



Comparative Case Study on Irrigation Efficiency

Traditional Motor Operation vs Dcon Ag M1 PRO Automatic Motor Controller

1. Introduction

Efficient irrigation plays a vital role in improving agricultural productivity, especially in water-intensive crops like sugarcane. Traditional irrigation methods often rely on manual motor operation, leading to inefficiencies in labour, water usage, and energy consumption.

This case study evaluates the effectiveness of the **Dcon Ag M1 PRO Automatic Motor Controller**, a smart irrigation solution that enables remote and automated motor control, compared to conventional practices.

2. Objective

To compare traditional irrigation practices with automated irrigation using Dcon Ag M1 PRO based on:

- Labour cost
- Water usage
- Electricity consumption
- Crop performance

Author & Study Details

This study was conducted by **Kaliraj and team** from **March 1, 2026 to April 30, 2026**, focusing on evaluating irrigation efficiency and performance improvements through automation.

3. Farm Profile

- **Crop:** Sugarcane
- **Total Area:** 5 Acres
- **Study Division:**
 - 2.5 Acres – Traditional Method
 - 2.5 Acres – Dcon Ag M1 PRO Controlled

4. Product Overview: Dcon Ag M1 PRO

The Dcon Ag M1 PRO is an automatic motor starter that allows farmers to operate irrigation pumps remotely through mobile applications. It offers multiple operating modes (Cycle, Clock, Run, Auto), real-time monitoring, and advanced safety protections, ensuring efficient and reliable irrigation management.

5. Methodology

Both plots were maintained under identical conditions (soil, crop variety, and water source). The study was conducted over a complete irrigation cycle, and performance metrics were recorded and compared.

6. Parameter-wise Comparative Analysis

6.1 Labour Cost Analysis

Metric	Traditional Method (2.5 Acres)	Dcon Ag M1 PRO (2.5 Acres)
Labour Visits per Day	3 times	1 (remote operation)
Monthly Labour Requirement	High	Low
Monthly Labour Cost	15,000	7,500
Dependency on Labour	High	Minimal

Insight:

Automation reduces the need for frequent field visits, resulting in significant labour cost savings.

6.2 Water Usage Analysis

Metric	Traditional Method	Dcon Ag M1 PRO
Monthly Water Usage	~4,50,000 Litres	~3,00,000 Litres
Irrigation Control	Manual	Scheduled & Automated
Over-Irrigation	Frequent	Eliminated
Water Efficiency	Low	High

Insight:

Precise scheduling and automation lead to up to **33% water savings**.

6.3 Electricity Consumption Analysis

Metric	Traditional Method	Dcon Ag M1 PRO
Motor Run Time	6.5 hrs/day	3.8 hrs/day
Monthly Electricity Usage	~900 units	~700 units
Energy Efficiency	Low	High
Power Wastage	High	Minimal

Insight:

Optimized motor operation reduces unnecessary runtime, saving **20-25% electricity**.

6.4 Irrigation Control & Monitoring

Metric	Traditional Method	Dcon Ag M1 PRO
Control Method	Manual	Mobile App (Remote)
Scheduling	Not Available	Cycle, Clock, Run, Auto
Monitoring	Not Available	Real-time
Automation Level	None	High

Insight:

Dcon Ag M1 PRO provides complete control and visibility, improving decision-making.

6.5 Crop Yield & Quality

Metric	Traditional Method	Dcon Ag M1 PRO
Yield (Tons/Acre)	30–35 tons	40–48 tons
Crop Growth Uniformity	Moderate	High
Produce Quality	Inconsistent	Improved
Productivity	Average	High

Insight:

Consistent irrigation results in **up to 40% higher yield** and better crop quality.

6.6 Risk & Safety Analysis

Metric	Traditional Method	Dcon Ag M1 PRO
Dry Run Risk	High	Very Low
Motor Damage Risk	High	Protected
Safety Features	Not Available	Advanced Protection
System Reliability	Moderate	High

Insight:

Built-in protections ensure safer and longer motor life.

7. Overall Comparison

Parameter	Traditional Method	Dcon Ag M1 PRO
Labour Efficiency	Low	High
Water Efficiency	Low	High
Energy Efficiency	Low	High
Automation	None	Advanced
Monitoring	Not Available	Real-time
Yield	Moderate	High
Profitability	Limited	Significantly Improved

8. Key Findings

- Labour dependency reduced by up to **30%**
- Water savings achieved up to **33%**
- Electricity consumption reduced by **20–25%**
- Crop yield improved up to **40%**
- Overall farm efficiency significantly increased

9. Conclusion

The comparative study clearly indicates that the **Dcon Ag M1 PRO Automatic Motor Controller** outperforms traditional irrigation methods across all key parameters. By enabling automation, remote control, and efficient resource utilization, it transforms conventional farming into a smart and sustainable system.

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