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***Response of Pepper to Pursell Polyon Controlled-Release Fertilizers 97-04***George J. Hochmuth<sup>1</sup>**Materials and Methods**

Soil for the experimental area was prepared by plowing and discing, and prebeds were made on four-foot centers. Plots were marked off in 25-foot lengths. Fertilizer was applied in tow portions, part broadcast and incorporated and part banded in the center of the bed. The treatments are listed in Table 1. On March 27, fertilizer applications were made. Finished beds were covered with black mulch and drip irrigation tubing (Chapin Watermarks, Watertown, NY) was placed in the center of the bed just above the center band of fertilizer. Plastic mulch was Sonoco 0.6 mil. thick (Mt. Olive, NC). Finished beds were 6 inches in height and 24 inches across the top. During mulching, the bed soil was fumigated with methyl bromide at 350 lbs per acre (broadcast rate) with knives positioned so as not to disturb center fertilizer band.

On 1 April 1997 pepper transplants ('Camelot X3R') were planted through the mulch in twin rows spaced 12 inches apart. Plants in each row were spaced 12 inches apart. Peppers were irrigated by drip irrigation to maintain a tensiometer at -10 centibars at 6-inch depth in soil in the root zone. Diseases and insects were controlled by applications of labeled pesticides.

Pepper fruits were harvested on 13, 23, and 30 June 1997 and graded according to size on roller sizer (Kerian Co., ND). Data were analyzed by analysis of variance.

**Results and Discussion**

Fertilizer treatment had no significant effect on early or seasonal yield of peppers (Table 2). Pepper yields were only moderate overall, although, acceptable commercial yields. Upon further inspection, it was determined that the Polyon controlled-release granules had prematurely released the nitrogen. Observations made at midseason, confirmed that the fertilizer granules were empty. The result was that most treatments behaved as soluble N treatments.

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**Table 1.** Fertilizer treatments used in Polyon pepper experiments, Gainesville, FL. Spring 1997.

Treatment Number	Incorporated		Banded		Total	
	lb/acre		lb/acre		lb/acre	
	N	K <sub>2</sub> O	N	K <sub>2</sub> O	N	K <sub>2</sub> O
1	AN-200	MP-80 SP-40	---	---	200	120
2	AN-160	MP-80 SP-40	---	---	160	120
3	AN-40	MP-30	AN-120	MP-50 SP-40	160	120
4	AN-40	MP-30	UR-40 PCU-80	MP-50 SP-40	160	120
5	UR-40 PCU-80	MP-30	AN-40	MP-50 SP-40	160	120
6	AN-40	MP-30	UR-40 PCU-52 PCKN-15	PCKN-50 SP-40	160	120
7	UR-40 PCU-65 PCKN-15	PCKN-50	AN-40	MP-30 SP-40	160	120
8	AN-40	MP-30	PCU-80	MP-50 SP-40	120	120
9	9 PCU-80	MP-30	PCU-80	MP-50 SP-40	120	120
10	AN-40	MP-30	PCU-65 PCKN-15	PCKN-50 SP-40	120	120
11	PCU-65 PCKN-15	PCKN-50	AN-40	MP-30 SP-40	120	120

AN-Ammonium nitrate (34-0-0)  
UR-Urea (granular 46-0-0)  
PCU-Coated urea (44-0-0)  
PCKN-Coated KNO<sub>3</sub> (13-0-43)  
MP-Muriate of potash (0-0-62) or (0-0-60)  
SP-Sulfate of potash (0-0-50)

**Table 2.** Pepper yield responses to Pursell Polyon controlled-release fertilizer.

Treatment	Yield 28-lb cartons/acre				
	Extra Large	Large	Medium	Cull	Total Mkt.
----- Early Yield (first harvest) -----					
1	247	8	0	6	255
2	455	4	1	5	460
3	256	4	1	4	261
4	175	28	1	6	205
5	311	20	0	0	331
6	296	18	3	0	317
7	269	3	0	7	272
8	391	20	2	15	412
9	416	5	3	0	424
10	371	48	6	0	425
11	433	26	2	5	460
Significance	NS	NS	NS	NS	NS
----- Total Season (3 harvests) -----					
1	410	175	46	45	632
2	699	151	74	55	924
3	483	264	105	60	853
4	317	323	131	46	771
5	477	222	58	27	757
6	540	211	65	18	816
7	488	215	111	73	814
8	637	179	47	43	863
9	728	235	88	38	1052
10	656	324	98	55	1078
11	659	245	54	42	959
Significance	NS	NS	NS	NS	NS