



**CROP CARE
SOLUTIONS**

CROP CARE SOLUTIONS: GREENHOUSE APPLICATION

New static foliar application system.

Cost-effective. Time-saving. Environmentally-friendly.

NAANDANJAIN
A JAIN IRRIGATION COMPANY

Greenhouses are on the rise!! In the year 2015 alone we saw a 20% increase in the area covered by greenhouses globally. Climate change and the demand for fresh produce all year round are the main reasons of this trend, which is evident all over the world—from Latin America, North Europe and Africa to the Middle East.

Increasing costs of manpower, efficient use of land and chemicals, demand for less chemical applications, rigorous regulations and concern for farmers' safety are the main factors that have led us at NDJ to apply our extensive experience in micro-irrigation and climate control to the field of foliar application, and to come up with the Crop Care Solution for Greenhouses.

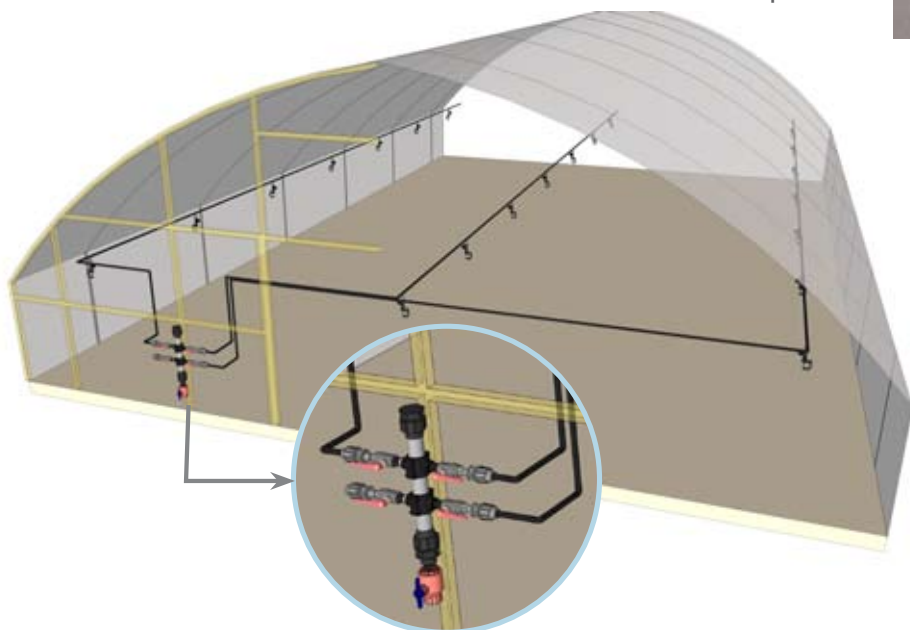


THE CONCEPT

The static foliar application system is custom designed for each greenhouse/tunnel. The injection of the solution is done with a special high pressure DSM machine (see pic. 2) outside of the greenhouse. Then, through the Central Connection Point (CCP) (see pic. 3), the solution is distributed to laterals installed at the height of the greenhouse, facilitating the application of fertilizers and crop protection (pesticides, insecticides and fungicides) with high uniformity and at a high pressure to ensure maximum coverage. During this process, there is no need for the farmer to enter the greenhouse.



pic. 2



pic. 2

Central Connection Point (CCP)

The injection is done by the high-tech DSM machine or spacial injection system. The advantage of this sprayer is that it operates at high pressures that are fully-controlled. The DSM also injects air at the end of the application in order to clean the system. Surplus solution is returned to the tank. Nothing goes to waste.



HADAR RED SPRAYER

Mist sprayer with new high pressure nozzle, ensures very small droplets for full coverage and best uniformity with bayonet connectors.



HADAR RED SPRAYER

Unique range rotor with new high pressure nozzle, ensures very small droplets for full coverage and best uniformity with bayonet connectors.

NaanDanJain has developed the Hadar Red micro-sprayer. This micro-sprayer has been specially designed for the system and highly resistant to chemicals and high pressures. Hadar Red comes with our Leakage Prevention Device (LPD), ensuring that all devices will open at the same time, providing maximum uniformity. The LPD also closes all devices instantly when pressure drops, preventing non-uniform dripping of big droplets underneath the micro-sprayer. This strategy also prevents the loss of costly chemicals.

All micro-sprayers are easily installed with NaanDanJain's patented bayonet connectors. These bayonets ensure easy installation and high performance at high pressures.



Old method



New method

OPERATIONAL METHOD

Greenhouses/tunnels are divided to 0.25 ha sections. Each section is connected to a CCP.

Each project is custom designed by our planning department according to the specific needs of the farmer, taking under consideration factors such as: greenhouse length and width; spraying volume; number of applications; type of crop; and common chemicals applied.

In farms with many greenhouses/tunnels, it is possible to design the system so that all CCP are located on a main service road, thus maximizing the efficiency of the spraying process and minimizing machinery movement.

Once connected to the CCP, the injection system injects the solution into the system at high pressure, applying it to the greenhouse quickly and efficiently. It takes approximately 30 minutes to cover 1 hectare, and it can be fully operated by one person.



