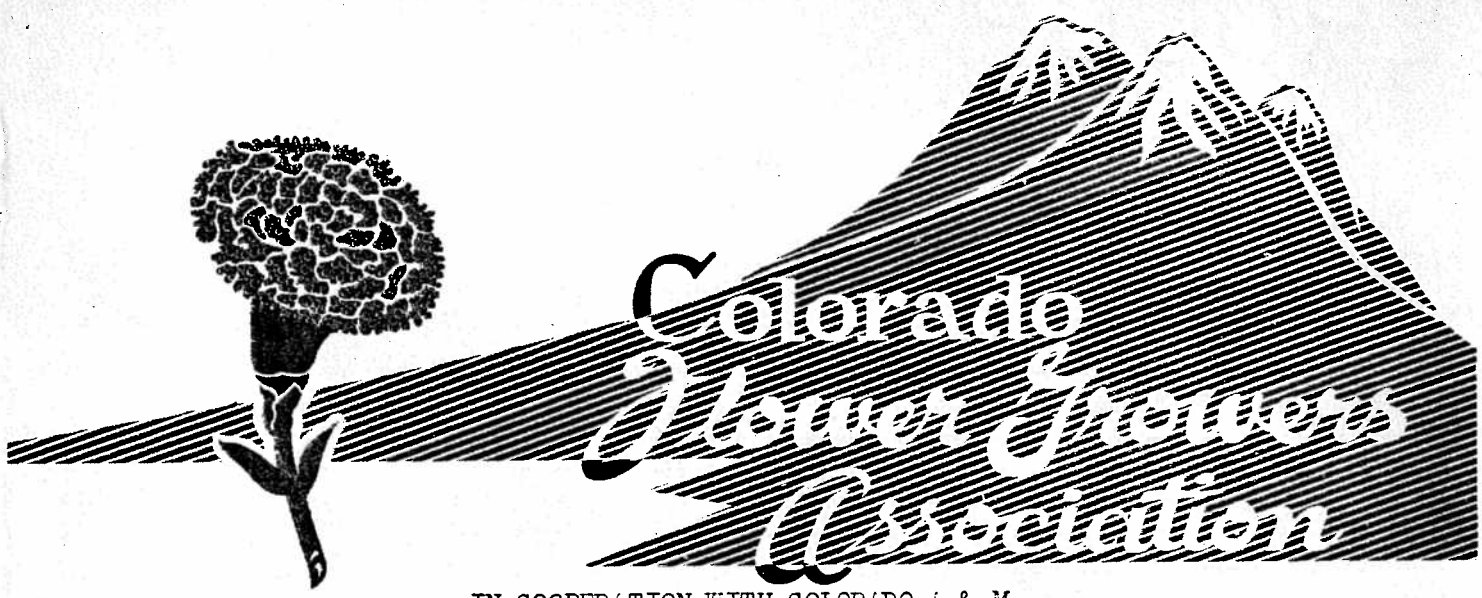

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A Comparison of Two Cutting Methods on Better Times and Pink Delight Roses

by

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Several recent publications together with observations made by rose growers over many years experience have pretty well substantiated the conventional method of cutting roses to be the best. This method involves making each succeeding cut just above the second 5-leaf eye. Individual growers use some variations but the practice is pretty generally established throughout the rose growing industry.

Cutting to the "knuckle" or just above the origin of the last growth is sometimes practiced, especially during late winter and spring and on the larger canes. This type of cut usually forces at least two eyes to break, although foliage is reduced more than by cutting to the second 5-leaf eye.

To get a direct comparison of knuckle cutting and cutting to the second 5-leaf eye, and to determine the minimum cane size which can be cut to the knuckle profitably, experiments were carried on periodically from August 1950 to February 1952. Forty to 50 cuts by each method were made on the Better Times and on the Pink Delight varieties at nine different dates as follows: August 1, September 19, and November 8, 1950; January 9, March 10, May 25, October 13, and December 15, 1951; and February 15, 1952. This involved approximately 800 cuts of each type, half of which were on each variety.

Canes of all sizes were tagged at random a few days before the rose was ready to cut. When ready to cut the roses were cut to the knuckle or to the second 5-leaf eye according to the color tag which had been used. Shortly before the breaks resulting from these cuts were mature, measurements were made on the previous cane size and the number and diameter of the breaks resulting from the cut. In all cases the caliper of canes was measured by a vernier to the nearest thirty-second of an inch.

The total number of canes cut, the number of canes flowering and the percentage of flowering in each cane size category are shown in Tables 1 and 2. The average number of flowers and the average size of breaks produced from each cut are included. Also a comparison of resulting blind growth is presented.

