Getting chicks on to feed and water as quickly as possible after arrival on a farm has long been recognized as the key to maximizing overall performance. If provided the ideal environmental conditions and plenty of feed and water, chick weights should increase by roughly 50% during the first 48 hours compared to only 2% over the last 48 hours of the flock! Quite simply, the less time it takes chicks to start feeding and drinking, the more quickly their gut and immune system will mature, the quicker their bodies will gain weight and the less likely they will get sick. Studies have shown that during these formative hours that small problems can have a long-term impact. For example, one study found that exposing day old chicks to 55°F for just 45 minutes resulted in a 10% reduction in weight by 35 days of age (Lacy, 1994).

Placing paper under drinker lines has been a relatively common strategy to encourage chicks to start drinking as soon as they are placed in a house. Producers have theorized that the sound created by chicks walking on the paper as well as the novelty of the paper tend to attract them towards feeders and drinkers as soon as they are placed in the house (Figure 1). Though the attraction of the chicks is widely recognized, there are still aspects of placing paper under the drinkers that have not been thoroughly studied. For instance:

1) Does placing paper under the drinker lines lead to a measurable increase in drinking and feeding activity?
2) How long does the attraction last?
3) Do chicks drink significantly more water in houses with paper under drinkers versus those without?
4) Does placing paper under the drinker lines improve first week weights and reduce first week mortality?

A field study was conducted on multiple commercial broiler farms to explore the possible benefits of placing paper under drinker lines during the first seven days. The study took place in Northeast Georgia on seven contract broiler farms, which grew approximately a 4.5 lb bird at an average stocking density of 0.80 ft² per bird. On each of the seven farms, two randomly
selected houses were used for the study. One house had no paper placed under drinker lines (Figure 2) and a second house had an 18” strip of paper placed under every drinker line (Figure 3). The paper used was brown, thin, and light, similar to that of a heavy tissue paper. The effect of paper under drinker lines was evaluated with water usage, chick body weights, first-week mortality, and time-lapse cameras. Water usage was monitored in each house with ultra-low-flow water meters, which continually measured and recorded water usage on a min-to-min basis. These meters provided the capability to monitor water usage the moment chicks start drinking at placement.

Figure 2. No paper placed under drinker lines.

Figure 3. Paper placed under every drinker line.

Figure 4. Minute-to-minute water usage during the first three hours (Farm 1).

Figure 5. Higher chick activity near drinkers in house with paper.

Figure 6. Minimum chick activity near drinkers in house without paper.
Shortly after chicks were placed on the first farm, water usage data indicated that chicks were drinking more water in the house with paper placed under drinker lines versus the house without. In fact, chicks drank roughly 30-50% more water within 15 minutes of being placed (Figure 4). Photos taken shortly after placement helped illustrate the attractiveness of paper under the drinkers, which led to increased drinking (Figures 5, 6). However, the spike in water usage was short-lived. Data showed that after two hours, water usage was relatively similar between the two houses (Figure 7). Rate of activity around drinker lines between the houses was virtually indistinguishable (Figures 8, 9). By the end of the first day, water usage in the two houses was within 10 gallons of each other.

![Figure 7. Minute to minute water usage during first 24 hours (Farm 1).](image1)

![Figure 8. Four hours after placement (paper).](image2)

![Figure 9. Four hours after placement (no paper).](image3)

![Figure 10. Minute-to-minute water usage during the first three hours (Farm 2).](image4)
On the next farm, moments after chicks were placed, no initial increase in drinking activity was noted. During those first few hours, no spike in water usage was seen in the house with paper under the drinkers (Figure 10). In fact, among the two houses, chicks were drinking approximately within +/- 5% of each other for the first twelve hours. By the end of the first day, drinking activity was relatively the same in both houses (< 10 gallon difference). Unlike the first farm, placing paper under drinkers seemed to have no effect on chick water usage.

So does placing paper under drinker lines have an effect? Of the farms studied, four out of the seven farms (Farms 1, 3, 4, and 6 - highlighted in brown in Figures 11, 12 and 14) saw an effect of increased drinking activity. On those four farms, chicks were drinking approximately 30% more water for roughly two to four hours post-placement. But, by the end of the day, only two of the four farms indicated a slight increase in total daily water usage for the houses with paper under the drinkers. By day seven, only one of the two houses with paper under the drinkers that had shown slightly higher water usage at end of first day continued show a slight increase in cumulative water usage. (Figures 11, 12). First-week water usage varied far more between farms than by treatment (paper vs. no paper). This is important for two reasons. First, since feed consumption follows water usage, this would tend to indicate that total feed consumption was more affected by variations between farms than the presence of paper under the drinkers. Secondly, it tends to indicate that there are other factors that are affecting first-week performance more than the presence of paper. Any effect that placing paper under the drinkers may have had upon water usage is generally minute when compared differences between the farms which would be due to various management practices such as air temperature, air quality, house tightness, drinker management, etc. By the end of the first week, it appears that general brooding management practices had a five times greater effect on cumulative chick water consumption, and therefore feed consumption, than placing paper under the drinkers.
The role that general house management can play on first-week performance was seen on a number of farms. One farm for example showed the house with paper placed under drinker lines using noticeably less water than the other house. After walking through each house, it was found that in the house with paper, the drinker lines were set too low for chicks to easily reach. Once lines were adjusted, water usage between the two houses became similar (Figure 13). On another farm, brooding temperature had likely masked the effect of paper under drinkers. The day chicks were placed, the average house temperature was 83°F, 10°F below ideal brooding temperature. Chicks were seen huddling and staying within feed lids rather than going towards the paper. An attraction towards drinker lines cannot occur if chicks are not willing to move. The last farm, however, was seemingly the opposite of the previous two where a lack of effect may simply been due to proper brooding management. The grower on this farm is typically a top producer. They preheat houses well before chicks are placed, thoroughly check drinkers and feeders, and in general run through a checklist before chicks arrive. With the key factors in place, the effect of paper may have been minimal. The chicks were placed in an environment that was comfortable and the chicks may not have needed the extra encouragement to go towards drinkers or feeders.

A short-term effect of increased drinking activity in those first few formative hours did not significantly affect first week performance. Body weights 24 hours after placement indicated no significant differences between houses on all farms studied. Weights were within +/- 5% of each other on every farm. At seven days, body weight and mortality numbers demonstrated the same trend. There was little to no effect on seven-day weights (Figure 14) and no mortality reductions were observed on farms.

Was the sound created by the thin paper too quiet or disintegrated too soon to have a lasting effect on chick performance? A follow-up study was conducted on several additional farms evaluating a heavier paper that was comparable to construction
paper/butcher paper. Analysis of these farms revealed similar results. Regardless of paper type, the effect was essentially the same. Placing paper under drinkers caused only a short-term effect on drinking activity and no measurable improvement in first-week performance.

What this study highlights is that though placing paper under drinkers may sometimes result in increased water usage for the first few hours after chicks are placed, it doesn’t appear to have a long-term effect on chick performance. Could placing paper under the drinkers have more of an effect on chicks which have been dehydrated due to long transportation or hold times or possibly on weak chicks from young breeder flocks? Possibly. But, at the end of the day, this study confirmed that maximizing first-week performance is primarily about getting the basics right: plenty of quality feed, clean water and proper environmental conditions.