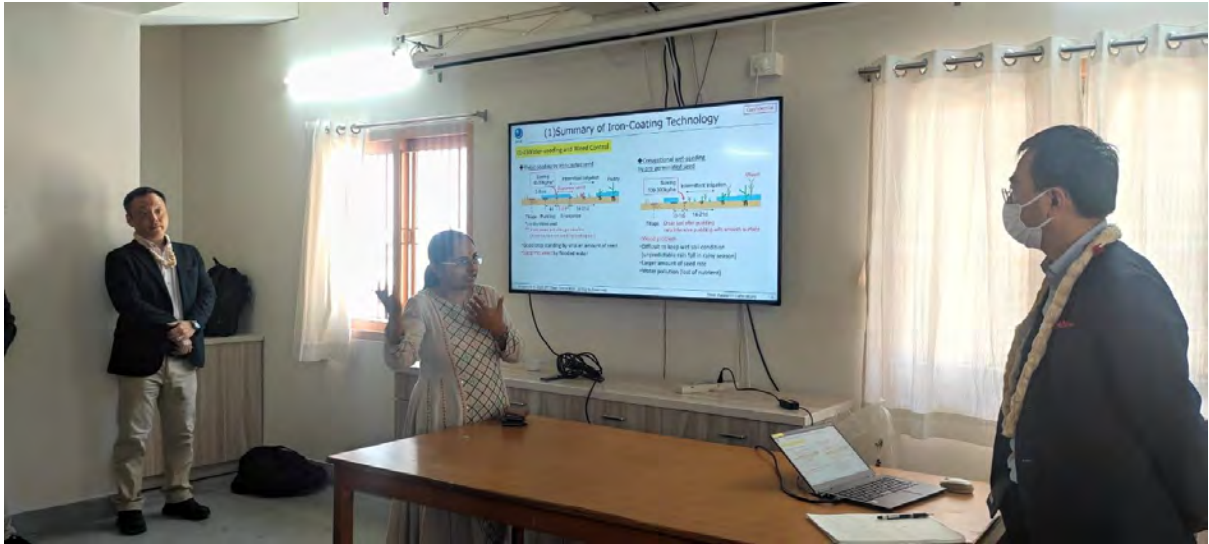


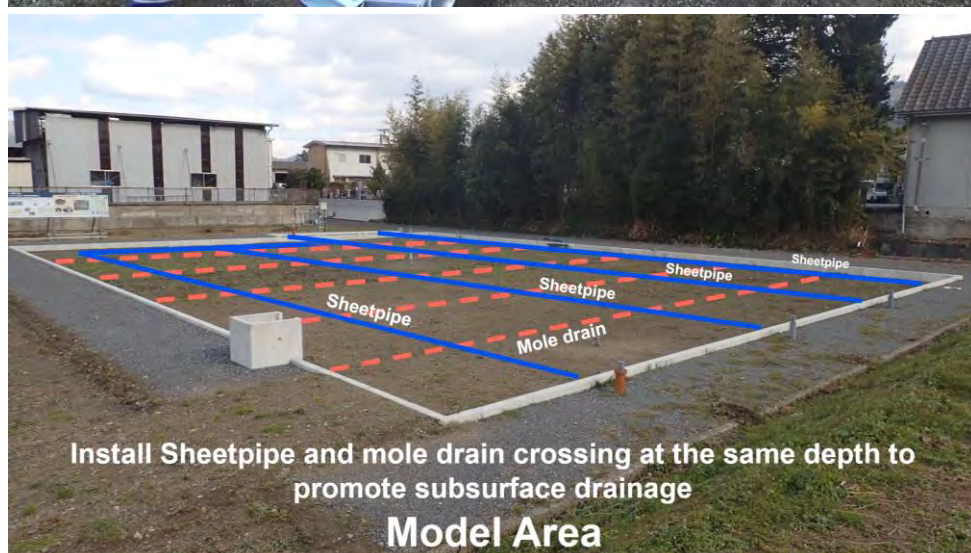
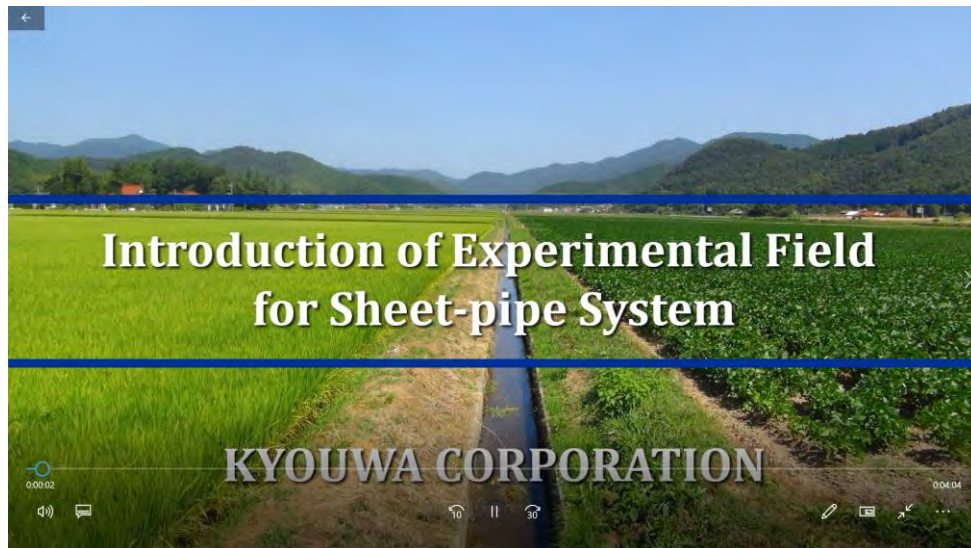


