

### **Example of Growth Limiting Factors – $a_w$ and pH**

The  $a_w$  range for an organism's optimum growth is .95-1.00, and the  $a_w$  limit for growth is .92. The pH range for the organism's optimum growth is 5.5 to 7.4 and the pH limit for growth is 5.1.

By reducing the  $a_w$  of the product to .93, the microorganism will not grow if the product's pH is below 5.4.