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1967 LABOR REQUIREMENTS AND COSTS OF LABOR ON SAN DIEGO COUNTY POULTRY FARMS

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This is a report on the present labor situation as determined from individual consultations with 40 poultry egg producers and from the San Diego County Poultry Egg Cost Study cooperators representing about 30% of the county's total egg production. Most of the larger ranches were included since they are the ranches hiring a major part of the labor.

The most recent study conducted was in 1964, at which time a majority of the egg producers were processing eggs on the ranch. Now, the job of processing eggs is being accomplished almost entirely by the dealer or processor so that this study does not include costs of grading eggs for size, or cleaning or cartoning eggs for sale.

This report was developed on the basis of evaluating costs of labor for egg collecting and preparing eggs for pick up at the ranch; feeding the poultry flock; producing pullet replacements; manure handling including removal from under the cages and from the ranch; and all care and maintenance of housing and equipment. Managerial functions, such as record analysis, cost accounting, ordering supplies, and planning operations were not included as a labor cost of production.

The costs of labor on these ranches averaged 2 cents per dozen eggs or approximately 40 cents per layer per year. These costs may be considered representative of the more efficient operations in the county. A breakdown on costs incurred on these efficient ranches is included in this report.

The importance of the layout or arrangement of buildings, and type of equipment and its effect on labor requirements, were noted as being especially important in affecting labor costs among the cooperators in this survey.

A separation in labor requirements according to operating procedure follows:

- I. Brooding and growing replacement pullets including vaccination, debeaking, moving, general care, cleanup, and setting up for each brood.
- II. Work involved with the laying flock including feeding; egg gathering and preparation of eggs for pick up from the ranch; and taking out of dead birds, reporting unusual problems to management, and maintaining aisles for passage of egg and feeding equipment.
- III. General care and maintenance including manure removal, culling, disease and insect control, and all other projects not included in the first two categories.

(I.) Brooding and growing replacement pullets costs per average layer were 10¢. This would equal 12¢ labor cost per pullet raised considering an average replacement rate of 80%. The program of brooding and growing included all labor for the complete program from getting set up in brooder, vaccinations, debeaking, and all care to the final move into the laying house. Generally, programs involved a separate brooder operation, a wire grow-cage second stage, and a final move from 16 weeks to 5 months of age to the lay house. On many ranch units in San Diego County, both brooding and growing units were in operation at the same time. Due to problems of disease control and for efficient operation, both the brood and grow were "all in and all out" with only one age group in either phase. Where five broods are grown each year, time schedules are tighter and birds have to be moved to lay houses at a much earlier age resulting in laying house equipment being occupied by non-producing stock. Where five or six broods are being raised each year, one section of the laying house units becomes in effect an additional grow house unit.

Most of the cooperators operated on three-, four-, or five-times-a-year replacement programs. This survey indicated labor costs including all vaccination, debeaking, moving, setting up, clean out, and general feeding and care during the growing period was about 25% of the total job on the ranch, or about 12¢ per pullet replaced or 10¢ per average layer on the ranch.

Figuring a time equivalent of one full-time input of a man for a year at 2400 hours at \$1.50 per hour plus Social Security, Workmen's Compensation Insurance, plus cost of vacation and sick leave, and an additional 2% for cost of administering and maintaining payroll comes to a total additional cost of 14.13%, or a total cost of \$1.71 per hour. One dollar and 71 cents per hour times 2400 hours would be \$4104 cost, so that the equivalent of 12¢ per pullet would mean the production of 34,200 replacement pullets per full-time man per year on the job at the indicated wage rate. This indicates that it is only the large commercial ranches that can specialize in hiring full-time help to take care of brooding and growing operations exclusively. Work loads of moving, debeaking, and vaccination make for uneven workload distribution. Generally, the larger flocks had labor replacement costs less than 10¢ per layer, and flocks less than 20,000 had costs exceeding 10¢ per layer. In some of the flocks of less than 20,000, labor costs of brooding and growing have been so expensive that purchase of started pullets has become their alternative program of replacement. Started pullets are also purchased by larger operators where unusual mortality losses occur in replacement program.

The cost per layer for replacement pullets would be determined by the percent of laying flock actually replaced and the cost of labor per pullet added to the flock. In this survey costs were 12¢ per pullet replaced. The number brooded, and efficiency of brooding and growing operations, would vary from ranch to ranch and from one brood to the next.

(11.) Egg gathering, preparing eggs for pick up by dealer, and feeding of the flock averaged approximately 50% of total labor cost, or about 1¢ per dozen or 20¢ per bird per year.

The egg gathering labor and feeding labor cost has not materially changed during the last 10 years because rate of pick up of eggs and feeding practices have not significantly changed. It simply takes so much time to pick up eggs from cages. Rate of gathering remains comparatively the same varying from 6 to 10 cages per hour. One difference in total eggs gathered is determined by distance and terrain from lay house to central egg pick up. Collecting and storing eggs in racks at the end of the house is probably the latest in labor-saving programs, but necessarily involves the cooperation of the egg dealer to make the additional stops to collect these eggs from the ranch.

