

**Poole, H. A. 1976. Fuel usage — A survey of northeast Ohio greenhouse growers. Ohio Florists' Assoc. Bul. No. 563.**

Information determined from 5 growers of various crops and range size. Fifty percent of the fuel used by the growers was during a three month period (Nov., Dec., Jan., or Dec., Jan. and Feb.) Total usage between April to September is equivalent to one month of winter use (December or January).

The average yearly usage ranged from 264 to 306 cu.ft. of natural gas per sq.ft. of glass, with an average of 280 cu.ft. This is equivalent to 2.0 gallons of No. 2 fuel oil. A spot check with growers using fuel oil alone showed that 85,000 to 90,000 gallons of No. 2 oil are required yearly per acre of greenhouse in northeast Ohio.

A grower can estimate his usage on a per pot basis with different spacings from tables 1 and 2. Suppose a 3000 sq.ft. greenhouse has a productive area of 67%, with 2000 plants spaced on 12-inch centers. Including both bench and aisle space, each plant receives 1.5 sq.ft. That plant would receive

only 4.2 cu.ft. of gas during July (0.03 gal. oil), but 75.6 cu.ft. in January (0.54 gal.). A three month crop at this spacing would require:

	Natural gas (\$2.00/MCF)	
Labor Day	18.8 cu.ft.	( 3¢)
Christmas	140.7	(28¢)
Valentines Day	210.0	(42¢)
Mother's Day	130.2	(26¢)
	No. 2 fuel oil (40¢/gal.)	
	0.12 gal.	( 5¢)
	1.01	(40¢)
	1.50	(60¢)
	0.93	(37¢)

(We have begun a survey of fuel consumption for several cooperating growers in the Denver region for the 1976-77 season. Growers, whom we have not contacted, but would be willing to provide their fuel consumption figures on a monthly basis, please contact Joe J. Hanan, CSU. There will be no identification of information from any grower. The industry needs this data in case of governmental regulation, and so we can see how we compare with each other.)

Table 1: Natural gas usage required by floral crops grown in northeast Ohio glasshouses as a function of total space and time of year.

Month Usage	Oct. 8%	Nov. 14%	Dec. 18%	Jan. 18%	Feb. 13%	Mar. 11%	Apr. 7%	May 2%	June 2%	July 1%	Aug. 1%	Sept. 5%
Total sq.ft. of space*	Cu. Ft. of Natural Gas											
0.25	5.6	9.8	12.6	12.6	9.1	7.7	4.9	1.4	1.4	0.7	0.7	3.5
0.50	11.2	19.6	25.2	25.2	18.2	15.4	9.8	2.8	2.8	1.4	1.4	7.0
0.75	16.8	29.4	37.8	27.3	23.1	14.7	4.2	4.2	2.1	2.1	2.1	10.5
1.00	22.4	39.2	50.4	50.4	36.4	30.8	19.6	5.6	5.6	2.8	2.8	14.0
1.25	28.0	49.0	63.0	63.0	45.5	38.5	24.5	7.0	7.0	3.5	3.5	17.5
1.50	33.6	58.8	75.6	75.6	54.6	46.2	29.4	8.4	8.4	4.2	4.2	21.0
1.75	39.2	68.6	88.2	88.2	63.7	53.9	34.3	9.8	9.8	4.9	4.9	24.5
2.00	44.8	78.4	100.8	100.8	72.8	61.6	39.2	11.2	11.2	5.6	5.6	28.0
2.25	50.4	88.2	113.4	113.4	81.9	69.3	44.1	12.6	12.6	6.3	6.3	31.5
2.50	56.0	98.0	126.0	126.0	91.0	77.0	49.0	14.0	14.0	7.0	7.0	35.0
2.75	61.6	107.8	138.6	138.6	100.1	84.7	53.9	15.4	15.4	7.7	7.7	38.5
3.00	67.2	117.6	151.2	151.2	109.2	92.4	58.8	16.8	16.8	8.4	8.4	42.0

\*Crops grown at 60 to 62°F and total space includes bench space plus aisle space per plant. Ex. A plant receiving 1 sq.ft. of bench space also received 0.5 sq.ft. of aisle space for a total of 1.5 sq.ft. if benches occupy only 2/3 of glass area.

Table 2: Oil usage required by floral crops grown in northeast Ohio glasshouses as a function of total space and time of year.

Month Usage	Oct. 8%	Nov. 14%	Dec. 18%	Jan. 18%	Feb. 13%	Mar. 11%	Apr. 7%	May 2%	June 2%	July 1%	Aug. 1%	Sept. 5%
Total sq.ft. of space*	Gallons of No. 2 Oil											
0.25	0.04	0.07	0.09	0.09	0.07	0.06	0.04	0.01	0.01	0.01	0.01	0.03
0.50	0.08	0.14	0.18	0.18	0.13	0.11	0.07	0.02	0.02	0.01	0.01	0.05
0.75	0.12	0.21	0.27	0.27	0.20	0.17	0.11	0.03	0.03	0.02	0.02	0.08
1.00	0.16	0.28	0.36	0.36	0.26	0.22	0.14	0.04	0.04	0.02	0.02	0.10
1.25	0.20	0.35	0.45	0.45	0.33	0.28	0.18	0.05	0.05	0.03	0.03	0.13
1.50	0.24	0.42	0.54	0.54	0.39	0.33	0.21	0.06	0.06	0.03	0.03	0.15
1.75	0.28	0.49	0.63	0.63	0.46	0.39	0.25	0.07	0.07	0.04	0.04	0.18
2.00	0.32	0.56	0.72	0.72	0.52	0.44	0.28	0.08	0.08	0.04	0.04	0.20
2.25	0.36	0.63	0.81	0.81	0.59	0.50	0.32	0.09	0.09	0.05	0.05	0.23
2.50	0.40	0.70	0.90	0.90	0.65	0.55	0.10	0.10	0.10	0.05	0.05	0.25
2.75	0.44	0.77	0.99	0.99	0.72	0.61	0.39	0.11	0.11	0.06	0.06	0.28
3.00	0.48	0.84	1.08	1.08	0.78	0.66	0.42	0.12	0.12	0.06	0.06	0.30

\*Crops grown at 60 to 62°F and total space includes bench space plus aisle space per plant. Ex. A plant receiving 1 sq.ft. of bench space also receives 0.5 sq.ft. of aisle space for a total of 1.5 sq.ft. if benches occupy only 2/3 of glass area.