Safety Man Basket Enda Goggin K00287403

Aim of the Project

The main aim of this project is to allow working at a height as safe and as effective as possible whilst being a use in the agricultural sector.

Back ground

Before starting the design process or the physical work I first done some research into farm deaths and there causes to create a safer alternative this was a graph that was found.



Total 193

This clearly shows the main cause of deaths that can be prevented are falls from a height this usually happens as risks are not assessed.

Objectives

- To have a high strength finish.
- Reduce risks as much as possible and implement safety features.
- Utilize the project timeline as efficient as possible.
- Look at the cost efficiency for the analysis of future production.

Design

Firstly other designs were looked upon but I found it hard to like what was already there so I started designing up my own.



- This is a design of the frame of the basket that was firstly used to set up the overall design. Steel used:
- 50x50mm box
- 50x100mm box
- 2000x830mm chequered plate •



A simulation of the load being implemented on the steel if a branch collided with it at the front.



TUS Ollscoil Teicneolaíochta na Sionainne: Lár Tíre, An tlarthar Láir Technological University of the Shannon: Midlands Midwest

Methodology

At first the choice of material and sizing was selected this was decided as mild steel and 50x50 mm steel and 50x100mm steel for around the base and mounting for more support. Next the frame was assembled which gave a clearer picture of the overall size that the basket will be.



All welds were completed with the MIG welder for higher finished welds. Next I made the gates and attached the tractor euro brackets.



The euro tractor bracket used to attach the basket to the tractor also welded on with the MIG welder this will have to have strength behind it.

Safety Considerations



Implement anchor points for safety harness's so that the occupant of the basket is kept safe and out of harm also correct gate hinges and latches were installed. Mesh will also be implemented.

Advantages

- Less risk of an accident occurring
- Safer alternative then ladders etc.
- More control from the tractor over the height adjustment.
- With the use of the gates it is simple to exit the basket quickly.
- Quick attach and detach from the tractors loader and safely solid whilst attached.
- Strong and rigid frame from cross members.

Conclusion

Overall I'm happy with the finished product and it will be used for a lot of upcoming tasks in the near future. I would like to thank the Staff of Pallaskenry especially Tadhg and Colm for there time and effort as well as the lads in TUS.