

"Evaluation of the antimicrobial effectiveness of coatings for surfaces in contact with food"

The aim of this experimental study consisted in evaluate the antimicrobial effectiveness of different coverings, with various antimicrobial additives to use in surfaces in contact with food by making different microbiological test over this surfaces.

Study material: Laminated polypropylene.

Coverings: Mineral coating, Soft and Hard coatings.

Microorganism: *Staphylococcus aureus* 6538P ATCC, "(American Type Culture Collection)".

Additives: Zinc Organometallic and Thiazolinone with zinc oxide or titanium oxide.

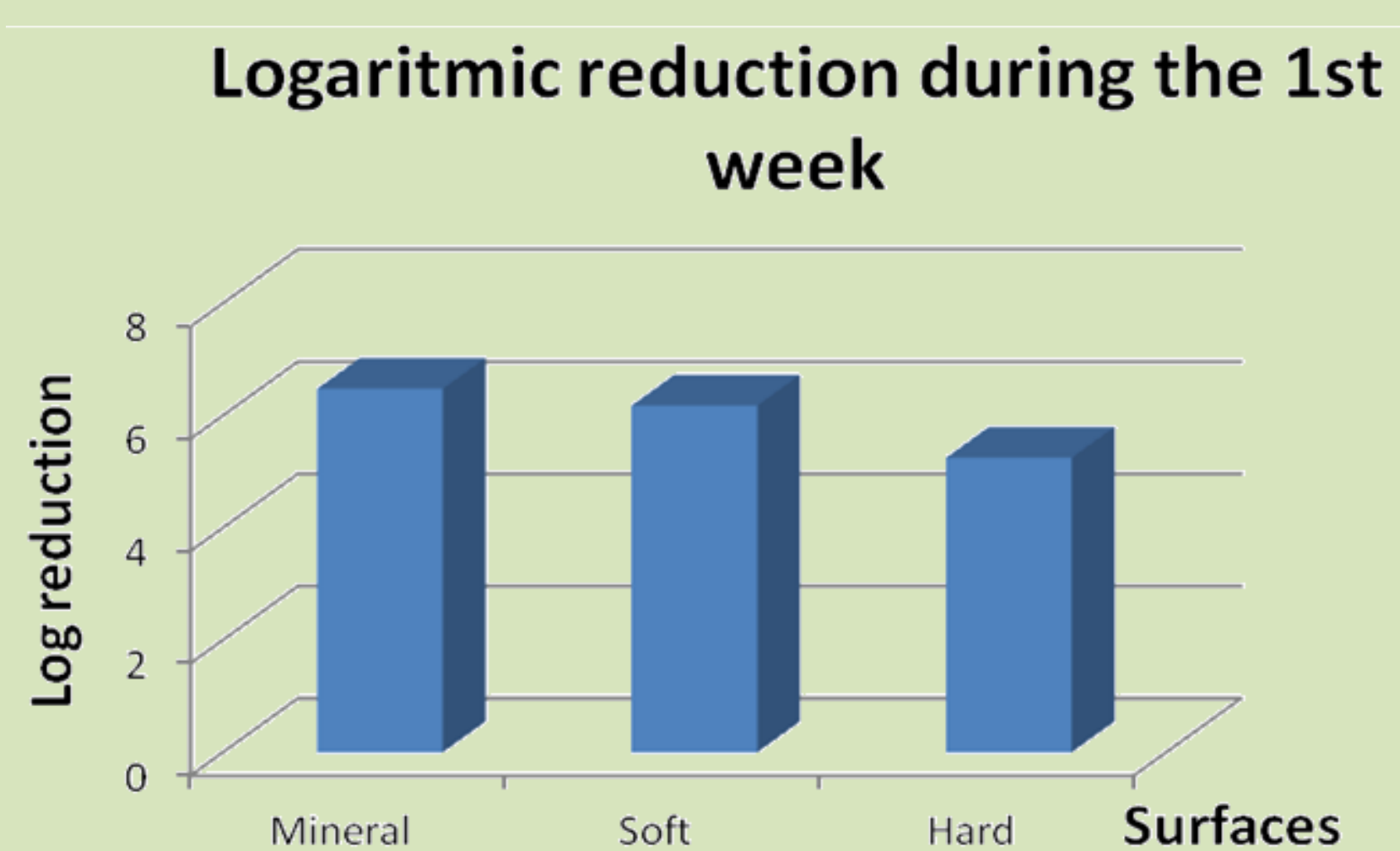
Results

1st Week

Additive: Zinc Organometallic

Reduction observed:

