



An tÚdarás Sláinte agus Sábháilteachta
Health and Safety Authority

Ergonomics Good Practice Case Study

Manufacturing Sector Iverk Produce

Organisation:

Iverk Produce

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This case study demonstrates how Iverk Produce managed ergonomic risks through the introduction of a range of engineering and organisational improvements in the way work was carried out to avoid or reduce the risk of musculoskeletal injury.

*Pictured (left to right):
Carol Madden (Inspector,
Health and Safety
Authority, Jason Dunphy
(Supply Chain co-ordinator
and Health and Safety
Committee member), Iverk
Produce, Frank Power (Senior
Ergonomist, Inspector),
Health and Safety Authority.*



The organisation

Iverk Produce is a major supplier of fresh fruit and vegetables, serving the daily needs of wholesale and retail outlets across Ireland since 1980. Our modern facilities in Piltown, Co. Kilkenny include temperature-controlled storage and packing facilities. Working locally with over 50 growing partners in the South East allows us to shorten the timeframe from farm to plate, maximising the freshness of our produce and minimising our impact on the environment. **Total Produce**, now merged with Dole PLC, are Europe's largest fresh produce provider. Since 1992, they have worked with us creating competitive advantages and providing value for our customers. They ensure an efficient supply chain while guaranteeing freshness and continuity. High quality standards are maintained throughout our production process while strict quality protocols ensure our food standards are fully compliant with Bord Bia, BRC and HACCP. We have also taken several initiatives to reduce our environmental impact and improve our energy efficiency.

The Project Team involved:

There were a number of key staff involved in this project. Declan Blanchfield (Operations Manager), Jason Dunphy (Supply Chain Co-ordinator and Health and Safety Committee Member), Paul Brophy (General Manager) and John Brownrigg (Packhouse Operative).

01 | Stage 1: Problem Identification

Description of task

Iverk Produce is involved in the packing and distribution of fruit and vegetable produce. In the assembly areas, full crates of fruit and vegetable product are transported from another area of the factory on a conveyor. At the end of the conveyor, an operative was required to carry out a repetitive manual handling task, which involved the manual transfer of individual crates from the conveyor to a pallet, which was located adjacent to the conveyor. The full crates would be stacked four crates per layer and stacked ten crates high with 40 crates per pallet. This activity would be carried out over a long period. It was recognised that this manual handling task exposed workers to manual handling risk factors.

Evidence of Risk Factors

The risk factors included:

- The load is positioned in a manner requiring it to be held or manipulated at a distance from the trunk or with a bending posture.
- The work environment results in loads being handled at head height or above.
- The activity results in over frequent or over prolonged physical effort.
- The physical effort is too strenuous.



Figure 1 - Before improvement

02 | Stage 2: Problem Solving Process

A project team was set up to look at the problem. It was agreed that it was very important to consult with the operatives who were currently carrying out the task in order to get a good understanding of the task and the potential challenges they may have in completing the task.

Problem Solving Activities

The main activities undertaken were:

- Study of the work activities at each step in the manual handling task.
- Collection of data including information on the total number of crates handled on a shift, weight of a full crate, etc.
- Using the HSE UK Mac Tool to quantify the ergonomic risk factors and to agree on the Mac Tool risk ratings and numerical scores.
- The Mac Tool analysis identified a number of risk factors as outlined above and steps were then taken to brainstorm possible solutions.
- Management made contact with Lift Rite, a materials handling and lifting equipment supplier, who had expertise in developing custom designed solutions for industry and worked with them to agree an appropriate engineering solution.

