



# IDROELETRIKA

**TEST  
CONDUCTED ON  
WOODEN BARRELS  
WITH VAPORONE MACHINE  
OF THE IDROELETRIKA  
“VAPOR” LINE**

# VAPOR

**CLEANING AND SANITIZING  
FOR MACHINERY AND EQUIPMENTS, WOODEN BARRELS,  
STAINLESS STEEL STORAGE TANKS, PRODUCTION  
ENVIRONMENTS, FILTER SYSTEMS, BOTTLING LINES, ETC.**

## FIRST STEP

All barrels were previously washed with hot or cold water, with samples being taken in order to detect the first stage of the existing microbiological component.

## SECOND STEP

The barrels were treated with **steam** generated by the IdroEletrika machine in accordance to the steaming method developed by the company's field operatives. The residue after treatment was sampled and a second microbiological analysis was carried out to evaluate the effect of the treatment itself.

## THIRD STEP

At the end of the tests, all the barrels received a final cold water rinse and this too was sampled and analysed in order to detect the final stage of the microbiological component obtained after sanitizing using the exclusive steam method generated by IdroEletrika machines.

### SUMMARY MICROBIOLOGICAL DATA - 30/05/2019

BARREL	WATER (FRIST WASH)	ACETIC BACTERIA (CFU/ML)	TOTAL YEASTS (CFU/ML)	MOULDS (CFU/ML)
CAMP 153	Rip 1	28.000	15	45
	Rip 2	0	0	0
	Rip 3	20	0	10
CAMP 154	Rip 1	1.000	20	40
	Rip 2	0	0	0
	Rip 3	20	0	0
CAMP 155	Rip 1	28.000	5	25
	Rip 2	0	0	0
	Rip 3	0	0	0
CAMP 157	Rip 1	330	35	65
	Rip 2	0	0	0
	Rip 3	0	0	0
CAMP 158	Rip 1	200	0	20
	Rip 2	0	0	0
	Rip 3	0	0	0
CAMP 159	Rip 1	10	25	15
	Rip 2	0	0	0
	Rip 3	0	0	0

Rip 1: first wash with water - Rip 2: sample after treatment - Rip 3: final wash with cold water

The table on the previous page shows the results of the 3 microbiological determinations carried out at the microbiology laboratory of the Edmund Mach Foundation according to OIV methods and applying the count on the Petri dish on differential culture media.

After the first microbiological determination (1st step - Rip 1), all barrels **show a presence** of acetic bacteria, total yeasts and moulds in concentrations ranging from 15 to 28,000 cfu/ml (colony forming units per ml) of aqueous sample.

As the 2nd step (Rip 2) shows, this presence is **annulled** by the specific steam treatment with IdroEletrika method, with a significant difference between the treatments made with cold water and hot water, where the latter were much more effective since the isolated microbial population is at least 1 logarithmic unit lower (10 times lower).

**In all cases the steam treatment has allowed an effective sanitization of the barrels, considering the fact that in the next two samples it was no longer possible to isolate any microbial form, except for some units forming colony of molds, probably due to environmental contamination without oenological significance.**

## IN CONCLUSION

The treatment proposed by IdroEletrika appears very effective in the experimental conditions tested in sanitizing barrels and barrels for oenological use.

**THE TESTS WERE CONDUCTED ON WOODEN BARRELS OF DIFFERENT AGES AND TYPES  
AT A WELL-KNOWN WINERY IN VALPOLICELLA.  
ALL THE BARRELS HAD CONTAINED, FOR AT LEAST ONE PASSAGE, RED WINE.**

**ALL MICROBIOLOGICAL DETERMINATIONS WERE CARRIED OUT  
AT THE MICROBIOLOGY LABORATORY OF THE EDMUND MACH FOUNDATION  
(ACCORDING TO OIV METHODS) BY APPLYING THE COUNT ON A PETRI DISH  
ON DIFFERENTIAL CULTURE MEDIA FOR THE DETERMINATION OF TOTAL YEASTS,  
BRETTANOMYCES, MOULDS, LACTIC BACTERIA AND ACETIC BACTERIA.**

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**SANTI WINERY**

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