- Mineral: >6,48 log
- Soft: >6,18 log
- Hard: >5,25 log

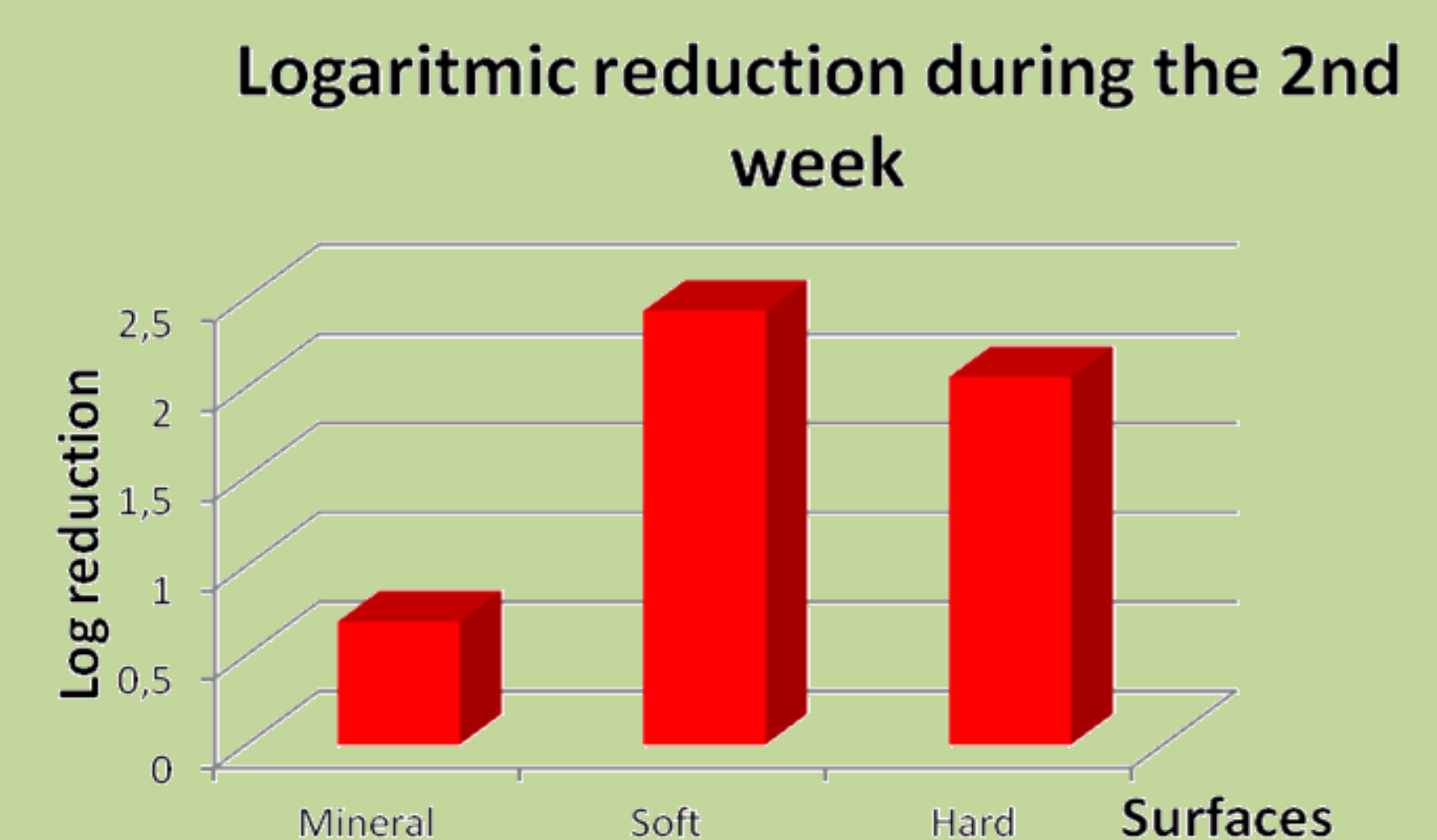


2nd Week

Additive: Thiazolinone with zinc oxide

Reduction observed:

