

Title Pitfalls in technology transfer from laboratory to industry
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Abstract

The path from the laboratory to the storage facility is paved with many a pitfall. These are generally unpredictable and when a new technology is being implemented commercially, its failure needs to be studied from every possible standpoint in order to avoid its recurrence. The source of the pitfalls lies in the up-scaling of the size of containers and storage rooms, for which not all the parameters involved have been considered. For example, air circulation and ventilation and their effects on temperature and relative humidity regimes are often ignored in laboratory-scale trials, but are of major importance in commercial storage outcome. Some instances of unexpected commercial outcome following the introduction of new technologies include the appearance of a powdery coating on drenched pears, excessive weight loss of fruit stored in plastic bulk bins and external injury or lack of superficial scald control on apples, following exposure to 1-methylcyclopropene (1-MCP). Three of these cases and their causes will be described in detail, suggesting that a physical study of the dynamics of air and liquid movement might lead to a better understanding of how to avoid such pitfalls.