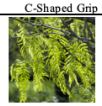
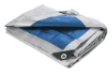
ROUND 1	CV1	CV2	CV3	CV4	CV5	CV6	CV7	CV8	CV9	CV10	CV11	CV12
SF1 	Arduino Uno	Arduino Uno	Arduino Uno	Arduino Uno	Arduino Nano	Arduino Nano	Arduino Nano	Arduino Nano	Arduino Nano	Arduino Nano	Arduino Nano	Arduino Nano
SF2 	FlyFun 80A Opto Brushless ESC	RC Brushless ESC 80A	LiPolice Brushless ESC 80A-Opto	FlyFun 80A Opto Brushless ESC	RC Brushless ESC 80A	LiPolice Brushless ESC 80A-Opto	FlyFun 80A Opto Brushless ESC	RC Brushless ESC 80A	LiPolice Brushless ESC 80A-Opto	FlyFun 80A Opto Brushless ESC	RC Brushless ESC 80A	LiPolice Brushless ESC 80A-Opto
SF3 	Rotating Unbalance	Sound (Speaker)	Rotating Unbalance	Rotating Unbalance	Rotating Unbalance	Rotating Unbalance	Rotating Unbalance	Rotating Unbalance	Rotating Unbalance	Rotating Unbalance	Sound (Speaker)	Rotating Unbalance
SF4 	C-Shaped Grip	Metal Hook	2-Finger Gripper	Snap Clamp	C-Shaped Grip	Metal Hook	2-Finger Gripper	C-Shaped Grip	Snap Clamp	Metal Hook	2-Finger Gripper	Snap Clamp
SF5 	Mesquite Tree Branch	Mesquite Tree Branch	Mesquite Bunches	Mesquite Bunches	Mesquite Tree Branch	Mesquite Bunches	Mesquite Tree Branch	Mesquite Bunches	Mesquite Tree Branch	Mesquite Tree Branch	Mesquite Bunches	Mesquite Bunches
SF6 	Sweep Net	Heavy-Duty Tarp	(Upside Down) Teepee Tent	(Upside Down) Teepee Tent	Sweep Net	Heavy-Duty Tarp	(Upside Down) Canopy	Sweep Net	Heavy-Duty Tarp	(Upside Down Canopy)	(Upside Down) Teepee Tent	(Upside Down) Canopy
SF7 	Stacking Plastic Crates	Storage Bucket	Wheeled Storage Box	Storage Bucket	Wooden Storage Container	Plastic Clear Storage Container	Heavy Duty Storage Box	Stacking Plastic Crates	Wheeled Storage Box	Heavy Duty Storage Box	Wooden Storage Container	Plastic Clear Storage Container
SF8 	Heavy-Duty Steel Utility Cart	Heavy-Duty Cargo Trailer	Poly Dump Cart	Tractor Trunk	Black Steel 2 Wheel Trailer Container	Black Steel 4 Wheel Trailer Container	Heavy-Duty Steel Utility Cart	Poly Dump Cart	Heavy-Duty Cargo Trailer	Heavy-Duty Steel Utility Cart	Black Steel 2 Wheel Trailer Container	Black Steel 4 Wheel Trailer Container

