

**BAE 103**  
**Energy in Biological Systems**

**Problem Set No. 12**  
**Concepts: Psychrometrics Continued**  
**Due Date: Monday, April 2**

- 12.1. In a low temperature solar grain dryer outside air at 35° and 60% RH enters the solar collector and is heated to 90°F. The air then adiabatically (constant energy) saturates as it moves through the grain mass. Assume the energy required to heat the corn is negligible and the air is saturated as it leaves the corn mass while answering the following:
- Show the heating-humidification process on a sketch of the psychrometric chart by drawing lines showing the process. Indicate where the air is in the solar collector and where it is in the corn mass.
  - How much energy (BTU) must be added to each pound of dry air?
  - How many pounds of water per pound dry air is added to the air as it moves thru corn mass.
  - What are the final wet bulb and dry bulb temperatures of the air.