For grain and seed crops low temperature grain dryers – air temperature, ambient to ambient plus 5°C have been considered to be a low capital cost, energy efficient alternative to high temperature dryers. In this project, the core of the research is near ambient drying (see Figure 1).

The model used is based on the assumption that the sensible heat lost by the air flowing through the bed is equivalent to the latent heat due to moisture vaporization. Therefore the energy balances inside a control volume isolated from the bed are reduced to:

\[ \frac{dE}{dt} = \sum \text{Heat sources} - \sum \text{Heat losses} \]

The lines represent the moisture content at different levels into the bin (0% is the bottom and 100% is the top).