WHAT IS CLAIMED IS:

1. An antimicrobial composition comprising:

(a) at least one aliphatic aldehyde component;

(b) allyl isothiocyanate.

2. The antimicrobial composition of claim 1, wherein the aliphatic aldehyde component is a C_6-C_{13} aldehyde.

3. The antimicrobial composition of claim 2, wherein the aliphatic aldehyde component is unsaturated.

4. The antimicrobial composition of claim 3, wherein the aliphatic aldehyde component is an α, β unsaturated aldehyde.

5. The antimicrobial composition of claim 3, wherein the aliphatic aldehyde component is straight-chained.

6. The antimicrobial composition of claim 2, wherein the aliphatic aldehyde component is a C_7-C_{12} aldehyde.

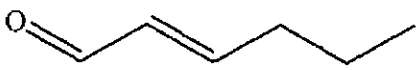
7. The antimicrobial composition of claim 6, wherein the aliphatic aldehyde component is unsaturated.

8. The antimicrobial composition of claim 7, wherein the aliphatic aldehyde component is an α, β unsaturated aldehyde.

9. The antimicrobial composition of claim 7, wherein the aliphatic aldehyde component is straight-chained.

10. The antimicrobial composition of claim 1, wherein the aliphatic aldehyde component is selected from:

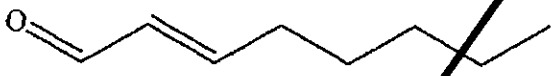
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trans-2-heptenal:



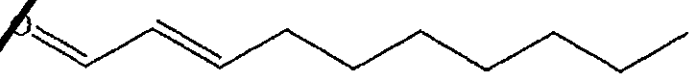
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trans-2-nonenal:



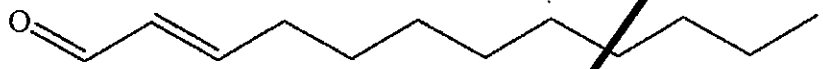
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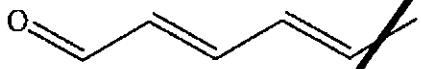
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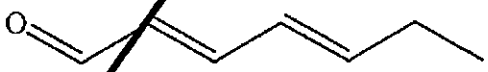
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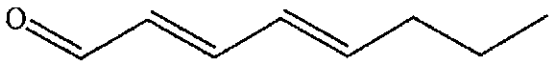
2, 4 hexadienal:



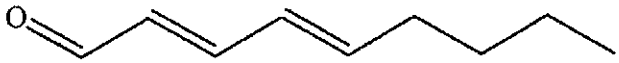
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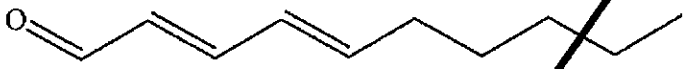
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2,4 nonadienal



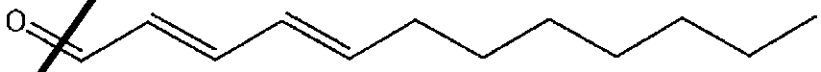
2, 4 decadienal



2, 4 undecadienal



2, 4 dodecadienal



11. The antimicrobial composition of claim 1, wherein the allyl isothiocyanate is obtained from mustard essential oil.

12. An antimicrobial composition comprising from about 5 wt% to about 40 wt% of an unsaturated or saturated C_6-C_{13} straight-chained or branched aliphatic aldehyde.

13. The antimicrobial composition of claim 12, wherein the composition contains from about 8 wt% to about 12 wt% of the unsaturated or saturated C_6-C_{13} straight-chained or branched aliphatic aldehyde.

14. A method of reducing the bacterial activity of an environment comprising applying an antimicrobial composition of any one of claims 1 to 13.

15. The method of claim 14, wherein gram-positive bacteria is reduced.

16. The method of claim 14, wherein gram-negative bacteria is reduced.

17. The method of claim 14, wherein the antimicrobial composition is allowed to evaporate within a confined space and is active in the vapor phase.

18. A method of preserving a product against spoilage comprising introducing an antimicrobial composition of any one of claims 1 to 13 to the product.

19. A method of preventing malodor in a confined air space comprising introducing an antimicrobial composition of any one of claims 1 to 13 to the confined air space.

20. An air sanitizer comprising the composition of any one of claims 1 to 13.

21. The air sanitizer of claim 20, wherein the air sanitizer is in a form capable of being maintained in close proximity to a toilet rim.

