

**Report of Installation of Second Lysimeter in Project on  
“Determination of crop coefficients for major crops by Lysimetric  
studies” at Mahatma Phule Krishi Vidyapeeth, Rahuri**

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**Title of the project** : Determination of crop coefficients for major crops by Lysimetric studies

**Location** : Experimental Farm, AICRP on Irrigation Water Management, Mahatma Phule Krishi Vidyapeeth, Rahuri

**Project duration** : Four years

**Total outlay** : Rs. 31.43 lakhs

**Investigators:**

**Principal Investigator** : Dr. A.A. Atre, Professor of SWCE, Dr. ASCAET, and Procurement Officer, CAAST-CSAWM, MPKV, Rahuri

**Co-Principal Investigator** : Dr. M.G. Shinde, Professor of SWCE, Dept. of Agril Engineering and Co-PI CAAST-CSAWM, MPKV, Rahuri  
Dr. S.A. Kadam, Associate Professor of IDE, Dept. of Agril Engineering and Member, CAAST-CSAWM, MPKV, Rahuri

**Coordinator for the project for three universities** : Dr. S. D. Gorantiwar, Head, Dept. of Agril. Engineering and PI-CAAST-CSAWM, MPKV, Rahuri  
(MPKV, Rahuri; Dr PDKV, Akola and VNMKV, Parbhani)

## Installation Report

In the project on “Determination of crop coefficients for major crops by Lysimetric studies” at Mahatma Phule Krishi Vidyapeeth, Rahuri, two lysimeters were to be installed after procurement by PoCRA centrally. One lysimeter was delivered on the field on July 20, 2021. However, due to incessant rains, actual installation of the lysimeter at 19.32295°N and 74.652303°E was done on November 15-16, 2021.

Second lysimeter was delivered on field on April 5, 2023 and its installation was done on April 11-12, 2023 at Experimental Farm, AICRP on Irrigation Water Management, MPKV, Rahuri (19.215640°N and 74.383772°E). The specifications of the lysimeter delivered and installed at Experimental Farm, AICRP on Irrigation Water Management are as per the delivery chalan (Table 1).

**Table 1. Specifications of Lysimeter**

(i)	Inner box	Inner tank size 1500mm ×1500mm × 1000mm of Stainless steel.
(ii)	Outer box	Outer tank size 1600mm ×2200mm × 1250mm of Stainless steel.
(iii)	Weighing Scale	Size 1.5 m x 1.5 m, High precision type, class II weighing scale indicator, capacity of 1000 kg and least count of 10 g.
(iv)	Perforated plate	Corrosion resistant chicken type stainless steel mesh screen of 2 mm thickness (grade 304 SS) at about 10 cm from bottom.
(v)	Control Panel Box	Size 400 x 380 x 260 mm made of corrosion free material.
(vi)	GI Pipe	Pipe for making connection for drain water.
(vii)	Solar Panel Frame	Frame made of MS angle for fitting the Solar panel for the electric supply for data collection and data transmission.
(viii)	Drain tank	Stainless steel tank

The lysimeter is installed by using the standard installation procedure, calibrated properly and demonstrated successfully. Step-by-step installation process is presented in following photographs.



**Fig. 1. Layout of digging site**



**Fig. 2. Digging of pit and heave of soil from pit**



**Fig. 3. Layer wise heaves of soil**



**Fig. 4. Measuring the depth of installation pit**



**Fig. 5. 1m × 1m pit from which soil was excavated layerwise to fill in inner tank of lysimeter.**



**Fig. 6. Levelling the bottom of installation pit**



**Fig. 7. Bricks foundation below lysimeteras leveled platform**



**Fig. 8. Transportation of Lysimeter to site**



**Fig. 9. Lysimeter placed on the foundation in pit**



**Fig. 10. Placing of mesh at the bottom of inner tank to prevent washing out of soil through drain**



**Fig. 11. Layer wise soil refilling & compaction and sensor installation in the inner tank of lysimeter**



**Fig. 12. Completion of Soil filling in the inner tank of Lysimeter**



**Fig. 13. Placement of Drain tank**



**Fig. 14. Final installation of lysimeter and control panel**



**Fig. 15. Saturated Lysimeter after successful installation and calibration**

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