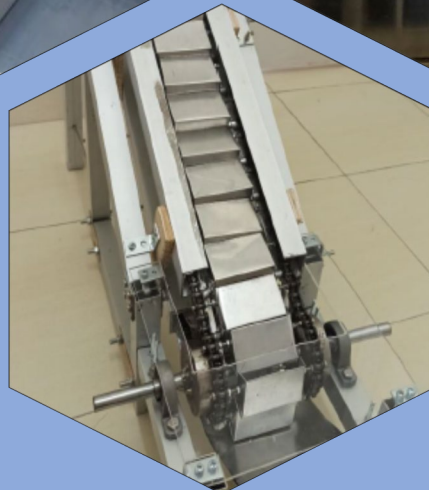
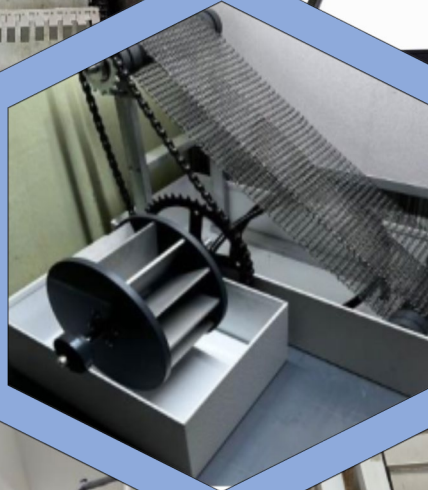


PROTOTYPE DESIGN COLLECTION

SERIES 1



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CHAPTER 6

Fabrication Prototype of Agricultural Bar Sprayer

Ferdinand Dana Anak Alexander and Nur Aini Sabrin Binti Manssor

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PROJECT DESCRIPTION

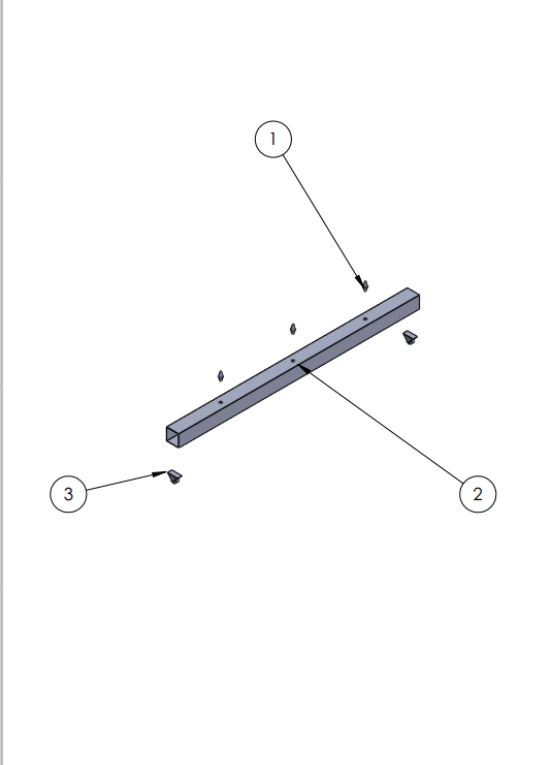
A sprayer is a device that sprays a liquid. Sprayers are commonly used for the projection of water, weed killers, crop performance materials, pest maintenance chemicals, and manufacturing and production line ingredients. A sprayer is a piece of agricultural equipment used to apply herbicides, pesticides, and fertilisers to agricultural crops. In this project, I designed a prototype of an agricultural bar sprayer using Solidworks software based on my actual design and the existing product in the market. The selection of materials was considered in terms of their quality and price. This prototype includes an aluminium type of hollow bar and rail to protect it from rusting as the project is exposed to air and water. I also did an analysis to check on how much load the rails can hold before it fails. The fabrication process includes measuring, cutting, grinding, drilling, and finishing process. This product has straightforward functionality, excellent in terms of strength and stability, and excellent in time efficiency. The prototype can only spray plants that are not more than 1 metre tall, need to operate manually, and require a small hose for more flexibility to move the bar sprayer. These results show that this prototype has some limitations, but it can still achieve the objectives of this project.

Keywords: *Sprayer*


PROTOTYPE



DESIGN PARAMETER

	6	5	4	3	2	1	
D				ITEM NO.	PART NAME	DESCRIPTION	QTY.
C				1	Nozzle	Brass	3
B				2	Sprayer bar	1000mm x 50.8mm x 50.8mm	1
A				3	Wheel and case	d= 25mm	2
D	6	5	4	3	2	1	

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Course Name		MEC300 - FINAL YEAR PROJECT 2			
Group		J4EM1105A			
Approved		Checked		Drawn	
				FERDINAND DANA 16/02/2022	
Drawing Title EXPLODED ASSEMBLY OF BAR SPRAYER					
Part Name -					
Part No. -					
Rev.	Scale	Projection		Weight	Sheet
0	1:12			9.9 kg	1/2

	6	5	4	3	2	1	
D				ITEM NO.	PART NAME	DESCRIPTION	QTY.
C				1	Rail	2000mm x 25mm x 50mm	2
B				2	Stand 1	90mm x 1000mm x 40mm	2
A				3	Stand 2	90mm x 900mm x 40mm	2
D	6	5	4	3	2	1	

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Group		J4EM1105A			
Approved		Checked		Drawn	
				FERDINAND DANA 16/02/2022	
Drawing Title EXPLODED ASSEMBLY OF BASE					
Part Name -					
Part No. -					
Rev.	Scale	Projection		Weight	Sheet
0	1:28			47.03 kg	2/2