22. The air sanitizer of claim 20, wherein the air sanitizer is in the form of a polymeric bead, an oil or a gel.

23. Packaging for foodstuff comprising the composition of any one of claims 1 to 13.

WHAT IS CLAIMED IS:

1. An antimicrobial composition comprising:
   (a) at least one aliphatic aldehyde component;
   (b) allyl isothiocyanate.

2. The antimicrobial composition of claim 1, wherein the aliphatic aldehyde component is a C_6-C_{13} aldehyde.

3. The antimicrobial composition of claim 2, wherein the aliphatic aldehyde component is unsaturated.

4. The antimicrobial composition of claim 3, wherein the aliphatic aldehyde component is an α, β unsaturated aldehyde.

5. The antimicrobial composition of claim 3, wherein the aliphatic aldehyde component is straight-chained.

6. The antimicrobial composition of claim 2, wherein the aliphatic aldehyde component is a C_7-C_{12} aldehyde.

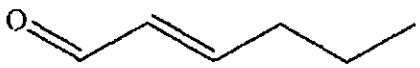
7. The antimicrobial composition of claim 6, wherein the aliphatic aldehyde component is unsaturated.

8. The antimicrobial composition of claim 7, wherein the aliphatic aldehyde component is an α, β unsaturated aldehyde.

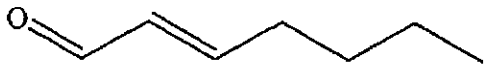
9. The antimicrobial composition of claim 7, wherein the aliphatic aldehyde component is straight-chained.

10. The antimicrobial composition of claim 1, wherein the aliphatic aldehyde component is selected from:

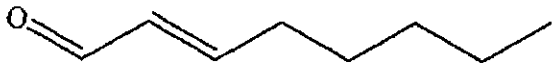
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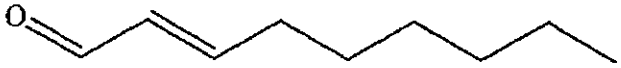
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trans-2-octenal:



trans-2-nonenal:



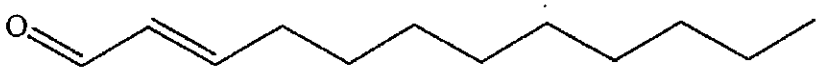
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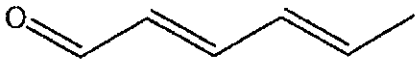
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trans-2-dodecenal:



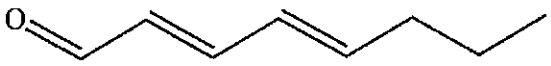
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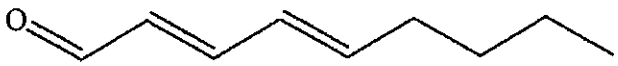
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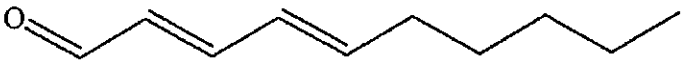
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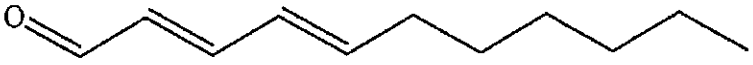
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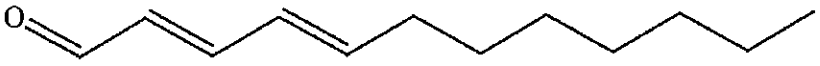
2, 4 decadienal



2, 4 undecadienal



2, 4 dodecadienal



11. The antimicrobial composition of claim 1, wherein the allyl isothiocyanate is obtained from mustard essential oil.

12. A method of reducing the bacterial activity of an environment comprising applying an antimicrobial composition of any one of claims 1 to 11.

13. The method of claim 12, wherein gram-positive bacteria is reduced.

14. The method of claim 12, wherein gram-negative bacteria is reduced.

15. The method of claim 12, wherein the antimicrobial composition is allowed to evaporate within a confined space and is active in the vapor phase.

16. A method of preserving a product against spoilage comprising introducing an antimicrobial composition of any one of claims 1 to 11 to the product.

17. A method of preventing malodor in a confined air space comprising introducing an antimicrobial composition of any one of claims 1 to 11 to the confined air space.

18. An air sanitizer comprising the composition of any one of claims 1 to 11.

19. The air sanitizer of claim 18, wherein the air sanitizer is in a form capable of being maintained in close proximity to a toilet rim.

20. The air sanitizer of claim 18, wherein the air sanitizer is in the form of a polymeric bead, an oil or a gel.

21. Packaging for foodstuff comprising the composition of any one of claims 1 to 11.