

## **An HSUS Report: Welfare Issues with Conventional Manual Catching of Broiler Chickens and Turkeys**

### **Abstract**

Each year in the United States, approximately 10 billion land animals are raised by the meat, egg, and dairy industries. Of these animals, more than 90 percent are broiler chickens (chickens raised for meat) and turkeys. At just 6 weeks of age for broiler chickens and five months for turkeys, the birds reach slaughter weight, when they must be caught and crated for transport to processing plants. Conventional manual catching results in severely compromised welfare, adversely affecting both their physical and emotional well-being, such as elevating stress levels, fear, and incidences of bruises, broken bones, dislocations, and other injuries that lead to carcass downgrading. Alternatives to customary manual catching that improve bird welfare exist, including mechanical harvesters, gentle manual catching, and, for turkeys, herding into specially designed transport crates.

### **Introduction**

More than 9 billion broiler chickens and nearly 250 million turkeys are slaughtered for meat annually in the United States.(1) The overwhelming majority of these birds are confined by the tens of thousands in barren sheds(2,3) on industrialized factory farms. Selectively bred for rapid growth, chickens and turkeys are manipulated to achieve slaughter weight in the shortest period of time. In five decades, the rearing time for broiler chickens has halved, from 84 days to 42 to 45 days,(4-6) and today's turkeys reach 35 pounds in 132 days, rather than the 220 days it took 40 years ago.(7) As a result of this rapid growth, many chickens and turkeys struggle to withstand the pressures their weakened bodies endure, with many suffering from gait abnormalities,(8) painful skeletal disorders,(9-11) cardiovascular disease,(12) and other disabilities,(13) serious welfare issues that can be exacerbated by conventional manual catching, a major cause of stress and injury among farmed poultry.

### **Conventional Manual Catching of Birds Raised for Meat**

When birds raised for meat reach slaughter weight, they must be caught and crated for transport to slaughter plants. In the United States, most birds are caught by hand by "catchers" who typically carry birds inverted by a single leg, three or four birds per hand, and throw them into transport crates.(14-16) During an average shift, a single catcher will lift between five and ten tons of birds at a rate of 1,000 to 1,500 animals per hour.(17,18) Catching crews are typically paid by the shed or by weight, so there is little incentive to be gentle in handling.(19) Nijdam et al. report that "[f]or a member of a catching team, it could be difficult to maintain concentration and exercise care throughout a longer catching time."(20) Rough handling, which causes birds to experience fear,(21) can increase as crews become fatigued. Lacy and Czarick concluded that "as fatigue sets in, one's primary motivation becomes just getting the job over with. Catching and crating the birds as quickly as possible with the minimum effort possible becomes the major focus. Careful handling becomes secondary."(22)

Birds raised for meat are typically unaccustomed to being touched by humans. When handled, their plasma corticosterone levels elevate, a physiological indicator of stress.(23,24) The method of handling can also affect stress. Kannan and Mench report that being carried with other birds and being inverted both elevate plasma corticosterone levels compared to birds carried singly and upright.(25)

In addition to stress and fear, birds suffer a number of injuries during catching, including bruises, broken bones, torn skin, and dislocations. Injuries associated with manual catching are well-documented:

- Kettlewell and Turner found that as many as 20 percent of birds experienced injuries during catching that led to downgrading.(26)
- The *Wall Street Journal* reported that “up to 25% of broilers on some farms are hurt in the [catching] process.”(27)
- Five to 25 percent of poultry carcasses at processing plants exhibit bruising of the breast, thighs, or wings.(28,29)
- Griffiths estimated that 40 percent of bruises recorded at processing plants are caused by catching and crating,(30) while McGuire estimated 90 percent.(31)
- Grandin recounted one operation in which 5 percent of birds had broken wings caused by rough catching.(32)
- Nijdam et al. reported that 29.5 percent of dead-on-arrival (DOA) broiler chickens at slaughterhouses exhibited trauma that the authors attributed to catching and crating.(33)
- Bayliss and Hinton reported that 35 percent of DOA broiler mortality was due to catching and transport injuries.(34)

In a review of poultry welfare problems caused during catching and transport, Knowles and Broom concluded, “[T]he most traumatic stages of the process and the stages most likely to give rise to physical damage, are the times when the birds are manually handled.”(35)

### **Alternatives in Poultry Handling**

There are alternatives to rough catching practices, including mechanized catchers, gentle handling techniques, and herding into transport modules. To reduce production losses due to bird injuries and to decrease labor costs, mechanical harvesters(36) have been introduced to some poultry operations in Europe and North America. These harvesters gather birds with a ramp or with rubber-fingered rotors and pull them upright on a conveyer belt to transport crates. Mechanical harvesters may cause less stress and injury to birds than conventional manual catching, as the machines reduce the amount of time the birds are in physical contact with humans, handle the birds upright, and may move the birds more gently. Birds can also be caught gently by hand. In Sweden, birds are carried upright in pairs, a method of handling that causes fewer injuries than conventional catching and at least some mechanical harvesters. Additionally, rather than being caught and carried, turkeys can be herded by catching crews into transport modules, a system associated with less bruising, injury, and stress.