QUAL EVAL	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)
Cost	7	6	7	10	9	5	5	7	6	8	9	4
Weight	6	5	1	10	9	8	6	1	2	3	4	2
Power	10	5	10	10	10	10	10	10	10	10	5	10
Quality	10	5	5	8	5	5	8	5	5	10	5	5
Safety	10	5	10	10	10	10	10	10	10	10	5	10
Ergonomic	10	10	10	5	5	10	5	10	10	5	5	5
Assembly	4	3	5	5	4	8	3	4	3	6	5	6
Life-Cycle	1	3	2	2	1	3	10	1	3	10	2	10
Total	58	42	50	60	53	59	57	48	49	62	40	52
Conclusion	Strengths: Arduino Uno (already have), recommended ESC, compatible funnel-storage-cart combination. Weaknesses: Sweep net material might tear, gripper cannot induce bending motion of beans (side to side)	Strengths: Arduino Uno (already have), recommended ESC, equiped with unadjustable mounts (neutral). Heavy duty tarp, while more expensive, is more durable and spans further. Weaknesses: Poor storage method (a bucket) for both transportability and protection against the environment.	Strengths: Arduino Uno (already have), gripper adjusts to branch size, compatible funnel-storage-cart combination; teepee tent covers large funnel area, storage has wheels for easy transfer to larger bin, large transport. Weaknesses: Not the recommended ESC, cart may be too big. Two finger gripper will require additional electronic components.	Strengths: Arduino Uno (already have), recommended ESC, metal snap-clamp is good for transmitting vibrations, teepee tent covers large funnel area, storage has handle for easy transfer to larger bin. Weaknesses: Tractor Trunk requires tractor vehicle, relatively small capacity, plastic cart (not ideal).	Strengths: Arduino Nano (small scale), compatible funnel-storage-cart combination. Weaknesses: Not the recommended ESC, storage box is relatively small compared to other solutions, trailer requires vehicle.	Strengths: Arduino Nano (small scale), hook is simple and easy to hook on to branch, Heavy duty tarp, while more expensive, is more durable and spans further. Weaknesses: Plastic Bin for storage (cheap), trailer requires vehicle.	Strengths: Arduino Nano (small-scale), recommended ESC, canopy funnel provides large funnel area, storage box is tough, weather resistant, cart is mobile, and siderails can be put down. Weaknesses: Cart is not that big, motor may be difficult to attach to gripper.	Strengths: Arduino Nano (small scale), compatible funnel-storage-cart combination; large crates for storage, poly dump cart has large capacity. Weaknesses: Not the recommended ESC, sweep net is capable of tearing.	Strengths: Arduino Nano (small scale), compatible funnel-storage-cart combination; large crates for storage, poly dump cart has large capacity. Weaknesses: Not the recommended ESC, sweep net is capable of tearing.	Strengths: Arduino Nano is a powerful yet lightweight and relatively cheap method of controlling the electronic components. The brushless ESC controlling rotating unbalance motor will provide strong vibrations without risking ear damage. Metal hook is easy to set up requiring no electronic components. Weaknesses: metal hook is not adjustable.	Strengths: Arduino Nano (small scale), compatible funnel-storage-cart combination. Weaknesses: not the recommended ESC, storage box is relatively small compared to other solutions, trailer requires vehicle. The 2-finger gripper requires additional electronic components, meaning cost is lower.	Strengths: Arduino Nano (small scale), equiped with metal snap clamp, canopy has large funnel area. Weaknesses: Plastic Bin for storage (cheap), trailer requires vehicle.
DECISION	CONSIDER	DO NOT CONSIDER	DO NOT CONSIDER	CONSIDER	CONSIDER	CONSIDER	CONSIDER	DO NOT CONSIDER	DO NOT CONSIDER	CONSIDER	DO NOT CONSIDER	DO NOT CONSIDER

ROUND 2	CV1	CV4	CV5	CV6	CV7	CV10
SF1	 Arduino Uno	 Arduino Uno	 Arduino Nano	 Arduino Nano	 Arduino Nano	 Arduino Nano
SF2	 FlyFun 80A Opto Brushless ESC	 FlyFun 80A Opto Brushless ESC	 RC Brushless ESC 80A	 LiPolice Brushless ESC 80A-Opto	 FlyFun 80A Opto Brushless ESC	 FlyFun 80A Opto Brushless ESC
SF3	 Rotating Unbalance	 Rotating Unbalance	 Rotating Unbalance	 Rotating Unbalance	 Rotating Unbalance	 Rotating Unbalance
SF4	 C-Shaped Grip	 Snap Clamp	 C-Shaped Grip	 Metal Hook	 2-Finger Gripper	 Metal Hook
SF5	 Mesquite Tree Branch	 Mesquite Bunches	 Mesquite Tree Branch	 Mesquite Bunches	 Mesquite Tree Branch	 Mesquite Tree Branch
SF6	 Sweep Net	 (Upside Down) Teepee Tent	 Sweep Net	 Heavy-Duty Tarp	 (Upside Down) Canopy	 (Upside Down Canopy)
SF7	 Stacking Plastic Crates	 Storage Bucket	 Wooden Storage Container	 Plastic Clear Storage Container	Heavy Duty Storage Box	Heavy Duty Storage Box
SF8	Heavy-Duty Steel Utility Cart	Tractor Trunk	Black Steel 2 Wheel Trailer Container	Black Steel 4 Wheel Trailer Container	Heavy-Duty Steel Utility Cart	Heavy-Duty Steel Utility Cart

