EVALUATION OF COMPOST IN ORGANIC POTATOES

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Organic farming, the production of agricultural products without inputs of chemical pesticides and fertilizers, has become a profitable area of farming in recent years. Compost is an organic fertilizer and soil amendment that is commonly used in organic farming to provide nutrients and improve soil tilth. This trial was conducted by the Elmore County Extension staff to evaluate the use of compost in organic potato production under Elmore County conditions.

METHODS

The trial was established on a certified organic potato field near Hammett, Idaho. Compost was applied to the plots on April 11, 1997. The compost was weighed, spread into opened hills and incorporated. The treatments (a check, and compost applied at 5, 15, and 25 T/A) were arranged in a randomized complete block with four replications. Ranger russet potatoes were planted by the grower. All crop management practices other than compost application were those used by the grower on the rest of the field. Previous crops were alfalfa (1996, 1995) and dry beans (1994). The plots were harvested on September 30th. The potatoes were graded and samples were taken for determination of specific gravity.

RESULT

The highest total yield was 327.5 cwt/A for the 25 T/A rate of compost application. However, this was not significantly different than any of the other treatments (Table 1). Figure 1 shows the effect of compost treatments on yield. Nitrogen released by legume crops in the previous three years may have released enough nitrogen to mask that released by mineralization of the compost.

Specific gravity varied from 1.082 to 1.085. Statistical analysis was not done for specific gravity because replicated specific gravity samples were not taken.

Table 1. Effect of compost treatments on yield.

Figure 1
Yield (cwt T/A)

Treatment	0-4 oz	4-8 oz	8-12 oz	> 12 oz	Total
Compost (5 T/A)	39.3	108.3	77.6	92.8	318.0
Compost (15 T/A)	39.0	109.0	63.5	94.3	305.8
Compost (25 T/A)	46.3	97.8	66.4	117.0	327.5
Check	39.8	95.1	85.1	95.1	315.1
Significance	N.S.	N.S.	N.S.	N.S.	N.S.