Another variable is the type and condition of the aisles. The condition of the baskets from which eggs are gathered must be considered. Concrete floors where manure is removed frequently is the optimum condition. The opposite condition is where dirt floors, with mice and gopher holes, wet spots, and chunks of manure falling from cones of manure cleaned out only once or twice a year, slow down speed of labor gathering eggs. Condition of aisles may also affect type of egg-gathering cart required. Difficult passage aisles may require electric carts as compared to concrete floors where well-balanced push carts may be handled with no particular problem to the egg gatherer.

Condition of aisles also affects feeding time. Size and type of feeder is important. Obviously, small feeders requiring twice-a-day feeding are particularly wasteful and inefficient. Length of row of cages and the ease of turn around is a

cost factor in time used for feeding. Auger feeders may improve labor efficiency where large numbers of birds are fed from an electric cart. Each 10,000 birds require 2500 pounds of feed each day, and physical ability of man scooping feed may be a problem. Labor time per 10,000 layers usually did not exceed one hour per day for feeding. Under ideal conditions, 20,000 or more birds were fed per man hour. Feeding once a day with a second trip through for leveling feed seemed to be the most efficient practice. Saving of labor time by the use of mechanical feeders may be developed in flocks over 50,000 birds. A few flocks under 50,000 installed mechanical feeders because the owner did not want to lift feed each day and did not want to turn the job of feeding over to his hired help. The value of mechanical feeders becomes a matter of individual adaptation and must be considered from a capital investment-versus-labor situation. The problem of obtaining labor capable of doing an adequate feeding job was considered by most poultrymen as the most difficult position to fill. As costs of labor increase, an evaluation of the use of mechanical feeders will become more important. The cost of maintaining mechanical feeding equipment should not be a problem once the equipment has been properly installed. Obtaining help to maintain equipment should not be any more difficult than obtaining help to properly feed with electric carts.

This survey indicated that 20¢ per bird per year, or 1¢ per dozen produced, generally covered the cost of egg gathering and feeding. Various programs for paying egg gatherers were used, such as so much per case, etc. This ran as low as  $\frac{1}{2}$ ¢ per dozen to 1¢ per dozen depending upon ease of gathering conditions; other assigned duties, such as dead bird removal, checking water and presence of insects; and location of where eggs were assembled. Projecting this cost of 20 cents per bird to the \$1.50 per hour wage rate at a cost of \$1.71 per hour, or \$4104 cost for 2400 hours of work per year, means that feeding and egg gathering of 21,341 birds must be handled by the equivalent of one full-time man.

(III.) The third grouping of labor costs is the balance of all labor required other than pullet replacement, and egg gathering and feeding. It includes manure removal, culling, repair and maintenance of water systems, cooling systems, cages and buildings, and mechanical and other equipment. On the basis of this survey 25% of the labor requirement, or 10 cents per bird, would complete the total labor cost average of 2¢ per dozen eggs produced, or 40¢ per layer per year.

In this grouping, manure removal would be the highest and most variable cost item. Each layer produced one to one-and-one-fourth cubic feet of manure each year. For cost allowances, most farms would need to figure 5 to 6¢ per bird per year which would be around \$.90 to \$1.35 per cubic yard for clean out of the house and removal from the ranch. In some instances, removal from the ranch costs may be paid for by the purchaser of manure, reducing the total costs, but cost of manure removal out of the house will still make manure removal the biggest item of miscellaneous labor costs. The use of mechanical equipment is necessary to accomplish this job within this 5 or 6¢ per layer goal.

Basic labor rates for regular employees ranged from \$1.40 to \$1.65 per hour. Extra help rates were somewhat lower, and some responsible permanent-type hired labor rates were slightly higher. Cost to the poultryman for labor is 4.4% more for Social Security, 3.88% for Workmen's Compensation, and if two weeks of vacation and sick leave are paid for during the year, this adds another 3.85%. Secretarial costs of maintaining payroll records and disbursement for labor could add another 2% to costs so that total costs would be an additional 14.13% over the wage rate. At the \$1.50 rate, costs would be an additional 21¢ per hour, or a total of \$1.71 per hour. A 48-hour week with 50

weeks of actual work per year is 2400 hours of labor. This averages only 6.58 hours per day for 365 days. Table A shows ratios of cost for various wage rates. Table B shows the relationship to number of birds to be maintained for various wage rate scales.

