IN COOPERATION WITH COLORADO STATE UNIVERSITY
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CARNATION CROP FORECASTING

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While carnation crop estimation has been largely neglected, most wholesalers and growers would probably agree that this is a most important phase of flower growing and marketing. Kohl outlined a detailed method of crop estimation and established 8 recognizable stages in the growth of a carnation flower from fresh (blind) cuts to calyx opening before color shows. Besides knowing these stages the estimator has to know how to sample, which is not complicated, and how much time is required from blind cuts to flowering at various times of the year. We know this latter from work published by Koon in CFGA Bulletin 108. This method of Kohl's is outlined in Carnation Craft No. 48, and is summarized in "Carnation Production" by Holley and Baker.

While Kohl's method is much more detailed, it should be combined with the method outlined here for higher accuracy especially for short periods of production. A gross method of forecasting and regulating planting schedules is here presented. The figures for Years 1 and 2 in Table 1 were obtained from one typical bench of Sim varieties at Colorado State University. Figures for the 3rd and 4th years are estimates based on yield figures from Gordon Koon of the Frank Kirschner Greenhouses in Denver, Colo. Production was timed by the method outlined earlier by Koon (Bull. 108).

HOW TO USE THE PRODUCTION TABLE

Colorado growers are now planting most of their carnations in June. The table and Figure 1 were prepared to show what can be expected from planting:

1. Every year,
2. Half the area every year,
3. One third the area every year, or
4. One fourth the area every year.

Since few growers would plant exactly on any of these schedules, some calculations would be required to fit these estimated yields to a particular planting schedule. Earlier than June 20 planting would influence Year 1, especially the months out of production and the times of peak production. This earlier planting would have some influence also on distribution of yield the second year, primarily in altering the time of peak summer production. Distribution of yield the 3rd and 4th years is affected primarily by light and method of cutting. The number of flowers may be reduced significantly by disease losses.

Table 1. Estimated yield per square foot of bench area by months from late June planting for 4 years.

Month	Year 1	Year 2	1+2 2	Year 3	1+2+3 3	Year 4	1+2+3+4 4
July	0	5.4	2.7	7.0	4.1	7.2	4.9
August	0	7.8	3.9	4.6	4.1	5.0	4.3
September	0	4.5	2.2	4.6	3.0	4.2	3.3
October	.9	6.2	3.5	5.8	4.3	4.6	4.4
November	2.3	3.6	2.9	4.0	3.3	3.6	3.4
December	3.5	4.1	3.8	3.6	3.7	3.3	3.6
January	2.5	3.9	3.2	3.0	3.1	3.2	3.1
February	2.6	4.7	3.6	3.6	3.6	3.4	3.6
March	3.7	3.3	3.5	3.8	3.6	3.5	3.6
April	6.6	3.2	4.9	4.2	4.7	4.0	4.5
May	5.3	7.2	6.2	6.0	6.2	5.8	6.1
June	4.4	7.8	6.1	6.6	6.3	6.0	6.2
Total	31.8	61.7	46.5	56.8	50.0	53.8	51.0

The yield figures in Table 1 represent average yields per square foot per month. Multiply the square feet in a planting by the monthly yields under Year 1 to get an estimate of the monthly production from this planting. If substantial plantings are made at other times of the year, separate Year 1 estimates of monthly yield will be needed for these.

Multiply the area of all plants in their second year by the yields under Year 2 for an estimate of monthly yield from two year plants. If equal areas are planted in first and second year plants, the total planted area can be multiplied by the Average column following Year 2. This is highly improbable but the three average columns in Table 1 were used for points to plot Figure 1. Generally speaking, an individual greenhouse would need to estimate the monthly yields for the first year from each major planting. Plants in Years 2, 3 and 4 could be estimated from the figures in Table 1.

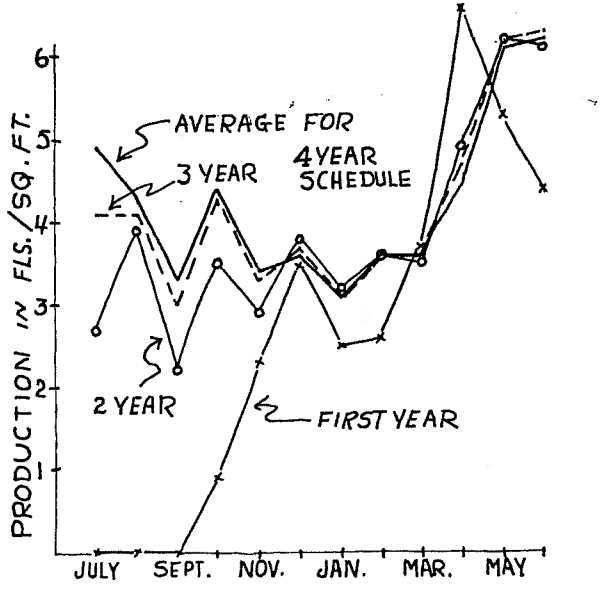

Fig. 1. Estimate and distribution of yield/sq. ft. from yearly planting in late June, planting 1/2, 1/3 or 1/4 of an area yearly.

Figure 1 shows the yield distribution that can be expected if all plants were planted in late June (First Year Curve), half of an area is planted yearly (2 Year Curve), one-third of an area planted yearly, etc. The 2, 3 and 4 year curves are means of all plantings, i.e. the 3-year curve is plotted from mean monthly yields of 1, 2, and 3 year plants.

The figure illustrates the major differences and similarities in different cropping practices. The grower who plants all of an area yearly can hit good markets and be out of production for poor ones. If he plants half an area each year, he produces just as much for the good markets from late fall to June, but an average (for his entire area) of about 1 flower/sq. ft. per week during the summer and early fall months. In planting on 3 or 4 year schedules he continues to produce for the good markets but each year his average summer yield is higher and his winter yield may be a bit lower.