- Mineral: =0,69 log
- Soft: =2,43 log
- Hard: =2,06 log

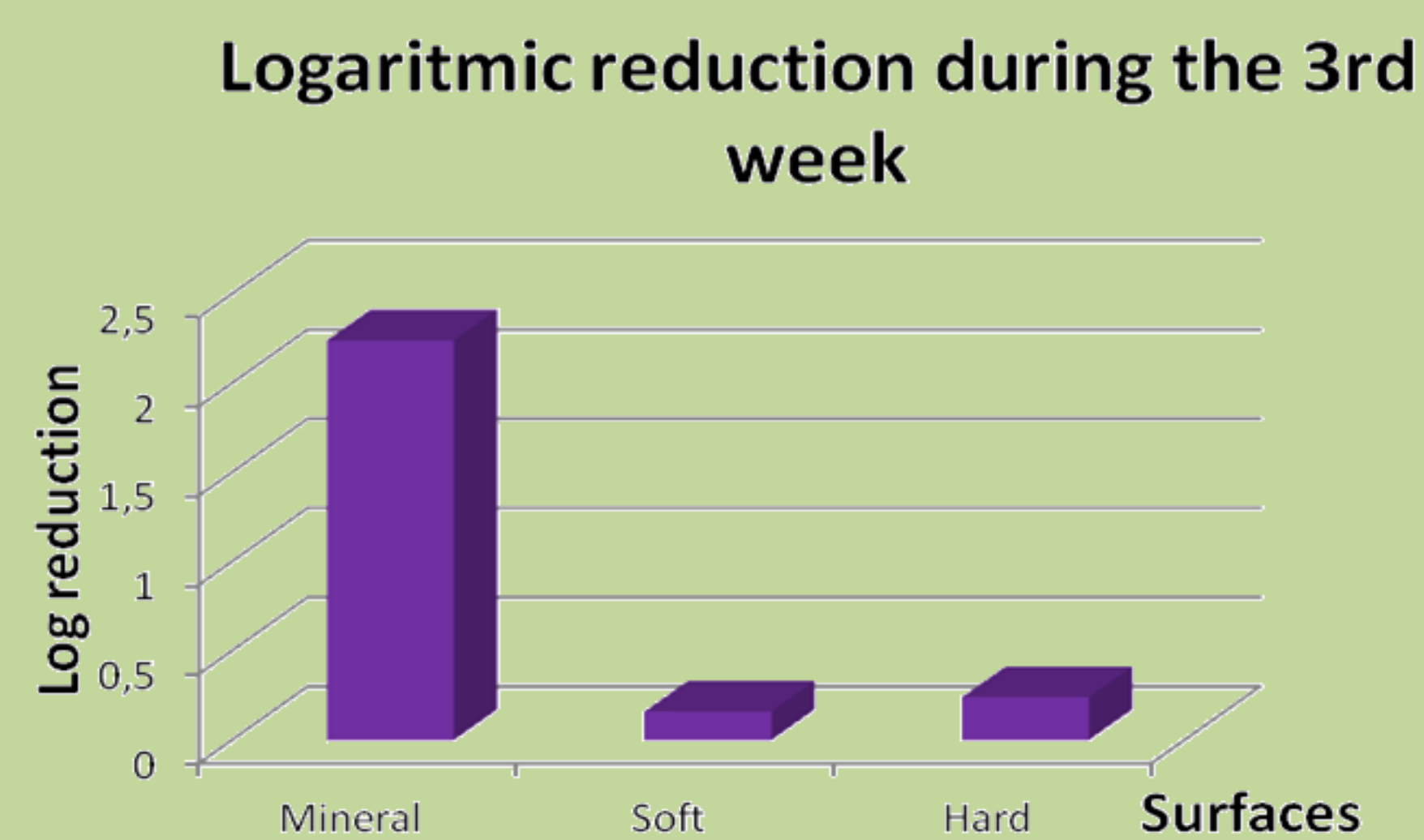


3rd Week

Additive: Thiazolinone with zinc oxide in forced aging surface

Reduction observed:

