MARCO®
Smart Weighing Technology Experts
AN ATS COMPANY

EXCELLENCE IN BERRY PACKING

Technologies to Increase Pack House Productivity by 30%

Steady growth in the worldwide production and consumption of pre-packed soft fruit and berries is presenting increasing challenges for pack house managers; especially in terms of optimising productivity, efficiency, labour over-heads and quality, whilst minimising waste and giveaway/overpack. Products include strawberries, raspberries, blueberries, blackberries, cherries and an increasing trend for more exotic berries. The world market for berries is estimated to be in excess of five million tonnes, with strawberries outstripping sales of all other berries combined. Over 95% of the fruit is pre-packed.

Growing scrutiny and increased demands from the major supermarkets and retail outlets insist that pre-packed berries have to meet challenging criteria in terms of pack consistency and presentation.

Pack houses need to increase performance without sacrificing profitability. One thing is clear: in order to compete, growers and packers need to ensure they have greater visibility and control within their pack house.

Current Situation

Given the varied characteristics in terms of shape and size, the packing process will continue to rely heavily on the skill and consistency of individual packers.

The challenge is to strike a balance between maintaining target weights within legal requirements and minimising giveaway; whilst preserving pack presentation and optimising throughput productivity.

Giveaway/Overpack

Traditionally Berry pack houses have used stand-alone digital bench scales to determine and control pack weights. While these systems may seem simple, they are often slow, labour-intensive, and lack the ability to track key performance metrics. As a result, there is no way to monitor trends or assess the performance of individual operators, critical insights for optimising today's high-performance packhouses.

In many operations, the drive to minimise underweight packs often leads to slower line speeds, which in turn results in significant giveaway and overpacking. Global evidence shows that without an advanced yield control system, overpacking can be as high as 10-15%. This not only reduces profitability but represents a substantial, unsustainable cost to the business.

Packhouse Visibility

In large packhouses, managing high volumes of workers, often with varying skill levels, can be a complex and chaotic task. Without the right systems in place, management struggles to monitor individual performance or accurately measure the productivity of each worker, making it difficult to optimise operations and identify areas for improvement.

As labour costs rise, particularly in regions once known for low wages, the need for visibility and performance tracking has never been more critical.

Without effective performance measurement systems, packhouses risk falling behind competitors who are better equipped to manage their workforce efficiently and cost-effectively.

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The Solution

Fortunately there are now packhouse productivity systems that have been specifically developed to provide an easy-to-use operator interface, together with the levels of data capture required for comprehensive packhouse visibility and control. Companies that have invested in such yield control systems are now well ahead of their competitors.

"The intuitive MARCO YCM system is very easy for our operators to use and has already reduced pack giveaway to fractions of a gram, whilst also significantly improving packing speed. Prior to this installation we used conventional digital scales and operators had to manually log batch data."

B H Savidge & Sons, UK

Reducing Giveaway

Any yield control system must be easy to use by operators. Evidence shows that operators quickly respond to a simple system of lights incorporated within the weighing scale. This is used to indicate whether pack weights are under, above or on target. Recent developments have taken this concept one major step further, whereby each light segment on the visual light display represents a single fruit.

Installations clearly show that this feature significantly increases the speed of the packing process and is ideal for berry packing. The terminals can be pre-programmed to store weight values for different types of berries, making pack line changes very simple and rapid. As pre-packed berries travel down the packing line, they are placed on the scale and then operators are visually prompted to add or take out individual fruits to ensure the pack weights are within target. This clear, visual method of indicating target weight compliance also reduces operator training requirements.

Each operator will have a slightly different packing technique which if unchecked can result in out-of-tolerance packs. The solution is to implement Automatic Optimisation software. This runs quietly in the background, constantly checking and fine tuning target weights at each packing scale to ensure giveaway is virtually eradicated. Operators are unaware of these subtle changes and continue to pack to the One Light = One Fruit signal.

"The MARCO system brings important cost and quality benefits to our operation. MARCO engineers have worked closely with our personnel throughout the project to ensure a fully integrated system. They have listened to our input and designed the system around our specific requirements - without compromise. We have seen an increase in our packing speed and thanks to the software control, the overall giveaway has dropped to next to zero."

Winterwood Farms Ltd, UK

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Predictive Packing

Packing line speeds and overall productivity are influenced by several factors, but one of the most critical is the weight consistency of berries coming in from the fields or pre-pack areas. The fewer adjustments required on the line, the smoother and more efficient the operation.

By implementing a real-time feedback system that integrates seamlessly with packing scales, pack houses can dramatically improve work flow. Using a simple, colour-coded light system, this system immediately highlights if packs arriving at downstream scales are too heavy or too light, providing clear visual cues to operators. This allows for swift adjustments to be made in the pre-pack area, before the packs even reach the line.

This innovative approach significantly reduces the need for weight adjustments on the line, streamlining operations and boosting productivity by ensuring that packs are consistently within the desired weight range, faster, more accurate, and with less downtime.

Mass Balance and Security

Mass Balance

The ability to measure the actual usage of product, from initial issue to the lines through to finished packs provides critical information on the overall effectiveness of the pack house and can be used to check the efficiency of individual packers/operatives. Although waste is inevitable in the modern pack house environment, companies can improve competitiveness by minimising the impact on their business.