ADVANTAGES

1. No exposure to chemicals—the operator stands outside the greenhouse during spraying.

2. Time-saving—no need to go back and forth along the greenhouse.

Spraying 1 ha of a horizontal crop with a manual blower sprayer takes approximately 7 hours. With the Crop Care solution, it takes approximately 30 minutes.



7 hours → 30 minutes

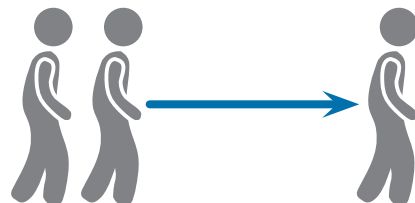
3. Maximizing the cultivation area inside the greenhouse. no need for passageways for maintenance.



4. Maximizing efficiency—thanks to the LPD, chemicals are applied at high uniformity and can be returned to the sprayer.



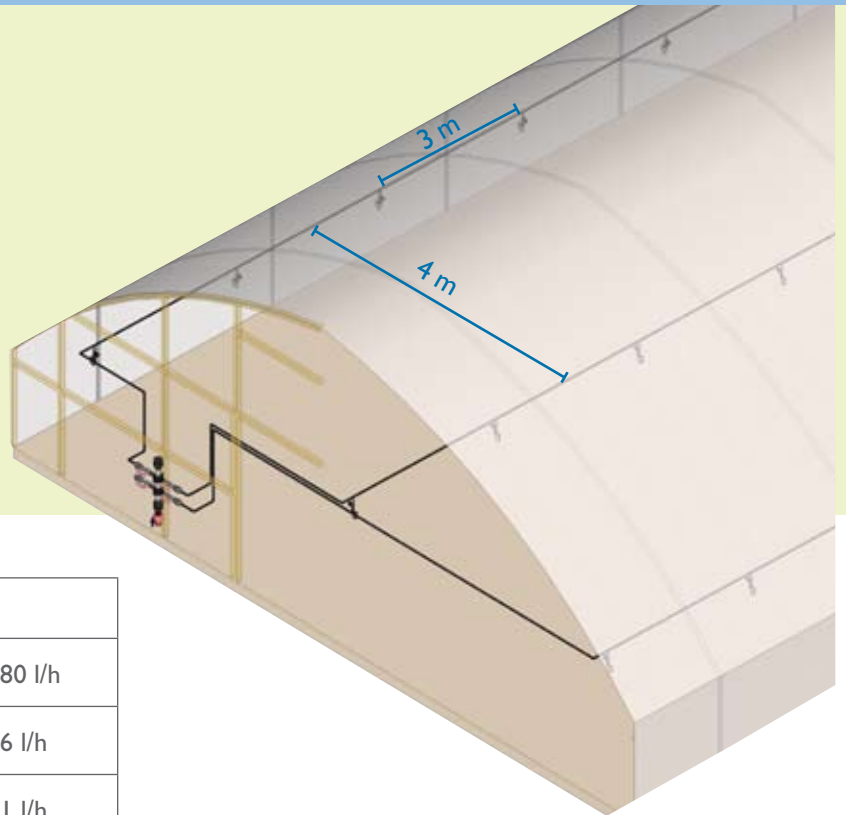
5. Can be fully operated by one person.



By saving time and labor, and making efficient use of costly inputs, the Crop Care Solution saves a lot of money.

TECHNICAL SPECIFICATIONS

- Recommended working pressure: 4-6 bar
- Spacing depends on the greenhouse structure.
Recommended spacing: 3 m x 3 m or 3 m x 4 m.
- Filtration requirements:
 - 130 micron (120 mesh) for nozzles 0.8-1.2 mm
 - 200 micron (80 mesh) for nozzles over 1.3 mm
- Each CCP sprays up to 0.25 ha. A larger greenhouse will be divided into several spraying areas.



Item number	Description	
51R1906	Hadar RED inverted rotor Yellow nozzle - 1.6mm	At 4 bar: 180 l/h
51R1902	Hadar RED inverted rotor Red nozzle - 1.1mm	At 4 bar: 86 l/h
51R190A	Hadar RED inverted rotor Purple nozzle - 1.0mm	At 4 bar: 71 l/h
790253	Super LPD - high pressure bayonet	Opening pressure: 4 bar Closing pressure: 2.4 bar
6560090406	CCP (Central Connection Point)	
497051	Bayonet female base	
497041	Bayonet male	
497031	Bayonet plug	
J67202J1000	Stabilizer 13 cm for suspended stand	



KEY POINTS FOR INSTALLATION

- 3-4 laterals for a 10 m span.
- Hadar RED devices are 2.5-5 m high (above ground).
- 2-3 m between Hadar RED emitters along the lateral.
- A single operation covers up to 0.25 hectare.
- 16 mm PN 6 pipes should be used. (For longer laterals, use 20 mm PN 10.)
- Optional installation: PVC pipes
- Laterals should be properly tensioned to prevent movement due to heat or pressure.
- For higher spacings, use bigger flow rates (yellow nozzle).

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the Crop Care Solution saves a lot of money.**





The NaanDanJain foliar application Crop Care Solution for Greenhouses is cost-effective, time-saving and ready-to-use anytime. It is a unique system in the world, easy to operate, efficient to manage without harming the greenhouse or its content. To learn more about its benefits and how it can benefit your greenhouse, contact us via email: ndjccs@naandanjain.com

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