

4. Installing Sensor Networks

In this section, an overview of the steps involved in setting up a Sensorweb™ network ([Mayim LLC](#), Pittsburgh, PA) is provided. Information on how to set up a Decagon Devices, Inc. sensor network can be found on their website at www.decagon.com.

A. Buying a Decagon system

The control sensor networks that we have described above have been commercialized by Decagon Devices, Inc. However, Decagon ONLY sells equipment through a network of distributors and consultants, since they are an equipment supplier, and do not have the expertise to handle installation and support of a wide range of crops and production situations. Hence, they rely on consultants to provide that information directly to growers, as experts in those specific crops or agricultural sectors.

For more on this, and the benefits of using a consultant to help set up a network, please see [Buying a Decagon System](#), in the [Costs and Benefits](#) module.

B. Field Installation of Nodes and Sensors

Nodes and various sensors can be installed in open production areas (fields) or in greenhouses, to provide information desired by the farmer/grower. Such information for example can be soil moisture status, EC level, soil temperature, irrigation application volumes (from flow meters) etc. In addition, sensor networks usually will have an on-site weather station to provide real-time environmental conditions for the farm. Nodes and sensors can be used in monitoring only mode, to get feedback on existing practices on the farm (e.g. irrigation, fertilization). When required, sensor networks can also be setup to provide irrigation and other control functions by integrating control nodes and solenoids. Detailed information on sensor installation and node configuration, respectively, is given in the modules [Sensor Installation and Calibration](#) and [Using ECH2O Utility Software](#).

C. Setting up Network Components in Office

The Mayim LLC sensor network package includes a rugged fanless computer running a Linux operating system pre-installed with the software program Sensorweb™, and a datastation/radio base with an antenna attached. A monitor, key board and mouse need to be provided separately. When required, the antenna on the radio base can be extended outside to provide better communication with data loggers installed outside using an extended cable.

The steps required to configure all the various network settings in Sensorweb™ are outline in the following sections.