Egg handling is one of the most labor intensive operations on today’s egg production farm. Even though it is estimated that more than 80% of the eggs (US) are gathered mechanically by belt collectors, eggs must still be cleaned, candled, sized, and packed before they are ready for marketing. During these procedures, egg breakage becomes one of the more expensive problems on the farm and in the processing plant (Bell, 1998).

56-A. GATHERING EGGS

Egg collection is done either manually or mechanically. Manual collection is still the method of choice in countries where labor is plentiful and mechanized equipment is expensive or unavailable. Egg producers with non-mechanized farms may spend as much as 60% of their labor costs to gather eggs once or twice per day. Egg gathering rates vary from 2,500 to as many as 7,000 eggs or more per hour per worker depending upon the experience of the workers, cage configuration, type of flooring in the aisles, and the availability of accessory equipment (push or mechanical carts).

Collecting eggs by hand requires extreme dexterity in order to maintain an economic rate of collection while at the same time minimizing additional egg breakage. Full-time experienced egg gatherers can gather up to 50,000 or more eggs in an 8 hour day if conditions are ideal. This requires carts, a plentiful supply of filler flats, a nearby storage site for receiving the stacks of filled flats, and someone else to transport the eggs to the packaging plant for either immediate processing or overnight storage.

Today, in the United States and other technologically developed nations, most new egg production houses are equipped with mechanical belt col-
Collection systems which automatically collect eggs once or several times per day or continuously throughout the day. Mechanized egg collection uses a moving belt, between 2 and 4 inches (5 to 10 cm) in width. The belt is usually located in front of the cages and delivers the eggs to the end of the cage row where they are transferred to a cross-belt. If cages are tiered, they must first be escalated or de-escalated to a common level for transfer to the cross-belt. At this point the egg can be transported directly into the egg packaging plant for cleaning, grading, and packaging. This process is termed *in-line processing*. Collection from individual houses is timed to provide a steady flow of eggs to the processing equipment. Eggs may be gathered one house at a time or in groups of houses in order to provide the packing plant with a “blend” of sizes and quality, and so that no surges of all big eggs or all poor quality eggs are processed at the same time.

On other farms, a mechanical farm packer removes the egg from the belt and automatically places them in a 30-egg filler flat. Mechanical stackers accumulate 6 flats at a time and a person places the stacks on a pallet or rack for transport to the processing/packaging plant. Farm packers can handle up to 100 cases (360 eggs/case) per hour with one worker. This is equivalent to the output of 10 average or 5 extremely experienced hand gatherers. Production facilities that require transportation to a processing plant are termed *off-line processing*. 

*Figure 56-1. Collecting Eggs by Hand—Gatherers Must Be Monitored for Their Contribution to a Farm’s Egg Breakage Problems*