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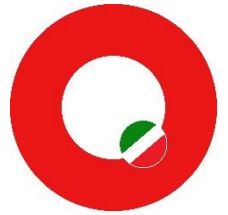


PAGLIERANI

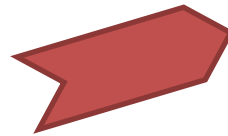
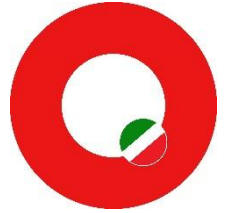
FBC
MEDESANO - PARMA - ITALIA

ANTIMICROBIAL COMPOSITE MATERIAL

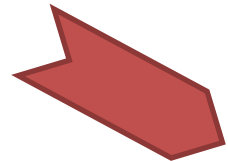




GRAIN CONTAMINATION

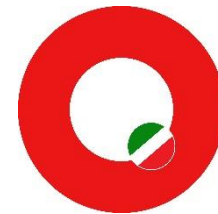


CONDITIONING PHASE



PLANSIFTER

ORIGIN OF CONTAMINATION IN WHEAT



MILLS FIGHT AGAINST MICROORGANISM

Material selection:

- **Food grade**
- **GOOD antimicrobial activity**
- **NO effects on wheat flour**
- **GOOD mechanical properties**

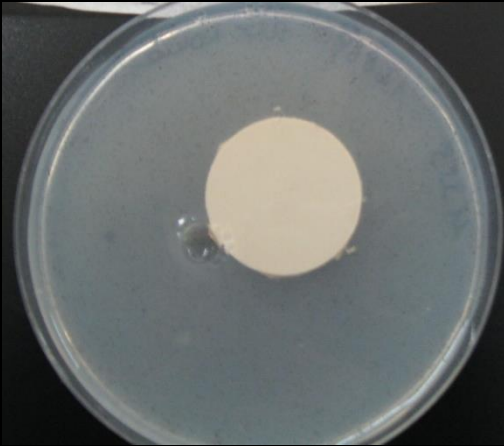


Human pathogen (Modified AATCC 100 method)

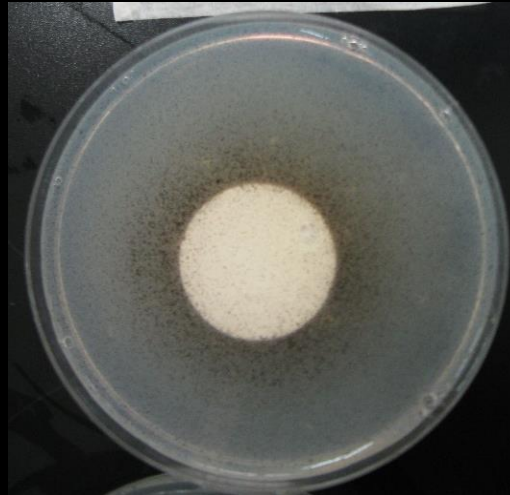
- ***Staphylococcus aureus***
- ***Escherichia coli***
- ***Salmonella***

Mycotoxins fungi mix (ISO 16869/08 & 846/97)

- ***Aspergillus flavus* (aflatoxins B1 and G1)**
- ***Fusarium graminearum* (DON and ZEN)**
- ***Penicilium verrucosum* (ochratoxin A)**



COMPOSITE MATERIAL



WOOD MULTILAYER



WOOD TULPIER

Control (C)

Test (T)



100 g wheat flour kept for 3 hours in contact with the material

RESULTS & COMPARISON: NO EFFECTS ON FLOUR

C

T

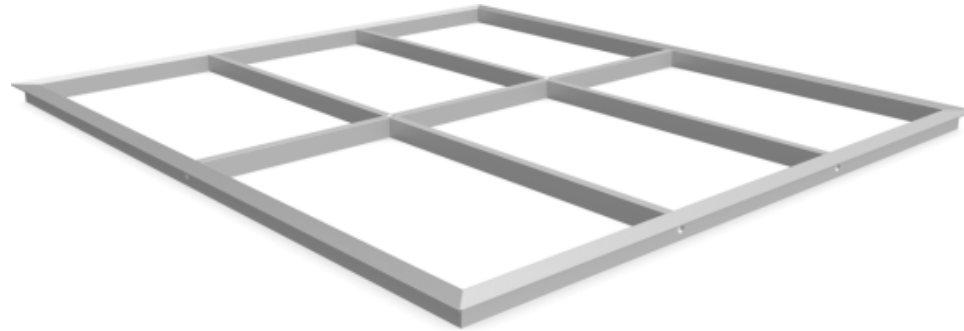
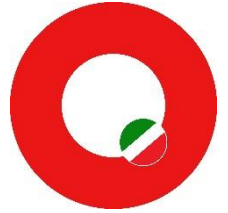


C

T



RESULTS & COMPARISON: BREAD MAKING TEST



MILLS FIGHT AGAINST MICROORGANISMS

THANK YOU