Since the average size of canes cut to the second 5-leaf eye was slightly smaller than that of canes cut to the knuckle, the most accurate comparisons can be made between cuts on canes of the same size. Several

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Table 1.--The total of all cuts made on, Better Times in each cane size category.

	Size Cane Cut*	No. Canes Cut	No. Canes Flowering	Percent Flowering	No. Flowers	Average No. Flowers per Cane Cut	Average Size of Breaks Produced	Blind Shoots
Second 5-Leaf Eye Cuts	less than 6.0	40	16	40.0%	16	0.40	4.98	8
	6.0-7.0	158	114	72.2%	115	0.73	5.72	5
	7.0-8.0	140	117	83.6%	123	0.88	6.29	4
	8.0-9.0	60	52	86.7%	52	0.87	6.97	2
	9.0 & over	10	9	90.0%	9	0.90	7.61	0
	TOTAL	408	308	75.4%	315	0.77	6.17	19
Knuckle Cuts	less than 6.0	9	5	55.6%	5	0.56	5.10	3
	6.0-7.0	74	45	60.8%	51	0.69	5.53	58
	7.0-8.0	136	110	80.9%	141	1.04	5.73	80
	8.0-9.0	108	102	94.4%	157	1.45	5.83	55
	9.0 & over	57	55	96.5%	91	1.60	6.19	22
	TOTAL	384	317	82.5%	445	1.16	5.83	218

Average size of cane cut to 2nd 5-leaf eye = 6.82
Average size of cane cut to knuckle = 7.60

Table 2.--The total of all cuts made on Pink Delight in each cane size category.

	Size Cane Cut*	No. Canes Cut	No. Canes Flowering	Percent Flowering	No. Flowers	Average No. Flowers per Cane Cut	Average Size of Breaks Produced	Blind Shoots
Second 5-Leaf Eye Cuts	less than 6.0	19	6	31.6%	6	0.32	4.95	1
	6.0-7.0	103	50	48.5%	51	0.50	5.78	5
	7.0-8.0	144	100	69.4%	110	0.76	6.30	2
	8.0-9.0	100	90	90.0%	98	0.98	6.99	2
	9.0 & over	66	59	89.4%	62	0.94	7.76	0
	TOTAL	432	305	70.6%	327	0.76	6.68	10
Knuckle Cuts	less than 6.0	8	1	12.5%	1	0.13	5.00	3
	6.0-7.0	42	24	57.1%	28	0.67	5.72	13
	7.0-8.0	102	72	70.6%	91	0.89	5.83	41
	8.0-9.0	131	107	81.7%	155	1.18	6.19	58
	9.0 & over	119	111	93.3%	179	1.50	6.79	40
	TOTAL	402	315	78.4%	454	1.13	6.32	155

Average size of cane cut to 2nd 5-leaf eye = 7.49
Average size of cane cut to Knuckle = 8.19

* Measured in thirty-seconds of an inch.

1. The larger the cane cut, the better the chance for that cane to return another flower.
2. Knuckle cutting does not appear to reduce the chances of a return flower.
3. Knuckle cutting gave a highly significant increase in production especially from the larger canes, but it decreased the diameter of the resulting flowers and it increased blind wood.
4. On the average, canes become smaller with each succeeding cut.
5. While only about three-fourths of the canes cut by either method returned flowers, knuckle cuts produced more total flowers because the average number of flowers per cane cut was much greater.
6. The varieties responded similarly to knuckle cutting.
7. The optimum size of cane which should be cut to the knuckle is about one-fourth inch in diameter or larger.

Effect of method of cutting on quality

Table 3 gives a comparison of the effects of cane size, method of cutting and time of year on the stem diameter of the resulting flower. Stem diameter has been correlated closely with stem length and quality in Better Times. The same relationship holds true for Pink Delight. Both varieties are lumped together in the table.

Table 3.--Effect of cane size, cutting method, and time of year on stem diameter of resulting flower.

