# Percival Scientific Inc. Partners with Indigo Agriculture to Improve Food Production

CASE STUDY

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## SUMMARY

Indigo Agriculture, launched in 2016, is a cutting edge startup in the emerging field of plant microbiome study. Focusing on microbes that have evolved in conjunction with plants over billions of years, this Charleston Massachusetts firm seeks to improve plant health and productivity serving the needs of both producers and consumers by producing more food which is both healthier and more sustainable. Percival Scientific, Inc. was able to partner with Indigo, meeting their unique needs for two tissue culture environmental chambers while keeping pace with the time challenges inherent in the startup world.

## THE PROJECT

Phase one of Indigo's launch involved the construction of a 30,000 square foot office and research laboratory facility at Hood Business Park in Charleston. Included in that project was to be the tissue culture environmental chambers to be used by researchers to plant and grow small plants under highly controlled conditions critical to the experimental efforts that form Indigo's core mission to improve food production for the world through introduction of beneficial microbiome.

## THE SELECTION PROCESS

Already known for their quality product by the Indigo team from the team's prior experience, and known to be capable of working with Indigo's specific needs by virtue of their reputation for customization, Percival Scientific Inc. was one of four vendors selected to receive a Request for Proposal.

What followed was described by Indigo's Construction Manager as "a daunting and very meticulous process of exhaustive analysis that involved on-going questioning of the vendors as well as careful comparisons of the firm's technical capabilities, past experience, and price point." A process which would lead them to conclude that Percival Scientific Inc. was best suited to meet their needs.

## THE CHALLENGES

As with all startups, particularly those having raised large sums of venture capital, time was of the essence. The project not only required a rapid response to the proposal process but also on the delivery timeline once the purchase was made. In addition, the project contained a number of specification changes during the procurement effort which led to multiple pricing requests.

## THE SOLUTION

Percival supplied (2) CU-1014L3 plant tissue culture walk in chambers. Percival's plant tissue culture design uses a unique airflow system that increases uniformity on each shelf while also minimizing condensation on petri dish lids. This is achieved by forcing air down behind a false wall. An air diverter is located beneath each shelf which diverts a portion of the air from behind the false wall to beneath the shelf. The diverter was designed to be adjustable with the turn of a knob which allowed each shelf to be easily adjusted to create uniform conditions from shelf to shelf. The air is then diffused through a screen vertically to the grow environment. This allows the conditioned air to be delivered slowly to the grow environment in a uniform fashion across each shelf and pulls heat created by the light fixtures up and away from the shelf. The air diffuser also acts as an insulated barrier between the shelf and the underlying light fixture which helps to reduce condensation on the dish lids by eliminating heat transferred to the media. Each shelf was also designed so that it could slide out for easier access to the rear portions of the shelf.

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Percival also manufactured the CU-1014L3's for Indigo to be a multi-purpose environment. Fluorescent lighting was provided in an open loop dimmable configuration with a maximum output of approximately 240 umoles. This allows the lighting to be used for applications in tissue culture, but also for the beginning stages of Arabidopsis and other lower light varieties. This combined with approximately 24" of grow height make the space good for both tissue culture and other applications.

Percival was "extremely responsive" during the proposal evaluation process and "they were particularly quick to respond to Indigo's on-going requests for supplemental pricing information as specifications changed during the procurement effort." Due to Percival's ability to build Environmental Control Rooms to any size and configuration, requests for changes and customizations did not delay the project. "Percival's staff were very open and were very collaborative," remarked Indigo's representative, an attitude which was crucial to Indigo choosing Percival as their partner.

## OUTCOMES

Like all projects there would be challenges. Meeting the critical time schedule was foremost among them, and the Percival team was able to deliver their product on time and within the quoted cost, allowing Indigo to move forward with their pioneering research.

*For more information on Percival Scientific plant tissue culture chambers or any other chamber and incubators, please visit www.percival-scientific.com; call 1.800.695.2743 or email, info@percival-scientific.com*