SUMMARY

[004a] In a first aspect of the present disclosure, there is provided a food contact article having at least one food contact surface, wherein the at least one food contact surface comprises at least 50 weight percent of at least one biodegradable polymer, wherein the at least one biodegradable polymer is polyhydroxyalkanoates, and from 0.1 weight percent to 1.0 weight percent of at least one antimicrobial agent, wherein the antimicrobial agent comprises lysozyme; and wherein the antimicrobial agent is absorbed onto the food contact surface.

[005] In a first example, the present disclosure provides a food contact article. According to one example, the food contact article includes at least one food contact surface. This at least one food contact surface is made up of at least 50 weight percent of at least one biodegradable polymer and from about 0.1 weight percent to about 1.0 weight percent of at least one antimicrobial agent.

[006] In some examples, the food contact article is preferably a food container, a cup, an eating utensil, or a food packaging film.

[007] According to certain examples, the food contact article is preferably made up of a biodegradable substrate having a coating formed thereon. This coating makes up the food contact surface and is preferably made up of at least 50 weight percent of the at least one biodegradable polymer and from about 0.1 weight percent to about 1.0 weight percent of at least one antimicrobial agent. More preferably, the biodegradable substrate is made up of paperboard.

[008] In certain examples, the food contact surface is preferably made up of at least 75 weight percent of the at least one biodegradable polymer and more preferably from about 80 to about 99.9 weight percent weight percent of the at least one biodegradable polymer.

[009] In some instances, the antimicrobial agent is preferably selected from the group consisting of anti-bacterial agents, anti-fungal agents, anti-parasitic agents, anti-algal agents, anti-prion agents, and combinations thereof.

[010] In certain preferred examples, the antimicrobial agent is made up of lysozyme in an amount from about 0.1 to about 1.0 weight percent of the food contact article. Further, in certain examples, the food contact article also includes a second antimicrobial agent

selected from the group consisting of anti-bacterial agents, anti-fungal agents, anti-parasitic agents, anti-algal agents, anti-prion agents, and combinations thereof.

[011] In accordance with certain examples, the antimicrobial agent is preferably applied as a spray on the at least one food contact surface. In other examples, the

WHAT IS CLAIMED IS

Claim 1. A food contact article having at least one food contact surface, wherein the at least one food contact surface comprises at least 50 weight percent of at least one biodegradable polymer, wherein the at least one biodegradable polymer is polyhydroxyalkanoates, and from 0.1 weight percent to 1.0 weight percent of at least one antimicrobial agent, wherein the antimicrobial agent comprises lysozyme; and wherein the antimicrobial agent is absorbed onto the food contact surface.

Claim 2. The food contact article of Claim 1, wherein the food contact article comprises a food container, a cup, an eating utensil, or a food packaging film.

Claim 3. The food contact article of Claim 1, wherein the food contact article comprises a biodegradable substrate and the food contact surface comprises a coating formed on the substrate.

Claim 4. The food contact article of Claim 3, wherein the biodegradable substrate comprises paperboard.

Claim 5. The food contact article of Claim 1, wherein the food contact surface comprises from 80 to 99.9 weight percent of at least one biodegradable polymer.

Claim 6. The food contact article of Claim 1, further comprising a second antimicrobial agent selected from the group consisting of anti-bacterial agents, anti-fungal agents, anti-parasitic agents, anti-algal agents, anti-prion agents, and combinations thereof.

Claim 7. The food contact article of Claim 1, wherein the antimicrobial agent is applied as a spray on the at least one food contact surface.

Claim 8. The food contact article of Claim 1, wherein the polyhydroxyalkanoates comprise a copolymer made up of from 75 to 99.9 mole percent monomer residues of 3-hydroxybutyrate and from 0.1 to 25 mole percent monomer residues of a second hydroxyalkanoate having from 5 to 12 carbon atoms.

Claim 9. The food contact article of Claim 1, wherein the polyhydroxyalkanoates comprise a terpolymer made up from 75 to 99.9 mole percent monomer residues of 3-hydroxybutyrate and from 0.1 to 25 mole percent monomer residues of 3-hydroxyhexanoate, and from 0.1 to 25 mole percent monomer residues of a third hydroxyalkanoate having from 5 to 12 carbon atoms.

Claim 10. The food contact article of Claim 1, wherein the polyhydroxyalkanoates have an initial weight average molecular weight from 100,000 to 3,000,000 daltons.