Profit by Cameras [1]

WILLIAM F. ENGESSER
Professor, Industrial Engineering
and
RANDY CONRADS, DANIEL CHEUNG and WILLIE MERCER
Student Research Assistants
Oregon State University, Corvallis, Oregon 97331

ABSTRACT

By using cameras, processors can increase immediate-profit goals more quickly and can plan for better long-range benefits. The authors demonstrate how super-8 motion picture analyst projectors define and measure current seafood processing operations. Actual and proposed benefits are identified by standard-cost data, developed from camera studies of pink shrimp, bottom fish, Dungeness crab and Tanner crab. In addition, camera studies describe current blue crab processing, and predictions of future improvements are estimated from the production data of a cooperating Louisiana seafood processor.

Researchers illustrate, by film, specific *time*, *people* and *value* problems associated with six Oregon State University Sea Grant projects (● without and ●● with equipment investment).

1. *Pacific Pink Shrimp (Pandalus jordani)*
   - ● Manually shucking improvements show over 50% potential productivity increases.
   - ●● Mechanically-picked shrimp machines led to more dramatic direct-cost reductions of over 30 cents/pound.

2. *Dungeness Crab (Cancer magister)*
   - ● Training films led to 20% productivity increase and 2% yield increase.
   - ●● Mechanized studies were not conducted last year because of unusually low crab harvests.

3. *Snow Crab (Tanner Crab)*
   - ●● Mechanization of crab-meat extraction by rollers and other devices produced potential productivity-rate increases of over 50%, plus other benefits.

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[1] Profit by Cameras, Circular No. 47, is available from Engineering Experiment Station, Oregon State University, Corvallis, Oregon 97331.

4. *Bottom Fish (Petrale Sole, Rock Sole, Sand Sole, and Flounder)*
   - A fillet-training manual illustrates marked improvement potential.
   - ●● Partial mechanization by use of the automated skinning machines show cycle-time reductions of 50% and yield increases.

5. *Blue Crab*
   - Current films show the specific skill factors which increase productivity.
   - ●● Limited camera studies of mechanized processing (the centrifuge) shows promise. Film documentation of other equipment is needed.

6. *Employment Stabilization (Long-range Facilities Planning)*
   - ●● The ultimate benefits of camera studies should lead to complete seafood system designs; a linear-program product-mix model shows employment stabilization.

Continued improvements in the design of mechanical shrimp pickers minimized the quality advantages of hand picked shrimp. Before these improvements, hand picked shrimp had a 10 to 30 cent-per-pound market value premium. However, within a two-year period, Oregon processors installed mechanical pickers because of the combination of improved quality and reduced costs. Inplant test runs show that a well-designed mechanized line resulted in potential cost reductions of 37 cents per pound as summarized below.

SHRIMP PICKING COST – AUTOMATIC vs MANUAL

	Automatic Walls – Plant [2]	Manual Plant
Direct labor costs (cents/lb):		
(1) Preparing, picking	3.58	42.31
(2) Inspection, filling, storage	4.58	4.59
Indirect labor costs:		4.99
Equipment costs:	5.61	.06
Overhead & supply costs:	2.04	.06
Total processing costs:	15.81	52.01

These costs were accumulated in the summer of 1972 based on an annual production of 300,000 pounds of picked shrimp. Since then shrimp separators, improved material handling and larger shrimp harvests have led to further cost reductions.

[2] Bobby Jack Walls, OSU Graduate Student, Industrial Engineering, Shrimp Cost Report, June 15, 1972.