	Size of* cane cut	August Sept.	Oct.,Nov. Dec.	Jan. Feb.	Mar.,Apr. May	Average
Second 5-leaf eye cut	6.0	4.39	5.17	5.75	5.26	5.14
	6.0 - 7.0	5.53	5.72	5.95	6.00	5.80
	7.0 - 8.0	5.86	6.38	6.71	6.20	6.28
	8.0 - 9.0	6.68	7.06	7.36	6.87	6.99
	9.0	6.96	7.38	8.02	8.11	7.61
	Average	5.88	6.34	6.76	6.49	6.37
Knuckle cut	6.0	4.68	4.75	5.34	5.78	5.14
	6.0 - 7.0	5.09	5.63	5.76	5.68	5.54
	7.0 - 8.0	5.54	5.92	5.90	5.65	5.75
	8.0 - 9.0	5.54	6.00	6.44	6.11	6.02
	9.0	5.80	6.41	7.06	6.64	6.47
	Average	5.33	5.74	6.10	5.97	5.78
Average		5.60	6.04	6.43	6.23	6.07

*Measured in 32nds of an inch

The largest stem diameter (therefore the greater length) resulted from cuts made during the January-February period. The smallest stem diameter came from cuts made in August and September. Cutting to the second 5-leaf eye consistently produced larger return flowers than cutting to the knuckle. All of these differences were highly significant statistically.

Season of the year

The effect of time of the year on resulting cane size can be noted in Table 3. In Table 4 is presented the effect of method of cutting and season of the year on production per cut. Again the production is included as average number of flowers returning from each cut on each cane size.

Table 4.--The effects of cane size, cutting method and time of the year on production of roses

	Cane Size*	Average number of flowers per cane cut									
		BETTER TIMES					PINK DELIGHT				
		Aug. Sept.	Oct. Dec.	Jan. Feb.	Mar. May	Total	Aug. Sept.	Oct. Dec.	Jan. Feb.	Mar. May	Total
Second 5-leaf eye cut	less than 6.0	0.40	0.44	0.33	0.00	1.17	0.40	0.38	0.17	0.21	1.16
	6.0-7.0	0.58	0.81	0.72	0.71	2.82	0.81	0.39	0.27	0.62	2.09
	7.0-8.0	1.04	0.88	0.92	0.71	3.55	1.00	0.78	0.64	0.55	2.97
	8.0-9.0	0.78	0.94	1.00	0.82	3.54	1.10	1.06	0.80	0.95	3.91
	9.0 & up	1.00	0.67	0.96	1.00	3.63	1.17	1.00	1.10	0.81	4.08
	Total	3.80	3.74	3.93	3.24	14.17	4.48	3.61	2.98	3.14	14.21
Knuckle cut	less than 6.0	0.51	0.50	0.50	1.00	2.51	0.02	0.20	0.00	0.29	0.51
	6.0-7.0	0.67	0.49	0.80	1.00	2.96	0.60	0.63	0.71	0.75	2.69
	7.0-8.0	0.75	1.05	1.08	1.25	4.13	0.79	0.82	0.78	1.15	3.54
	8.0-9.0	1.53	1.12	1.29	1.86	5.80	1.12	1.02	1.30	1.36	4.80
	9.0 & up	1.43	1.29	1.82	1.93	6.47	1.27	1.60	1.46	1.66	5.99
	Total	4.89	4.45	5.49	7.04	21.87	3.80	4.27	4.25	5.21	17.53

*Measured in thirty-seconds of an inch.

Better Times

With conventional cutting (2nd 5-leaf eye), Better Times gave the highest average return of flowers per cane cut during the January-February period although the difference was slight over other periods, March to May yielding the poorest results. Knuckle cutting yielded the best percentage return from the March to May cuts and poorest from the October to December period. Taking an average of all cane sizes and all seasons, knuckle cutting produced almost 50 percent more flowers than the conventional method.

Pink Delight

Cutting to the second 5-leaf eye on Pink Delight gave the highest average return from the August-September cutting period and poorest during January and February. Knuckle cuts returned best during the spring and poorest from the late summer cutting period. Averaging all sizes of canes and all periods, knuckle cutting yielded approximately 23 percent more flowers than cutting to the second 5-leaf eye.

The general opinion that knuckle cuts break better and produce more flowers during the spring is correct. This fact is illustrated in Fig. 1. The production per cane cut decreased from fall to spring when the flowers were cut to the second 5-leaf eye, whereas knuckle cutting gave a highly significant increase especially during winter and spring.

The trend of conventional cutting to return fewer flowers per cane cut with each succeeding period of the year is contrary to general opinion. This trend was especially pronounced on Pink Delight (Table 4). A possible explanation could come from the increased competition, especially during late winter and spring of new canes arising below the cuts. This competition often prevents the canes breaking at the point the cut is made. This does not mean that production per plant decreases during the late winter and spring.

Summary

Knuckle cutting increased production per cane cut on both Better Times and Pink Delight varieties of rose. The greatest increase came from late winter and spring cutting on canes one-fourth inch in diameter and larger. The optimum size of cane for knuckle cutting on Pink Delight was slightly larger than that optimum for Better Times.

