S.No	Function	Component Used	Power Consumption	Working Time per Charge	Remarks
1	Base Movement	4 × 12V 60 RPM DC Motors	~20W total	~2.5 hours	Covers ~300–350 m per full charge
2	Ploughing	1 × 12V 100 RPM DC Motor	~15W	~2.8 hours	Runs parallel with base movement
3	Seed Dropping	1 × 5V MG996R Servo Motor	~2.5W	Low duty cycle usage	Intermittent use; negligible impact on battery
4	Fertilizer Dropping	1 × 5V MG996R Servo Motor	~2.5W	Low duty cycle usage	Intermittent use; negligible impact on battery
5	Soil Closing (Crushing)	Rubber Closing Mechanism	—	Passive Operation	No power required; uses mechanical drag
6	Water Sprinkling	1 × 12V Mini DC Water Pump (~3L/min)	~12W	Operates ~3 hours	1.5 L tank lasts ~30 min per fill
7	Medicine Fertilizer Mixing	1 × 12V DC Mixing Motor	~10W	Operates ~5 mins	Before the water sprinkling
8	IoT and Microcontroller	ESP32 + Sensors	~2W	Entire operation span	Continuous data sync with Blynk App
9	Battery Details	3S.3P. Lithium-ion (2Ah × 3 = 6Ah at 11.1V)	—	Up to 2.5–3 hrs continuous	With 20A BMS protection
10	Solar Charging (Robot at Rest)	12V, 10W Solar Panel	~5–6 hrs full charge	Charges ~6Ah Battery in 5–6 hrs	Sunny day with 1.5A charging current