

► **Do you want to improve inconsistent white meat yield?**

Why not use a vision system?



YieldScan™ Rapid Frame Analyzer

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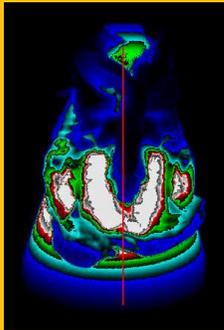
► *Success you can measure.*

How it Works

► New Solutions for the Challenges of Poultry Deboning

Manual poultry cone lines and automated deboning operations have the potential to deliver some of the best sales and profit margins in the industry, due to the volume of high-margin meat they produce.

Unfortunately, many processing operations aren't realizing their full financial potential because the traditional frame scrape method to measure their performance is not consistent. Moreover, the traditional method doesn't offer results in real time.



How the vision system "sees" a frame to measure the residual meat.

The vision system transmits NIR light through a cone, detects it with cameras, and measures the residual meat on the front of the frame. The NIR light intensity on the frame correlates to the residual meat remaining on the frame.

Because the NIR illumination technique delivers consistent results, it provides more frequent and more useful information for processing line managers to optimize their meat yield and profits.

The vision system provides these valuable tools:

- Increased sampling and real-time, actionable information
- A clear leading indicator for supervisors to drive improvements on the processing line
- A standardized scoring system across inspectors, processing lines, and plants
- It allows maintenance personnel to tune up automated deboning equipment more precisely

Touchscreen interface on the YieldScan™ rapid frame analyzer.



For all of its shortcomings, the reason the frame scrape test has been so widely used is because up until now, it's been the best way to gain a rough idea of what was happening with line performance. It might not be highly accurate, but it's better than nothing at all.

But today, thanks to advancements in vision-based scanning technology, we now have ways to use infra-red light to monitor and analyze the deboning process more accurately – and in real-time.

Near infra-red (NIR) light is the closest illumination to "visible" light. For this reason, it is highly suited for imaging and is easily "sensed" with a detector.

Thanks to the efforts of the scientific and engineering community – including specialists at Georgia Tech Research Institute and Gainco, a practical solution for plant supervisors now exists: the **YieldScan™ Rapid Frame Analyzer**. This is a QC instrument that can be used on the plant floor to help manage poultry deboning lines.

The Benefits ... and the Financial Impact

The benefits of the new vision system are numerous, including:

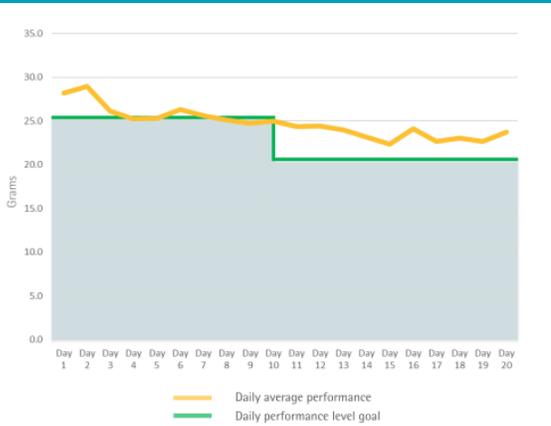
- It allows for a simple, fast, accurate and repetitive procedure
- It enables increasing the sampling size and frequency
- It allows the production team to focus on one KPI ...
- ... while observing other performance indicators, too
- The scoreboard stimulates real-time feedback, healthy competition and employee motivation
- Enables consistent reporting and analysis across all plants, lines and shifts – easily accessible via computer

Several companies are already benefiting from this new vision system. All of them have experienced the same positive results.

During a three-week trial at a plant that processes 1 million birds per week, managers experienced a 3.5gr reduction of scrapes. Figure 1 shows the economic impact of this test.

Figure 1

Real-time Feedback to the Debone Line Residual Meat Daily Average



The chart above shows how real-time feedback reduced residual meat and improved yield results within a matter of several weeks. The positive financial implications of the improved performance are shown in the chart below.

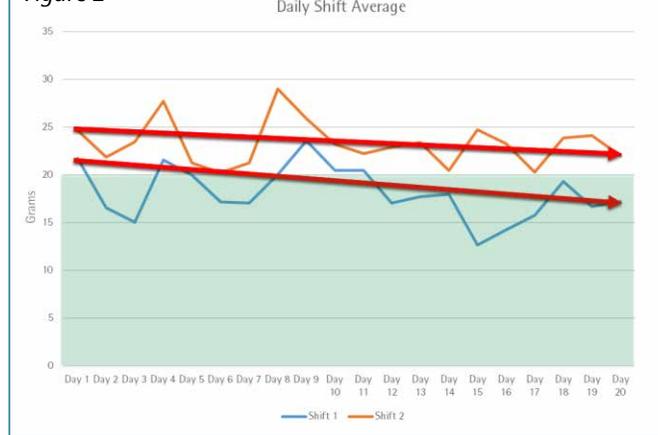
Parameter	Product
Residual meat saved (g)	3.5*
ALW (lb)	6.5
Fillet Yield Gained (%)	0.62
Birds/week	1,000,000
Weeks/Year	52
lbs/Year Gained	400,881
\$/lb	1.25**
\$/Year	501,101
Justification (Months)	1.9

Besides the economic impact it delivers, users have seen that the vision system:

- Offers immediate feedback to the personnel working on the debone line and the floor supervisors
- Creates "healthy competition" between the debone lines
- Allows management to compare performance between debone lines, shifts and plants
- Allows for the implementation or improvement of incentive programs

One additional benefit that comes from using an automated system is that it can drive results by creating positive feedback with the people working

Figure 2



Trend observation shows the reduction in residual meat left on frames over time.

on the debone line. The constant positive reinforcement along with corrective actions involving equipment and/or operators means that improvements can be made faster and more effectively.

The experience of processing line managers underscores that the system is improving cone line operations in numerous ways, eliciting comments such as these:

- "Our frames have never looked this clean."
- "It's like having another set of eyes on the cone line."
- "Information is sent to the board automatically – saving us time."
- "We can easily compare results for plants, debone lines and shifts."
- "It's giving us new ways to incent our personnel."
- "The lines taunt each other good-naturedly when the results come out."

Debone Line	Residual Meat (g) (recent 3 tests)			Shift Average (g)	Performance Level
	1	2	3		
1	43.4	41.7	7.8	31.0	< 15
2	11.3	11.4	10.9	11.2	15-16
3	17.9	10.9	13.5	14.1	> 16
4	19.8	4.9	3.4	9.4	

Current Shift: 06:00am - 06:00pm
02/15/17 | 16:12
P/N 810210 Ver. 3.1.0.
192.168.100.133

The plant floor scoreboard: Real-time feedback is the key to improving yield.

Conclusion

The benefits of adding a YieldScan™ Rapid Frame Analyzer to a deboning line operation fall into four major categories:

- More and better information compared to alternative scoring methods drives more positive actions on the processing line
- More useful information improves corrective actions involving equipment and/or operators in real time, instead of after-the-fact
- Real-time information presented on the cone line motivates employees
- Taken together, all of these insights on the deboning process will ultimately improve product yields

The impact of these benefits positively affects the financial bottom-line, too.

Last but not least, incorporating vision systems into multiple deboning operations makes it possible to achieve the benefits of **consistently strong performance companywide** when it comes to monitoring and improving product yields and profits.



- ▶ To learn more about how the YieldScan™ Rapid Frame Analyzer works and the impact it can have on poultry cone line operations, please contact **Humberto Hernandez** at HumbertoHernandez@gainco.com or **877-869-7410**. Or visit gainco.com/yieldscan.



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