- Mineral: =2,24 log
- Soft: <0,16 log
- Hard: =0,24 log

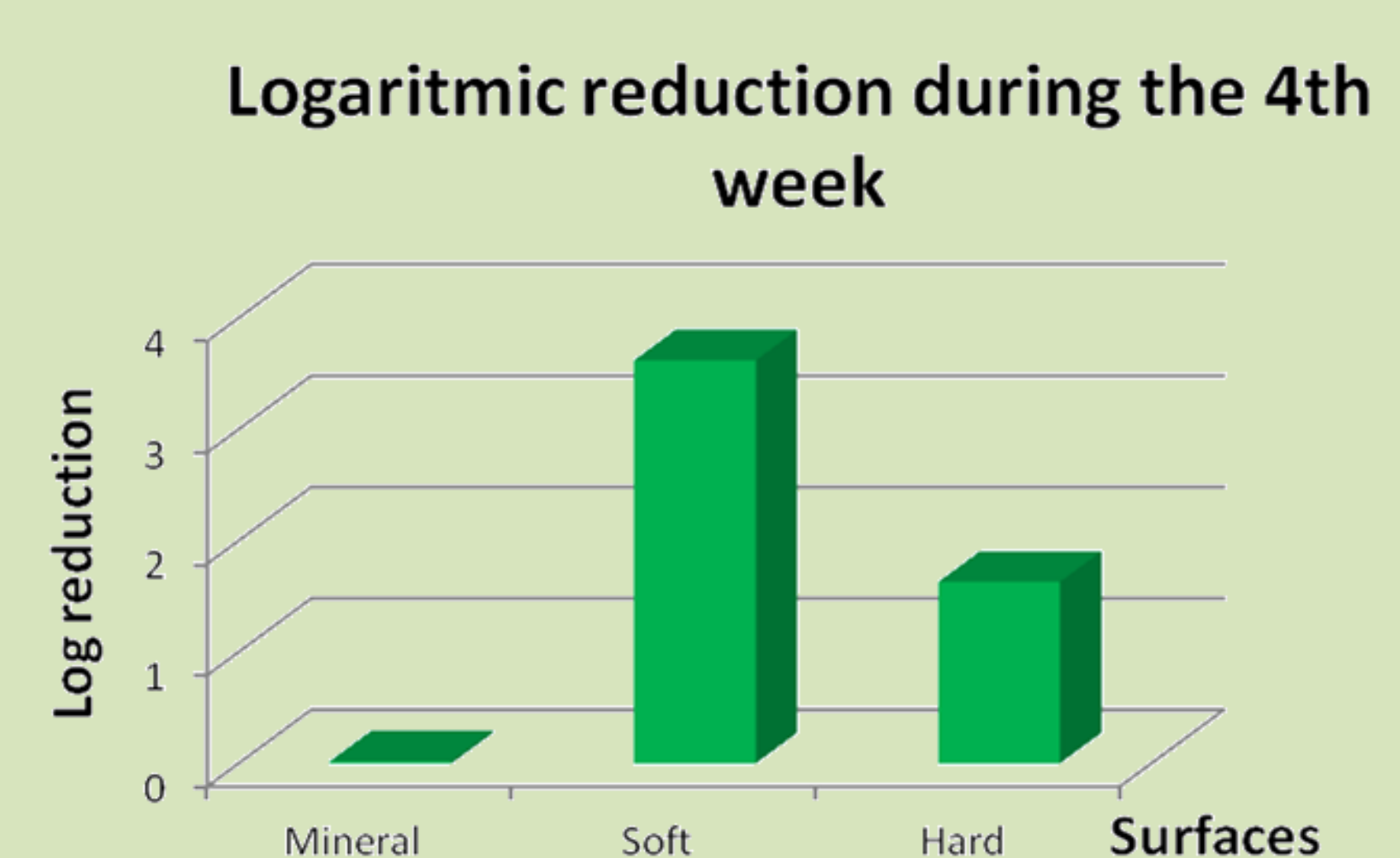


4th Week

Additive: Thiazolinone with titanium oxide

Reduction observed:

- Mineral: =0,02 log
- Soft: =3,62 log
- Hard: =1,63 log



Conclusions

It has been observed that additives has an antimicrobial effectiveness over the different coverings.

The best results obtained is with the additive zinc organometallic in all surfaces, but we can't use it in surfaces with contact of food.

Titanium oxide shows better results than zinc oxide with the additive thiazolinone.

The mineral covering has the biggest longevity in comparison with Soft or Hard covering.

