



SPACE USE IN DEEP WINTER GREENHOUSES

SPACE UTILIZATION AFFECTS PROFITABILITY

Previous research on the profitability of deep winter greenhouses (DWGs) found that the most profitable also maximized the use of space (Pesch, 2018). Considering DWGs are relatively expensive, judicious use of space is an important recommendation to operate profitability.

Original Planter Configuration

The Northlands Winter Greenhouse Manual suggested a configuration of hanging planters in equally-spaced rows:



Other Configurations to Maximize Space Use

Early adopters used the original 'equal spacing' set-up. In time, however, growers compressed spacing between rows and planters to maximize space. Extension shared about these configurations at workshops targeting existing and prospective DWG operators.

Bank Configuration

Some growers created 'banks' where three to six rows of hanging planters were placed together with little space between the rows. Growers left between one and three inches between the rows to allow for greens to spill over the planters to some degree. In between the banks was an alleyway that allowed operators to water planters from either side:



Figure 1: Example of bank configuration. Note the use of chains for hanging which use an S-hook on a pole to easily move rows.

Tiered Configuration

Taking the idea of a bank further, Extension documented that some growers have adopted a tiered system which abandoned the hanging set-up altogether for a one where planters sat on racks. Like in the bank configuration, planters had minimal space between one another (1 to 3 inches). Instead of being spaced equally horizontally, however, the planters were arranged in tiers where the lowest row sat nearest the south-facing glazing wall and the highest row sat furthest away with the tiers overlapping one another, but not completely:



Figure 2: Example of tiered configuration with planters with minimal spacing in between on a single plane and overlapping tiers

The tiered configuration allowed for more growing space in the same greenhouse area and growers did not report significant loss in quality or yield due to the tight spacing. One grower who moved from the original hanging planters system to a tiered system more than doubled the number of planters using the same space from 68 to 138 trays.

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