03 | Stage 3: Outcome

Main interventions

The project team worked closely with the materials handling & lifting equipment supplier to create a solution to handle up to five fruit crates and / or a combined weight of 70kg. The solution allowed the operators move large quantities of product in a safe manner while removing all the manual handling in the process. The project included the following:

- Concept & Design of Pneumatic Clamping Attachment that could engage and lift multiple plastic crates up to a weight of 70 kg with no manual handling issues.
Installation / Commissioning & Staff Training on the safe operation of the lifting device.
- Crates could be taken easily from the conveyor system and placed on shipping pallets in a safe and efficient manner.
- The Lifting Device was installed on a roof / ceiling suspended Light-Weight Aluminium Manual Gantry Crane System that is easy for the operators to lift and move loads over a large warehouse surface area.
- The work process was improved by safer, faster and easier lifting of product.
- The use of the crate gripper meant that the operator could avoid awkward twisting and repetitive heavy lifting.
- The lifting mechanism had simple up and down controls for lifting and lowering.
- System was ergonomic and easy to use.



Figures 2 & 3 - After improvement

04

Stage 4: Results

“The most significant result with the introduction of the Pneumatic Clamping Attachment that could engage and lift multiple plastic crates was increased efficiencies and the elimination of the manual handling risk factors that existed with the original manual crate transfer process”.

Jason Dunphy, Iverk Produce

Health benefits

There were very positive outcomes with the elimination of manual handling risk factors including over frequent or over prolonged physical effort and the need for lifting of full crates above head height or to ground level.

Evidence of innovation or creative thinking

Full engagement with an engineering company to design a bespoke lifting apparatus for crate handling in the assembly area. As a result of this project, another issue was identified for follow up investigation. There was a manual handling task being carried out in the stores area which required a number of operatives to manually lift boxes of product from a very highly stacked pallet (i.e. boxes of product stacked 12 layers high) to another pallet.

This task resulted in exposure of workers to manual handling risk factors as the boxes were positioned in a manner requiring them to be held or manipulated at a distance from the trunk or with a bending posture and also resulted in loads being handled at head height or above. The project team carried out research and procured a Tygard Claw attachment for the forklift, which was appropriate for de-stacking of high pallets. This was hugely beneficial, eliminated unnecessary exposure to manual handling risk factors, and resulted in a quicker turnaround of loads for assembly.

Evidence of teamwork

A project team was put in place from day one to work through the Health and Safety Executive MAC tool risk assessment process and to work with the handling equipment supplier to ensure that the engineering solution met our needs.

Evidence of consultation and communication with those that work on this production process

There was ongoing consultation with staff during the project to get a better understanding of the issues with the existing system of work and to ensure that they were comfortable with the new engineering solution.

Evidence of any productivity or efficiency improvements

Prior to the introduction of the engineering solution in the assembly area, each individual crate had to be manual transferred from the conveyor to the pallet this resulted in forty manual transfers for each pallet. The engineering solution resulted in the transfer of five crates at a time to the pallet and therefore only required five transfers using the handling aid in order to complete a full pallet.

Evidence of reduced lost days due to accidents or ill health

The introduction of the new equipment is a preventive measure towards accidents or ill health reduction.

Evidence of management commitment and investment in the project

Senior management were very committed to this project from start to finish. Significant investment was made through the introduction of the new engineering solution. The total cost of the solution was €60,000.

Return on investment in the project

There was increase efficiencies and greater investment in people in terms of their wellbeing and safety.

Evidence of increased knowledge and awareness of ergonomics

Naturally, when the risk assessments and engagement with employees was underway, it created constructive discussions amongst the staff. This was positive as employees recognised that potential health risks were being addressed through consultation, risk assessment and the introduction of new engineering solutions.



Figure 4 -
Before improvement



Figures 5 & 6 - After improvement

Testimonial

“Our management and warehouse employees identified a repetitive manual handling difficulty where they were lifting to heights above the head. An ergonomic assessment of the tasks was carried out using the MAC Tool assessment. A team was set up of both management and warehouse employees to carry out the assessments. A brainstorming process took place between our company and an engineering company. The main challenge was to design a piece of equipment for our assembly line that was capable of handling both boxes and crates due to the versatile nature of the business. The solution involved installing a piece of engineered equipment at our assembly line and the purchase of an attachment for our forklift. These additional equipment purchases eliminated manual handling risk factors when preparing finished product pallets for our customer. The company and employees involved can see both more efficient performance and less absenteeism due to manual handling lifting activities.”