● JFEスチールによる粉美人デモンストレーション (2023年1月25日)





- 協和建設工業シートパイプシステムデモンストレーション動画および資料提供
(2022年12月22日)



2. Overview of Sheet-pipe System

- Technology to manage drainage of agricultural land by installing Sheet-pipes, which is a dedicated drain pipe, in shallow subsoil of farmland horizontally.
- Improving drainage of farmland, supplying air to the ground by providing a vent, and thus encouraging crop growth.



Comparison before and after installation in soybean fields (Yamaguchi, Japan)

Sheet-pipe System consists of unique materials, construction process and simplified management method.

(Procedure for installing Sheet-pipe)



3. Features of the Sheet-pipe



Sheet-pipe is in a shape of sheet before installation and will be transformed to a shape of pipe at the installation under the ground by using PLAPIPER (Pipe-shaping equipment).

Material: High density polyethylene
 • Weather resistance, High shock resistance
 • Acid resistance, alkali resistance

- Long-term durability
- Weight: 17kg/100m Volume: 0.03m³/100m

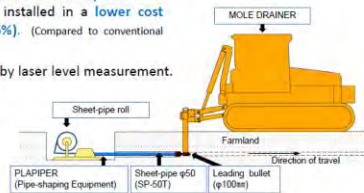
Transportation cost: **1/20** (Compared to conventional pipe)

Diameter	Thickness	Length
500mm	1.0mm	100m / roll

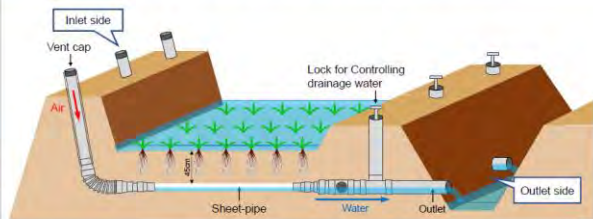
4. Installation Method with MOLE DRAINER

Sheet-pipe will be installed being drawn into soil by MOLE DRAINER, dedicated equipment for Sheet-pipe installation.

- Excavation & backfilling of farmland is **not required**.
- Sheet-pipe System could be installed in a **lower cost (50%) and shorter time (25%)**. (Compared to conventional installation (excavation – backfilling))
- **High precision of installation** by laser level measurement.
- MOLE DRAINER is **operable even in a wetland**, as the ground contact pressure is extremely less.



5. Configuration of Sheet-pipe System



Control drainage according to cropping plan by opening/closing the lock on the outlet side.

6. Effects

• Effects on crop productivity

- Improved production (15% - 20% yield increase)
- Sustainable salt removal using rainfall and irrigation water (Removal of salt, over-fertilizer and over-pesticide damage)

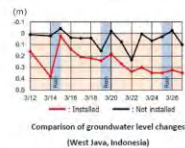


• Easy conversion between paddy and field

- Crop cultivation utilizing paddy fields (multi cropping)
- Improvement of wetland

• Climate change countermeasures

- Due to climate change, rainfall may vary each year. A flexible water management system is necessary, of which Sheet-pipe System can play an important role in it.



• Synergistic effects with other technologies

6. Effects

- Yamaguchi Prefecture Shunan Agriculture, Forestry and Fisheries Office Rural Development Department
 Drainage conditions in sheet pipe demonstration field (Hikari-shi, Yamaguchi)



In case of rainfall, the fields are not submerged and the ground surface can be drained and dried in a short period of time.

*Source : Prepared based on the Yamaguchi Prefecture Shunan Agriculture, Forestry and Fisheries Office Rural Development Department website data