

# Shi SLOPEHELPER Fertilizer

## Application of granular/pellet fertilizers

Slopehelper's advanced pneumatic fertilization system ensures maximum efficiency, precise nutrient distribution, and minimal waste.

Today, the market offers two main fertilizer distribution concepts:

- **Mechanical distribution**, where granules/pellets are spread using mechanical impact, leading to uneven coverage.
- **Pneumatic distribution**, where granules/pellets are air-driven, ensuring precise and uniform fertilizer application.

**Pneumatic systems** are considered the **most advanced** as they provide **optimal distribution uniformity** in **targeted fertilization zones**, maximizing **efficiency** and **minimizing waste**.



The **Slopehelper Fertilizer** is an **innovative pneumatic fertilizing system**, designed as a **hinged attachment**, consisting of **two key modules**:

1. **Fertilizer Tank with Control & Pneumatic System** – Stores and regulates **fertilizer flow**, ensuring **precise distribution**.
2. **Distribution System** – **Air-driven outlets** deliver **fertilizer exactly where needed**, improving **nutrient absorption** and reducing **losses**.

This **fully automated precision fertilization system** enhances **efficiency, crop health**, and **sustainability**, making it an **ideal solution** for modern **orchard** and **vineyard management**.

**100% Autonomous | 100% Electric**

## Features & Benefits

### **No Operator Exposure to Fertilizers – Fully Autonomous Application**

Fertilizers contain active chemical components that can pose serious health risks to operators, requiring protective gear for manual or tractor-assisted application. In conventional systems, the tractor driver is directly exposed to airborne particles, dust, and potential chemical hazards during distribution.

The **Slopehelper Fertilizer** is a **fully autonomous system**, **eliminating the need** for an **operator inside the application zone**. By functioning **without human intervention**, it:

- **Removes health risks** associated with chemical exposure.
- **Eliminates the need for protective equipment**, **reducing operational costs**.
- **Ensures a safer working environment**, making **fertilizer application efficient** and **risk-free**.

This **next-generation autonomous fertilization technology** prioritizes both **operator safety** and **precision farming**, ensuring **optimal fertilizer distribution** with **zero human exposure**.

### **Equal Distribution of Granules, Pellets, and Seeds**

The **Slopehelper Fertilizer** ensures **high-precision, uniform distribution** of **mineral granules**, while also **seamlessly handling pellets and seeds**. Unlike conventional systems that may cause uneven spread patterns, the **advanced pneumatic distribution technology** guarantees **equal dispersion** across the **targeted area**.

This **versatile design** allows for **efficient fertilization and seeding**, maximizing **nutrient availability, crop uniformity**, and **overall plantation productivity**. Whether distributing **granules, organic pellets, or cover crop seeds**, the **Slopehelper Fertilizer** ensures **consistent application with minimal waste**, optimizing both **yield and resource efficiency**.





## 1.1m<sup>3</sup> High-Capacity Tank for Extended Operation

The **Slopehelper Fertilizer** is equipped with a **large 1.1m<sup>3</sup> tank**, securely installed on the **cargo platform** of the **Slopehelper Base Platform**. Its **gravity-stabilized design** ensures **safe and stable operation**, even on **slippery or uneven terrain**, preventing any risk of **imbalance** while carrying a **heavy payload**.

- **Maximum distribution** allows coverage of nearly **3 hectares** in a **single fill**, reducing **refill frequency**.
- **Moderate application** supports an **entire daily shift**, maximizing **efficiency** and minimizing **downtime**.

This **high-capacity tank design** significantly **improves productivity**, reduces **operational interruptions**, and ensures **continuous, precision fertilization** for **large-scale vineyard and orchard management**.



## 8 Switchable Pneumatic Channels for Precision Fertilization

The **Slopehelper Fertilizer** is equipped with **8 independent pneumatic channels**, ensuring **precise and efficient fertilizer distribution** across **plantation passages**.

The **switchable channel system** allows growers to **individually control each channel**, enabling **customized fertilizer application** based on **specific needs**.

This flexibility provides:

- **Targeted distribution** – Ability to **fertilize only in passage areas** or **only in root zones**.
- **Optimized fertilizer usage** – **Reduces waste** by applying **nutrients exactly where needed**.
- **Adaptability to various plantation structures** – Adjusts **distribution settings** depending on **crop type, growth stage, or soil conditions**.

