

## What Happened to All the HCC Awards?

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During one of the regional seminars, most of the judges reacted with disdain to the notion that commercial growers might prefer to have their plant passed than to have it awarded an HCC. On other occasions judges have commented negatively about the many HCC awards given in some regions. Some AOS judges believe that AOS should drop the HCC award because too many of these awards are given.

As an amateur grower I became interested and concerned about the pattern of awards. To satisfy my curiosity, I tabulated the number of HCC, AM and FCC awards listed in the *Awards Quarterly* from 1984 to 1987. Subject to the errors of my hand tabulation, the totals and percentages of all quality awards by category are listed in Table 1.

Looking at the numbers in Table 1 most people would think, “That looks pretty good to me; there were a lot more HCCs than AMs and a few FCCs. Even though the HCC includes only five point totals and the AM covers a range of 10 point scores, the number of HCC awards is greater.” But my 20-plus years of work in research and evaluation methods applied to a variety of fields wouldn’t let me stop there. I asked myself if this is what we should expect or should there have been more HCC awards. After a bit of consideration I came to the conclusion that there should have been many more HCC awards — at least 1½–2 times as many as were awarded. Let me walk you through my thinking.

My tally (see Table 2) included the number of plants given each point score. The pattern is much different than I believe is proper. The number of plants given each point total should gradually decline as shown in Figure 1. Table 2 demonstrates that the appropriate pattern was not present. If the number of AM awards is proper (a reasonable assumption), then there were far too few plants with point totals in the HCC range, especially point totals of 75, 76 and 79.

I also noticed that some regions gave about the same number of HCC awards as AM awards. I believe that such regions were in serious error. Other regions gave two or more times as many HCC awards as AM awards. I believe that these regions awarded plants in proper proportions. I won’t name the regions. I’ll let you check for yourself. Some regional coordinators may want to review their records to see how their regions performed.

**Table 1:** Number and percent of quality awards in each category reported in the *Awards Quarterly* for the years 1984, 1985, 1986, 1987

	Vol. 15 1984	Vol. 16 1985	Vol. 17 1986	Vol. 18 1987
H	580	509	519	541
C	60.4%	57.4%	55.5%	59.1%
C				

A M	369 38.4%	361 40.7%	403 43.1%	367 40.1%
F C C	12 1.2%	16 1.8%	13 1.4%	8 0.9%
Total	961 100%	886 100%	935 100%	916 100%

**Table 2:** Number of quality awards given each point value as reported in the *Awards Quarterly* for the years 1984 to 1987.

	Pts.	Vol. 15 1984 Num.	Vol. 16 1985 Num.	Vol. 17 1986 Num.	Vol. 18 1987 Num.	4 year Total
HCC	75	102	77	67	100	346
	76	126	110	123	117	476
	77	143	111	114	122	490
	78	118	115	136	112	481
		79	96	79	90	356
AM	80	118	133	133	120	504
	81	99	87	106	82	374
	82	66	59	56	74	255
	83	41	36	44	43	164
	84	23	23	27	16	89
	85	11	4	25	16	56
	86	3	7	6	8	24
	87	7	7	4	4	22
	88	1	4	1	4	10
	89	0	1	1	0	2
FCC	90	5	5	6	3	19
	91	3	8	7	1	19
	92	3	1	0	2	6
	93	1	2	0	0	3
	94	0	0	0	1	1
	95	0	0	0	0	0
	>95	0	0	0	1	1

**Table 3:** Expected number and percent of quality awards in each category per 10,000 bloomed plants by varying standard units.

	Std. unit of 10	Std. unit of 11	Std. unit of 12	Std. unit of 13	Std. unit of 14	Std. unit of 15
HCC	48.50 78.2%	84.00 72.0%	126.00 67.0%	160.00 58.0%	205.00 56.0%	247.00 52.0%
AM	13.27 21.4%	31.00 27.0%	57.70 30.7%	94.00 38.0%	141.00 38.0%	190.00 40.0%
FCC	0.33	1.0	4.30	10.00	21.00	38.00

	0.5%	0.9%	2.3%	4.0%	6.0%	8.0%
Total	62.00	116.00	188.00	274.00	367.00	475.00
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The numbers in Table 2 also suggest that the number of FCC awards was higher than what should be expected. Notice the big jump from the number of plants given 88 and 89 points to the number given 90 and 91 points. That probably isn't a major problem because some FCC awards seem to be given for reasons other than true flower quality. New species or striking new colors and similar unique events seem to bring out an emotional reaction that feels like an FCC. That may be appropriate. The FCC is a special award of its own.

