Perception of Different Sugars by Blowflies

ABSTRACT

To feed on materials that are healthy for them, flies (order Diptera) use taste receptors on their tarsi to find sugars to ingest. We examined the ability of blowflies to taste monosaccharide and disaccharide sugars as well as saccharin. To do this, we attached flies to the ends of sticks and lowered their feet into solutions with different concentrations of these sugars. We counted a positive response when they lowered their proboscis to feed. The flies responded to sucrose at a lower concentration than they did of glucose, and they didn't respond to saccharin at all. Our results show that they taste larger sugar molecules more readily than they do smaller ones. They didn't feed on saccharin because the saccharin we use is actually the sodium salt of saccharin, and they reject salt solutions. Overall, our results show that flies are able to taste and choose foods that are good for them.