QUAL EVAL	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)
Cost	7	10	9	5	5	8
Weight	6	10	9	8	6	3
Power	10	10	10	10	10	10
Quality	10	8	5	5	8	10
Safety	10	10	10	10	10	10
Ergonomic	10	5	5	10	5	5
Assembly	4	5	4	8	3	6
Life-Cycle	1	2	1	3	10	10
Total	58	60	53	59	57	62
Conclusion	Strengths: Arduino Uno (already have), recommended ESC, compatible funnel-storage-cart combination. Weaknesses: Sweep net material might tear, gripper cannot induce bending motion of beans (side to side)	Strengths: Arduino Uno (already have), recommended ESC, metal snap-clamp is good for transmitting vibrations, teepee tent covers large funnel area, storage has handle for easy transfer to larger bin. Weaknesses: Tractor Trunk requires tractor vehicle, relatively small capacity, plastic cart (not ideal).	Strengths: Arduino Nano (small scale), compatible funnel-storage-cart combination. Weaknesses: Not the recommended ESC, storage box is relatively small compared to other solutions, trailer requires vehicle.	Strengths: Arduino Nano (small scale), hook is simple and easy to hook on to branch, Heavy duty tarp, while more expensive, is more durable and spans further. Weaknesses: Plastic Bin for storage (cheap), trailer requires vehicle.	Strengths: Arduino Nano (small-scale), recommended ESC, canopy funnel provides large funnel area, storage box is tough, weather resistant, cart is mobile, and siderails can be put down. Weaknesses: Cart is not that big, motor may be difficult to attach to gripper.	Strengths: Arduino Nano is a powerful yet lightweight and relatively cheap method of controlling the electronic components. The brushless ESC controlling rotating unbalance motor will provide strong vibrations without risking ear damage. Metal hook is easy to set up requiring no electronic components. Weaknesses: metal hook is not adjustable.
DECISION	**DO NOT CONSIDER**	**CONSIDER**	**DO NOT CONSIDER**	**CONSIDER**	**DO NOT CONSIDER**	**CONSIDER**

ROUND 3	CV4	CV6	CV10
SF1	 Arduino Uno	 Arduino Nano	 Arduino Nano
SF2	 FlyFun 80A Opto Brushless ESC	 LiPolice Brushless ESC 80A-Opto	 FlyFun 80A Opto Brushless ESC
SF3	 Rotating Unbalance	 Rotating Unbalance	 Rotating Unbalance
SF4	 Snap Clamp	 Metal Hook	 Metal Hook
SF5	 Mesquite Bunches	 Mesquite Bunches	 Mesquite Tree Branch
SF6	 (Upside Down) Teepee Tent	 Heavy-Duty Tarp	 (Upside Down Canopy)
SF7	 Storage Bucket	 Plastic Clear Storage Container	 Heavy Duty Storage Box
SF8	 Tractor Trunk	 Black Steel 4 Wheel Trailer Container	 Heavy-Duty Steel Utility Cart

QUAL EVAL	SCORE (1-10)	SCORE (1-10)	SCORE (1-10)
Cost	10	5	8
Weight	10	8	3
Power	10	10	10
Quality	8	5	10
Safety	10	10	10
Ergonomic	5	10	5
Assembly	5	8	6
Life-Cycle	2	3	10
Total	60	59	62
Conclusion	Strengths: Arduino Uno (already have), recommended ESC, metal snap-clamp is good for transmitting vibrations, teepee tent covers large funnel area, storage has handle for easy transfer to larger bin. Weaknesses: Tractor Trunk requires tractor vehicle, relatively small capacity, plastic cart (not ideal).	Strengths: Arduino Nano (small scale), hook is simple and easy to hook on to branch, Heavy duty tarp, while more expensive, is more durable and spans further. Weaknesses: Plastic Bin for storage (cheap), trailer requires vehicle.	Strengths: Arduino Nano is a powerful yet lightweight and relatively cheap method of controlling the electronic components. The brushless ESC controlling rotating unbalance motor will provide strong vibrations without risking ear damage. Metal hook is easy to set up requiring no electronic components. Weaknesses: metal hook is not adjustable.
DECISION	**DO NOT CONSIDER**	**DO NOT CONSIDER**	**CONSIDER**

FINAL	CV10
SF1	 Arduino Nano
SF2	 FlyFun 80A Opto Brushless ESC
SF3	 Rotating Unbalance
SF4	 Metal Hook
SF5	 Mesquite Tree Branch
SF6	 (Upside Down Canopy)
SF7	 Heavy Duty Storage Box
SF8	 Heavy-Duty Steel Utility Cart

QUAL EVAL	SCORE (1-10)
Cost	8
Weight	3
Power	10
Quality	10
Safety	10
Ergonomic	5
Assembly	6
Life-Cycle	10
Total	62
Conclusion	Strengths: Arduino Nano is a powerful yet lightweight and relatively cheap method of controlling the electronic components. The brushless ESC controlling rotating unbalance motor will provide strong vibrations without risking ear damage. Metal hook is easy to set up requiring no electronic components. Weaknesses: metal hook is not adjustable.
DECISION	**CONSIDER**