CLAIMS

WHAT IS CLAIMED IS:

1. A method of processing a liquid, comprising:

adding an antifoam to a process liquid, and

after adding the antifoam, continuously feeding the process liquid through one or more cross-flow filter membrane configured for cross-flow filtration,

wherein the antifoam comprises a mixture of (A) a vegetable oil and (B) an organic emulsifier.

2. The method according to claim 1, wherein purified liquid passes through the cross-flow filter membrane as filtrate, and solids suspended in the process liquid, which are too large to pass through pores of the cross-flow filter membrane, are retained in an increasingly concentrated retentate.

3. The method according to claim 1, wherein the process liquid is a liquid subject to excessive foaming during a liquid processing step.

4. The method according to claim 1, wherein the process liquid is a beverage.

5. The method according to claim 1, wherein the process liquid is beer or wine.

6. The method according to claim 1, wherein the process liquid is beer, and the antifoam is added during a step of wort boiling and/or during a step of fermentation.

7. The method according to claim 1, wherein 2 ppm to 500 ppm of the antifoam is added to the process liquid.

8. The method according to claim 1, wherein the cross-flow filter membrane is composed of a ceramic material or a polymeric material.

9. The method according to claim 1, wherein the cross-flow filter membrane is composed of polyethersulfone (PES), polysulfone (PS), modified polyethersulfone (mPES), mixed ester (ME), mixed cellulose ester (MCE), or blends thereof.

10. The method according to claim 1, wherein the cross-flow filter membrane is composed of polyethersulfone (PES).

11. The method according to claim 1, further comprising a step of reducing a temperature of the process liquid below a melting point of the vegetable oil of the antifoam.

12. The method according to claim 1, further comprising a step of allowing the antifoam to at least partially solidify prior continuously feeding the process liquid through the one or more cross-flow filter membrane.

13. The method according to claim 1, wherein the vegetable oil is one or more selected from the group consisting of soybean oil, palm oil, rice bran oil, sunflower oil, olive

oil, coconut oil, rapeseed oil, canola oil, peanut oil, cottonseed oil, corn oil, linseed oil, safflower oil, sesame oil, hazelnut oil, açaí palm oil, avocado oil, brazil nut oil, cashew oil, chia seed oil, cocoa butter oil, flaxseed oil, hemp seed oil, pecan oil, and walnut oil.

14. The method according to claim 1, wherein the organic emulsifier is one or more selected from the group consisting of mustard, soy and egg lecithin, mono- and diglycerides, polysorbates, carrageenan, guar gum, polyglycerol esters, stearoyl lactylates, propylene glycol, propylene glycol esters, sucrose esters, saccharide fatty acid esters, milk proteins, wheat glutens, gelatins, prolamines, soy protein isolates, starches, acetylated polysaccharides, alginates, carrageenans, chitosans, inulins, long chain fatty acids, waxes, agar, alginates, glycerol, gums, poloxamers, monosodium phosphates, monostearate, fatty acid methyl esters (e.g., methyl stearate, methyl palmitate, methyl palmitoleate (cis-9)), and blends thereof. Specific examples include, for example, sorbitan monododecanoate, polyoxyethylene 20 sorbitan monostearate, sorbitan mono-9-octadecenoate, and 9-octadecenoic acid.

15. The method according to claim 1, wherein the antifoam further comprises hydrophobic silica and/or hydrophilic silica.

16. The method according to claim 1, wherein the vegetable oil includes rapeseed oil, and

the organic emulsifier includes one or more selected from the group consisting of sorbitan monododecanoate, polyoxyethylene 20 sorbitan monostearate, sorbitan mono-9-octadecenoate, and 9-octadecenoic acid.

17. The method of claim 1, wherein a weight ratio of the vegetable oil in the antifoam is from 5.0 to 70.0 wt%; and a weight ratio of the organic emulsifier in the antifoam is from 5.0 to 60.0 wt%.

18. The method of claim 16, wherein a weight ratio of the vegetable oil in the antifoam is from 5.0 to 70.0 wt%; and a weight ratio of the organic emulsifier in the antifoam is from 5.0 to 60.0 wt%.

19. The method of claim 1, wherein silica is not included in the antifoam

20. The method of claim 1, wherein silicone is not included in the antifoam.