Shigella spp.

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Potential Food Safety Hazard

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Shigellosis, although commonly regarded as waterborne, is also a food-borne disease restricted primarily to higher primates, including humans. It is usually spread among humans by food handlers with poor personal hygiene. Foods most often incriminated in the transmission have been potato salad, shellfish, raw vegetables, and Mexican dishes.

The genus *Shigella* consists of four species: *S. dysenteriae* (subgroup A), *S. flexneri* (subgroup B), *S. boydii* (subgroup C), and *S. sonnei* (subgroup D). *Shigella* organisms may be very difficult to distinguish biochemically from *Escherichia coli*. Brenner (1984) considers *Shigella* organisms and *E. coli* to be a single species, based on DNA homology. Nonetheless, *Shigella* species are Gram-negative, facultatively anaerobic, nonsporulating, nonmotile rods in the family *Enterobacteriaceae*. They do not decarboxylate lysine or ferment lactose within 2 d. They utilize glucose and other carbohydrates, producing acid but not gas. However, because of their affinity with *E. coli*, frequent exceptions may be encountered, e.g., some biotypes produce gas from glucose and mannitol. Neither citrate nor malonate is used as the sole carbon source for growth, and the organisms are inhibited by potassium cyanide (Andrews, 1998).

Control Measures

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Hazards from *Shigella* can be prevented by preventing human waste contamination of water supplies and by improved personal hygiene for people who are ill or are carriers of *Shigella* and work in food operations (Ward et al., 1997).

FDA Guidelines

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FDA to assess situations on a case by case basis.

Growth

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References

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