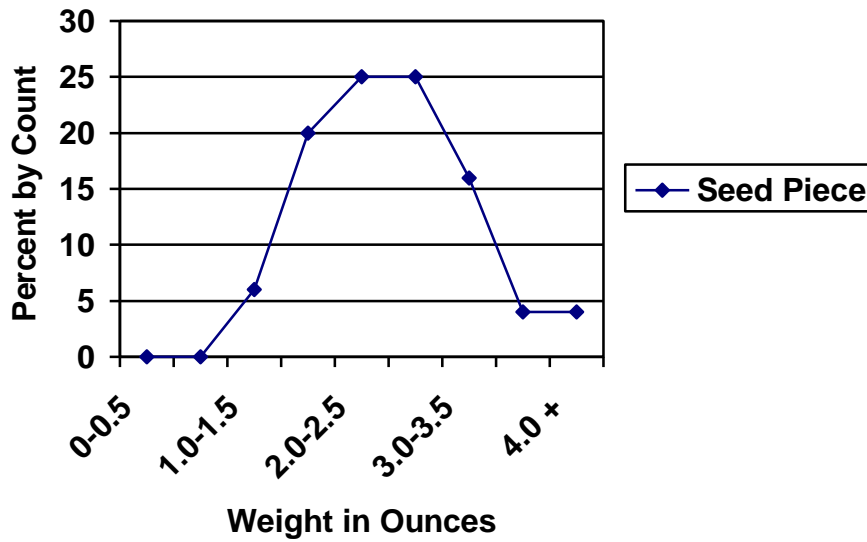


Figure 2. Evaluation of Spudnik Planter at 3.5 mph

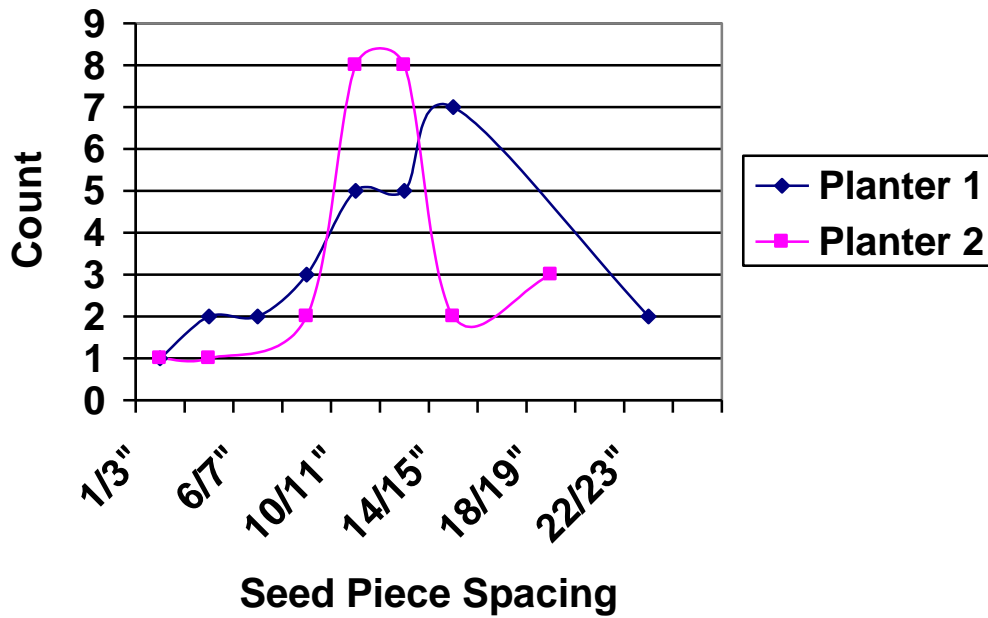


Figure 3. Evaluation of Spudnik Planter at 3.9 mph

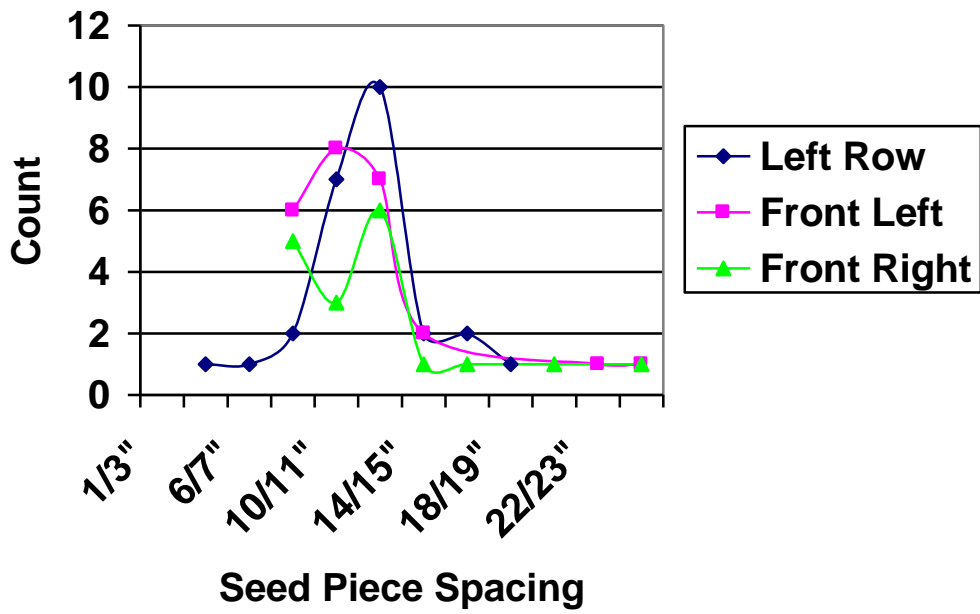


Figure 4. Evaluation of Kverland Planter