This **advanced pneumatic system** ensures **efficient, resource-saving**, and **environmentally friendly fertilization**, maximizing **crop health** and **productivity** while **reducing operational costs**.



## Precision Dosators & Venturi Pipe System for Efficient Fertilization

The **Slopehelper Pneumatic Fertilizer** utilizes an **innovative dosing system** that combines **precision dosators** for **granules/pellets** with **Venturi pipes**, ensuring **high-efficiency fertilizer distribution**.

Unlike conventional pneumatic fertilizers, where distributed components lose momentum at the end of the pipeline, the **Slopehelper system accelerates the granules before distribution**. This is achieved by:

- **Dosing components precisely** into the **Venturi pipe**, ensuring **controlled and measured application**.
- Using **compressed air to accelerate the granules**, carrying them efficiently through the **distribution pipes**.
- **Maintaining high-speed flow** until the point of application, ensuring **uniform and effective fertilizer spread** across the **target area**.

This **advanced pneumatic solution** provides better **fertilizer penetration**, more **even distribution**, and **higher operational efficiency**, making it **superior** to conventional pneumatic fertilization systems.



## Speed-Synchronized Dosing for Precise Fertilization

For effective fertilization, it is crucial to maintain a **consistent distribution per surface area**. In conventional systems, this is challenging because the tractor driver must manually regulate speed, often leading to uneven fertilizer application.

The **Slopehelper Fertilizer** eliminates this issue with **automated synchronization** between **dosing** and the **Base Platform's speed**. This ensures:

- **Consistent fertilizer distribution**, regardless of **speed variations**.
- **Precision application**, preventing **under- or over-fertilization**.
- **Fully automated operation**, removing **human error** and ensuring **maximum efficiency**.

This **advanced speed-based dosing system** guarantees **uniform nutrient application**, optimizing **crop health**, **reducing waste**, and improving overall **plantation productivity**.





## Centralized Distribution System with Foldable Side Carriers

The **Slopehelper Fertilizer** features a **three-segment distribution system**, consisting of:

1. A **central segment** for **core fertilizer application**.
2. **Two foldable side segments**, adjustable via **actuators** for **precision placement**.

This **flexible design** allows growers to **adjust distribution zones**, ensuring that **fertilizer is applied as close to the root areas** as possible.

The **foldable side carriers** provide:

- **Adaptability** to different **row widths** and **plantation layouts**.
- **Precision placement**, improving **nutrient absorption** and reducing **waste**.
- **Compact folding** for **transport and maneuverability**, preventing damage in **narrow vineyard rows**.

This **innovative distribution system** enhances **efficiency**, **flexibility**, and **precision**, making the **Slopehelper Fertilizer** an optimal solution for **modern orchard** and **vineyard management**.



## Suspended Foldable Side Distributors for Damage Prevention

The **Slopehelper Fertilizer** is designed with **suspended foldable side distributors**, ensuring **safe and precise fertilizer application near tree trunks**. While these side carriers operate close to the trunks, their **special suspension system** allows them to **gently slide over obstacles** upon contact, preventing damage to both the trees and the equipment.

This intelligent **suspension mechanism** provides:

- **Automatic obstacle bypassing**, reducing **impact force** on trunks.
- **Damage prevention** for both the **distributors** and **plantation infrastructure**.
- **Seamless adaptation** to **terrain variations**, ensuring uninterrupted **fertilizer application**.

With this **advanced safety feature**, the **Slopehelper Fertilizer** guarantees **smooth and risk-free operation**, even in **dense orchards** and **vineyards** with **irregular row spacing**.

## Technical Specifications

DIMENSIONS	VALUE
Height	2720 mm
Length	2315 mm
Width	2282 mm
Weight	195 kg
WORKING DIMENSIONS	VALUE
Working width	Up to 3,1 m
Dosage (Pelletized fertilizers)	500-2000 kg/Ha
Dosage (Granulized fertilizers)	250-800 kg/Ha
Tank volume	1100 l
Sound power level	60 dB
Operation speed	Up to 4 km/h



# Technical Specifications

## GENERAL SPECIFICATIONS

## VALUE

Compatibility

SH.056 Slopehelper

Motor

Brush-less motor - BLDC