There are essentially three sources of waste generated within the pack-house:

- Accumulated product at work stations that can be re-used
- Damaged/unusable waste product that has to be thrown away
- Unnecessary giveaway/over-pack in finished packs

By using platform scales and barcode scanners located at key areas of the pack house, combined with data from individual packing stations, over-all waste production can be accurately measured.

Firstly, the system records the total weight of product issued to each packing line in a given time period. Recorded data can include time & date, product description, batch/lot number.

Secondly, the two types of accumulated waste product (reusable and scrap) at each of the packing stations are weighed and recorded, including operator identity.

Finally the total weight of finished product packed within the measured period is recorded.

From this information, together with pack weight trends recorded at the individual work stations, the system calculates overall waste production per line/

per operator and levels of over-pack/giveaway to give an over-all real time mass balance for the pack-house.

Such mass balance information is particularly useful for contract packers. The data gathered throughout the pack house can be used to show individual growers how efficiently their particular produce has been packed.

Security

Packhouse operators are usually paid on a productivity basis, the more product they pack in a given time, the more they get paid.

However in some instances this can lead to operators trying to unfairly increase their productivity by weighing the same pack more than once or allowing out of tolerance packs to go through.

This can be prevented through clever software, which records and compares each pack weight at individual packing stations. Bogus weighings (e.g. successive identical weighments) are instantly detected and flagged up to supervisors.

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Leading the future of Fresh Produce Packing Solutions

At MARCO, we bring over 35 years of experience in the design and development of innovative, high-performance fresh produce packing systems. Our systems are not only engineered to meet the unique needs of each client but also built to deliver measurable improvements in pack house productivity - with gains of up to 30% in efficiency.

We specialise in providing dedicated engineered solutions that combine advanced hardware and cutting-edge software. Every component is designed from the ground up to meet the specific requirements of fresh produce packing, ensuring optimal performance in even the most demanding environments. Our systems are seamless and highly adaptable, integrating easily into existing work flows.

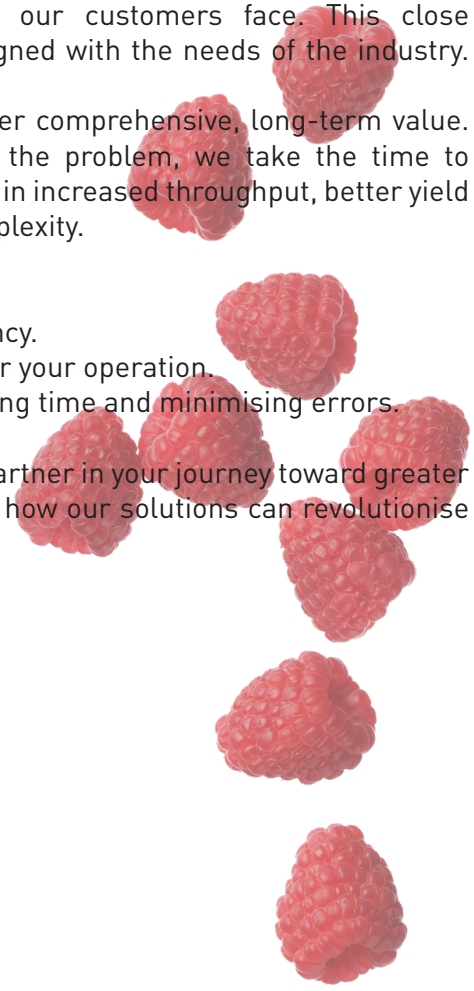
Tailored for Your Needs: Hardware and Software, Designed Together

At MARCO, we believe in a holistic approach to system design. Both our hardware and proprietary software are developed in tandem to deliver end-to-end solutions that are not only highly efficient but also intuitive to use. This means fewer errors, faster training, and a smoother user experience. Operators can focus on what matters most - productivity and quality with minimal downtime or complexity.

Proven Expertise: MARCO Yield Control Module (YCM)

MARCO YCM exemplifies our commitment to precision, efficiency, and reliability. The YCM system is the result of decades of collaboration with growers and packers around the world. We don't just deliver products, we listen, learn, and adapt to the real-world challenges our customers face. This close partnership ensures our solutions are not only effective but also fully aligned with the needs of the industry.

Over the years, we have built a reputation for providing solutions that offer comprehensive, long-term value. Instead of pushing one-size-fits-all products that only address part of the problem, we take the time to understand your unique operations and craft the right solution. This results in increased throughput, better yield management, and enhanced consistency, all while reducing costs and complexity.



Why Choose MARCO?

- **Proven Productivity Gains:** Up to 30% improvements in packing efficiency.
- **Dedicated Solutions**: Hardware and software engineered specifically for your operation.
- **Intuitive Design**: Systems are easy for operators to use, reducing training time and minimising errors.

With MARCO, you get more than just a packing system; you gain a trusted partner in your journey toward greater operational efficiency, productivity, and success. Contact us today to learn how our solutions can revolutionise your fresh produce packing operation.

"The packing of our range of soft fruit requires a fine balance between speed and presentation to ensure we deliver accurate pack weights of the highest quality fruits. The MARCO installation has significantly reduced our giveaway and improved our productivity, whilst representing an excellent return on investment as promised."

Beekers Berries, The Netherlands

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