In summary, actual labor costs depend upon a large number of factors especially related to size of operation, plant layout, use of mechanical equipment, and the overall planning and management. This survey was concerned particularly with ranches with operations of over 20,000 layers. Most operations of 20,000 or less hired only one man, and time input of the owner filled in to complete the job. It is difficult to evaluate the actual chore labor time of the owner-operator since he does the work which the hired man was unable to accomplish. This survey showed that on the average, one man was employed for each 10,000 layers. On the ranch of 40,000 layers, the equivalent of one man's time was used for brooding and growing, two men on feeding and gathering eggs, and one man for all other jobs including manure removal. It becomes rather obvious that due to differences in peak labor requirements in the three phases of work considered, specialization except for egg gathering is not easily accomplished even on the larger ranches. For this reason many ranches are making use of outside contract services for vaccination, debeaking, and manure removal.

Management including record keeping, analysis, and all other jobs associated with management were evaluated separately. Several ranches gave an estimate of time use for management which averaged about one hour per day per 10,000 layers. One additional hour per day per 10,000 birds was the average estimate for secretarial and bookkeeping assistance.

The information obtained on management time used may be compared to the 1964 study which averaged out 1.4 hours per day per 10,000 layers. At that time, many of the ranches were doing egg processing on the ranch, and the average of the flocks in that study was 24,134 birds per flock.

For comparison purposes, the San Diego County Egg Cost Study may be used. For the first four months of 1967, the flock size averaged 45,261 layers per ranch. Total hired labor costs on a yearly basis were 42.6¢ per bird. Home labor would also add another 2¢ per layer per year based on the 1966 study report average. On the basis of dozens produced, the average labor cost was 2.1¢ per dozen. Further comparison could be made of these figures with the 1966 study which showed 42¢ for all costs of labor per average layer, and 2.1¢ per dozen eggs produced.

TABLE A  
Rate of Pay Compared with Costs of Labor

<u>Pay Rate per Hour</u>	<u>* Cost per Hour</u>	<u>Weekly Rate 48 Hours</u>	<u>* Cost per Week</u>	<u>Monthly Rate 1/12 of Annual</u>	<u>* Cost per Month</u>	<u>Annual Rate 52 Weeks</u>	<u>* Cost per Year</u>
\$1.30	\$1.48	\$ 62.40	\$ 71.04	\$270.40	\$307.84	\$3244.80	\$3694.08
1.40	1.60	67.20	76.80	291.20	332.80	3494.40	3993.60
1.50	1.71	72.00	82.08	312.00	355.68	3744.00	4268.16
1.60	1.83	76.80	87.84	332.80	380.64	3993.60	4567.68
1.70	1.94	81.60	93.12	353.60	403.52	4243.20	4842.24
1.80	2.05	86.40	98.40	374.40	426.40	4492.80	5116.80
1.90	2.17	91.20	104.16	395.20	451.36	4742.40	5416.32
2.00	2.28	96.00	109.44	416.00	474.24	4992.00	5690.88
2.20	2.51	105.60	120.48	457.60	522.08	5491.20	6264.96
2.40	2.74	115.20	131.52	499.20	569.92	5990.40	6839.04
2.60	2.97	124.80	142.56	540.80	617.76	6489.60	7413.12

\* The following costs may apply to wages up to \$6600 per year on poultry farms in California in 1967:

4.40%	Social Security Programs
3.88%	Workmen's Compensation Insurance
3.85%	Two weeks paid time for sickness and/or vacation allowance
2.00%	Payroll administration equals \$20 cost per \$1000 payroll
<u>14.13%</u>	Total cost or \$141.30 per \$1000 of payroll cost

**TABLE B**  
**Number of Bird Units Required to Handle**  
**for 10, 12, 20, and 40¢ per Bird Labor Cost**  
**at Different Wage Rates per Hour**

<u>Rate per Hour</u>	<u>Actual Cost per Hour*</u>	<u>I 12¢ per Pullet</u>	<u>II 20¢ per Layer</u>	<u>III 10¢ per Layer</u>	<u>TOTALS 40¢ per Layer</u>
\$1.30	\$1.48	30,784	18,470	36,941	9,235
1.40	1.60	33,280	19,968	39,936	9,984
1.50	1.71	35,568	21,341	42,682	10,671
1.60	1.83	38,064	22,838	45,677	11,419
1.70	1.94	40,352	24,211	48,422	12,106
1.80	2.05	42,640	25,584	51,168	12,792
1.90	2.17	45,136	27,082	54,163	13,541
2.00	2.28	47,424	28,454	56,901	14,227
2.20	2.51	52,208	31,325	62,650	15,663
2.40	2.74	56,992	34,195	68,390	17,098
2.60	2.97	61,776	37,066	74,131	18,533

\* Refer to Table A for labor rate and actual cost differences.

I. Number of pullet replacements needed to raise per full-time man equivalent at 12¢ per pullet.

II. Number of laying hens to feed and gather eggs from for each full-time man equivalent at 20¢ per layer or 1¢ per dozen eggs.

III. Number of birds required to handle at a cost of 10¢ per layer.

TOTALS. Number of laying hens for all labor requirements at 40¢ per layer or 2¢ per dozen eggs.