### **Welfare Advantages of Mechanical Harvesting**

Mechanical harvesting may cause birds less stress than conventional manual catching.(37) Duncan et al. found that elevated heart rates and tonic immobility (TI)—indicators of stress and fear, respectively—were shorter in duration among birds caught by a prototype harvester, and concluded: “The differences in duration of TI...suggested that the machine-caught birds were no more fearful than those treated as gently as possible by hand. Tonic immobility in the manually-caught birds lasted about twice as long, suggesting that they were much more frightened. These results indicate that short-term stress associated with the catching of broiler chickens can be considerably reduced by using a carefully-designed machine instead of catching by hand.”(38) In contrast to Duncan’s findings, Nijdam et al. found that harvesting by a “Chicken Cat” machine was not associated with any significant improvement in physiological measures of stress.(39)

Mechanically harvested birds may also suffer fewer injuries. Perdue Farms, Inc. reported a 14-percent decrease in bruising among birds harvested by machine.(40) Knierim and Gocke found that, compared to conventionally manually caught birds, birds harvested with a “Chicken Cat” machine experienced a significantly lower incidence of bruises, fractures, and dislocations. Leg, wing, and rump injuries were 50-, 22-, and 27-percent

lower, respectively, and the number of birds with one or more injuries was 30-percent lower.(41) Lacy and Czarick found that rates of leg bruising were 58-percent lower with a prototype harvester, while rates of other bruises were not statistically different.(42) Elrom reviewed studies finding that mechanically harvested birds had injury rates 25- to 87-percent lower than manually caught birds,(43) while Nijdam et al. found no significant differences in bruising across manual catching and a “Chicken Cat” machine.(44) Delezie et al. found birds harvested with a “Super Apollo” machine had 45-percent fewer wing bruises compared to conventionally manually caught birds, while rates of other bruises were not statistically different.(45)

A potential disadvantage of mechanical harvesters is that catching crews may be less likely to discard dead birds or cull sick birds who are likely to die during transport. Delezie et al.,(46) Knierim and Gocke,(47) and Eckstrand(48) all found higher rates of dead-on-arrival (DOA) birds with mechanical harvesting. They attributed this finding to the inclusion of sick and dead birds in mechanically loaded crates. Another potential disadvantage is that use of mechanical harvesters requires both training and experience, and the animals’ welfare could be compromised as the catching crew learns to operate the machine effectively.(49)

### **Welfare Advantages of Gentle Manual Catching**

Eckstrand measured rates of injury and DOA using a Tekniikka “sweeping harvester” and a gentle manual catching technique common in Sweden, where birds are carried upright in pairs. The gentle manual method employed caused significantly fewer bruises and fractures than mechanical harvesting, and the injury rates she reported under both systems were significantly lower than rates typical of U.S. manual catching crews.(50)

The results are not definitive—much could depend on the machine used and the level of training received by operators—but suggest that, at least under some operating conditions, handling birds upright in pairs causes fewer injuries than the other catching methods. (Corticosterone levels were not measured, and no conclusions were made about stress.)

It is unclear whether the Swedish method would be adopted by poultry operations in the United States and elsewhere, as it requires special training and economic incentives for catching crews that involve slower catch rates and increased labor costs. As Lacy and Czarick write, “It is possible to catch and crate broilers by hand with virtually no damage to the birds. The problem seems to be that the physically demanding nature of the work makes it very difficult for laborers to maintain the attitude and concentration required to handle birds carefully over a 6 to 8 hour work period.”(51)

### **Welfare Advantages of Herding into Transport Modules**

Prescott et al. compared three traditional transport systems for turkeys requiring the birds to be manually caught and loaded with a system that involves driving or herding the birds into transport crates. They found that when the turkeys were not caught and carried, the birds had fewer bruises and injuries. Heart rate was used in this study as a measure of stress, and turkeys who were herded onto transport modules had lower heart rates after loading.(52)

### **Conclusions**

Injury rates during depopulation of poultry houses in the United States are unacceptably high as conventional manual catching of birds is aggressive, hurried, and rough, jeopardizing the welfare of broiler chickens and turkeys. Of the alternatives to typical catching methods, manual catching of broiler chickens in upright pairs and herding turkeys into crates appear to cause the fewest insults to animal welfare. If chicken producers are unwilling to adopt the gentle manual catching method, broiler welfare may still be improved by the adoption of mechanical harvesters. Much depends on the model of harvester used and the level of training received by operators. Adoption of any catching method should be complemented by auditing of bruises, fractures, and other injuries at the processor, and financial incentives to catching crews for careful animal handling.

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