Flower quality is a complex trait that is influenced by both genetics and culture. There are many such complex traits in nature. Agricultural and human behavioral scientists have described several complex traits that are influenced by many factors and are difficult to predict in advance. Such traits tend to occur in what is called a normal or bell-shaped distribution. Most of us are familiar with human I.Q. scores that describe a poorly understood human trait that is influenced by both genetics and social environment. It is believed to be a trait with a normal bell-shaped distribution. Even with selective hybridization in orchids and the constant improvement in the general quality of newly bloomed crosses, there is no reason to expect that orchid flower quality would depart from a near-normal distribution. We know too little about the genetics of flower quality to have predictive quality control of specific clones or even crosses. Some crosses of top-quality parents produce no clones of award quality, whereas some crosses of HCC parents or even unawarded parents produce many awards. There is no reason to believe that the plants presented for judging or those exhibited at orchid shows represent a uniquely greater proportion of the existing AM-quality plants than the proportion of existing HCC-quality plants.

When we have a bell-shaped distribution there is an average (mean) and a standard unit (standard deviation). Any score can be compared with the mean and standard unit to tell us how much better than average or how much below average the score happens to be. With orchid flower quality, we have no way of knowing what the average and standard unit might be. To know this we would first have to score a very large number of plants, including as many below-average as better-than-average plants. Flowers below average would score less than 50 points and only a small percentage of truly superior plants would score 75 or higher. By looking at different possible standard units we can estimate how many plants per 10,000 bloomed plants would be expected to score each point total. With human I.Q. the standard unit is usually 15. Thus, a person with an I.Q. of 130 has scored 30 points or 2 standard units above the mean of 100. Approximately 2.28% of the human population has I.Q. scores of 130 or above.

Figure 1 (not featured in this document) and Table 3 illustrate how many plants would be expected to be given HCC, AM, and FCC awards per 10,000 bloomed plants for different standard units. If the standard unit is 15, 475 per 10,000 plants (4.75%) would be award

quality. That would probably be too many, and we can reject 15 as a standard unit. For similar reasons we can reject standard units of 14 and 13. With a standard unit of 12, 188 per 10,000 of the bloomed plants (1.88%) would be expected to be award quality. That may be about right or may result in too many awards. A standard unit of 12 might result in more FCC awards than what is desirable (Table 3).

As also seen in Table 3, with a standard unit of 10, a total of 62 in 10,000 or less than 1% of all bloomed plants would be of award quality. It would seem that a standard of 10 or 11 may be what is proper.

In both of the more reasonable cases, the number of expected HCC awards is more than twice the number of expected AM awards. In fact, with a standard unit of 10, which seems most reasonable in terms of the total number of plants awarded per 10,000, the number of expected HCC awards is more than three times the number of expected AM awards.

Because culture is a very important factor in flower quality, the typical amateur grower has a better chance of blooming an HCC-quality plant than an AM-quality plant. If we shy away from giving HCC awards, the amateur grower will be discouraged from submitting plants for judging. I don't think that is what the AOS judging community wants to happen. Many of the building blocks for improved flowers have been HCC-awarded plants. We need to identify and continue to recognize such plants.

It appears that some judges may have knowingly or unknowingly adopted the philosophy, "If it isn't an AM, don't award it." Perhaps some judges need to rethink their concept of HCC awards. Sure, if changes are made in some regions, there will be many more awards. With the increase in the number of growers and large increase in the number of crosses and number of bloomed plants, it is my opinion that there should be more awards. If the awards community becomes too overburdened, it is easy to adjust the procedure for reporting awards. Reporting is an administrative procedure that is relatively easily modified.