

MICHIGAN DEPARTMENT OF CONSERVATION  
Game Division

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Effects of Red and Green Ink on Response Rate in Mail Surveys  
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The Game Division of the Michigan Department of Conservation has used a mail survey of a systematically determined sample of hunting license purchasers to estimate kill of various game birds and animals yearly since 1952. The basic questionnaire form has been a double-return postage-paid post card with black print on ordinary buff-colored stock.

In order to maintain survey accuracy and reduce effects of non-response bias, reminder questionnaires are mailed to those individuals who have not responded after a ten to fourteen day period. Repeated reminders are sent until responses reach about 95 per cent of the total delivered cards. (Cards not returned for incomplete address, moved - left no forwarding address, deceased, etc., are assumed to have been delivered.) For a number of years colored inks have been used on reminder questionnaires in an attempt to stimulate higher response rates. The normal sequence of mailings in recent years has been the original questionnaire printed with black ink, the first reminder printed in green ink, and the second reminder printed in red ink. This report summarizes our findings of the effects on response rates of the use of green and red ink on reminder post cards.

The survey of deer hunters was used to compare response rates of different colored inks because this survey has the largest volume of reminder cards. About half of the non-respondents received green- and half received black-linked cards on the first reminder. On the second reminder, half received red- and half received black-linked cards. The choice of ink color on the card sent to a given individual was determined by whether a number taken from a random numbers table was odd or even.

Number of cards mailed, response, and hunter success for each color are summarized in Tables 1 and 2 below.

TABLE 1. SUMMARY OF RESULTS FROM FIRST REMINDER MAILING

	No. of cards mailed	Discounted from survey	Actual participation	Response	Per cent response	No. of successful hunters	Per cent successful
Green ink	2,318	103	2,215	1,191	53.8%	135	11.3%
Black ink	2,228	88	2,140	1,198	56.0%	121	10.1%

TABLE 2. SUMMARY OF RESULTS FROM SECOND REMINDER MAILING

	No. of cards mailed	Discounted from survey	Actual participation	Response	Per cent response	No. of successful hunters	Per cent successful
Red ink	1,019	16	1,003	393	39.2%	34	8.7%
Black ink	973	13	960	336	35.0%	28	8.3%

A number of individuals were discounted from the experiment (see tables) because their survey cards were returned by the post office as non-deliverable.

The green ink produced a lower response than did the black, but the difference was only 2.2 per cent. Individuals receiving red-inked cards had a 4.2 per cent higher response than those receiving cards with black ink. A chi-square test (Simpson et al., 1960) showed this difference was not statistically significant, but important ( $.05 < p < .10$ ). No attempt was made on the second reminder mailing to distinguish the individuals who had already received two black-inked cards from those who had received one black- and one green-inked card.

As a result of this test we will discontinue further use of green ink on reminder cards, but the apparent additional response as a result of using red ink warrants its continued use.

#### LITERATURE CITED

Simpson, G. G., Roe, A., and Lawontin, R. C. (1960) Quantitative zoology. Harcourt, Brace. 440 pp.