The best quality flowers from both methods of cutting returned from cuts on the larger canes. Knuckle cutting reduces stem diameter, and probably stem length, when compared to cutting to the second 5-leaf eye. Stem size was greatest on both types of cuts during the late winter and spring months.

No data could be obtained on the additional time required for a knuckle cut to break, but observations made during this work indicate an average of about seven days or less.

While some knuckle cutting can be done on larger canes at any time of the year without reducing production, the most advantageous time is from January on through the spring. Nearly double the production can be obtained on selected canes by knuckle cuts from March to May in comparison to the normal 5-leaf eye cut.

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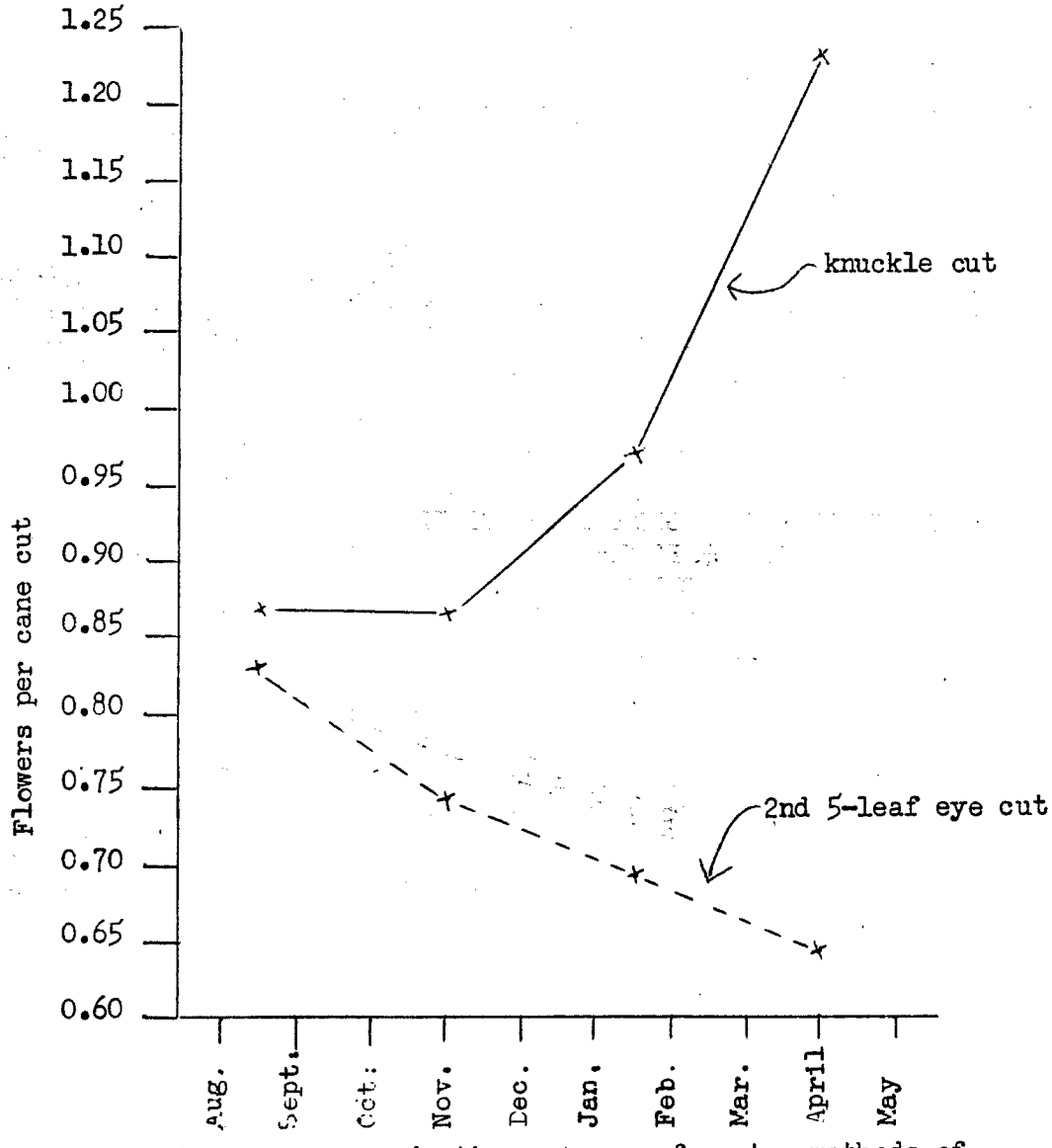

Fig. 1--The average production per cane from two methods of cutting at different periods of the year.

Your Editor,

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