

**Food to Microorganism Ratio  
Part 1  
Practice Problems**



1. A treatment plant has an aeration basin that is 353 feet long (108 meters), 50 feet wide (15 meters) and 9 feet deep (2.7 meters). The influent flow is 1 MGD (3,788 m<sup>3</sup>/day) and contains a BOD concentration of 189 mg/L. The MLVSS concentration is 1,535 mg/L. What is the food to microorganism ratio of this plant?
  - A. 1.0 F:M
  - B. 2.0 F:M
  - C. 0.6 F:M
  - D. 0.1 F:M
  
2. A treatment plant receives 3 MGD (11,364 m<sup>3</sup>/day) with an average BOD concentration of 141 mg/L. The aeration basin dimensions are 468 feet (143 meters) by 67 feet (20 meters) by 12 feet (3.7 meters). The aeration basin has a MLVSS concentration of 2,409 mg/L. What is the food to microorganism ratio?
  - A. 0.1 F:M
  - B. 0.06 F:M
  - C. 0.6 F:M
  - D. 2.0 F:M
  
3. An aeration basin with a volume of 2,664,137 gallons (10,091 m<sup>3</sup>) has a MLVSS concentration of 1,632 mg/L. If the average flow is 4 MGD (15,152 m<sup>3</sup>/day) and the average BOD concentration is 153 mg/L, what is the food to microorganism ratio?
  - A. 0.141 F:M
  - B. 0.5 F:M
  - C. 1.04 F:M
  - D. 0.06 F:M