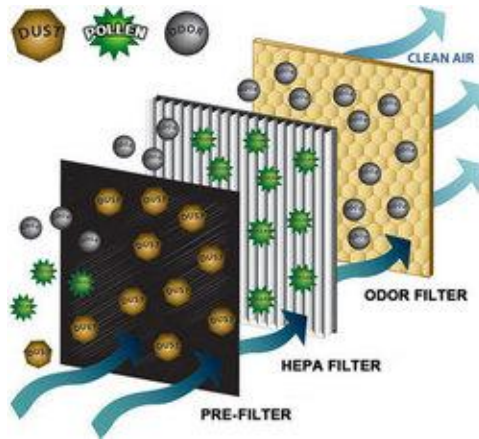
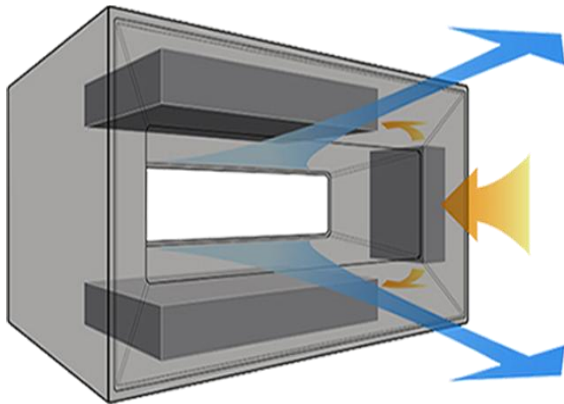


Air Purifier Test



Agenda

- Objectives
- Comparative table for Air Purifier Systems
- Test Protocol
- Results
- Preliminary Conclusions



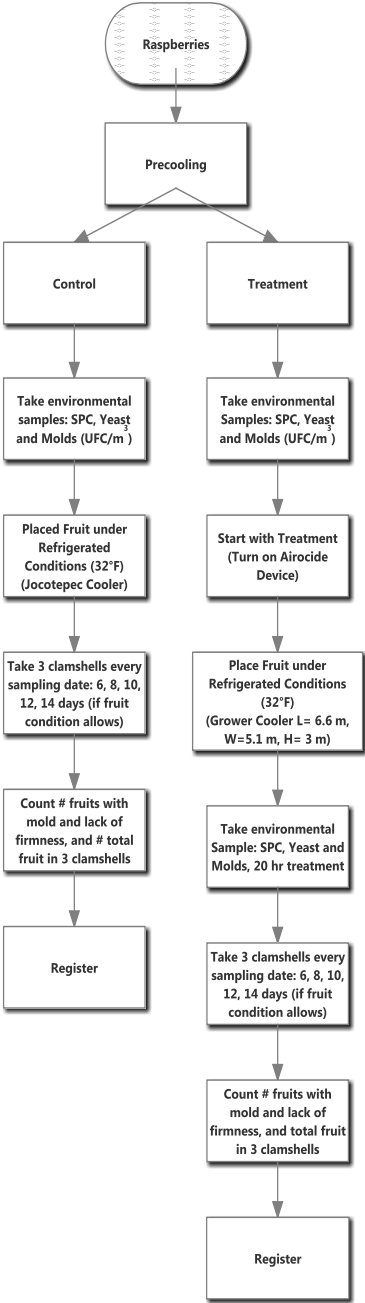
Objectives

- Observe the effect of Air Purifier System in the reduction of microbial load in the air environment of coolers
- Observe if the shelf life of the fruit could be extended through the use of an air purifier System

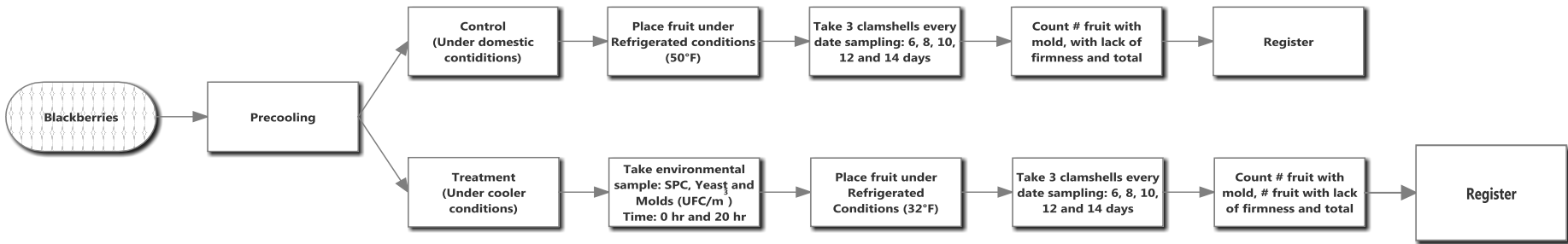


System	Airocide	Ozone	HEPA Filters
Technology	VOC Contact with catalytic surface-Oxidation	VOC contact with O₃ Oxidation	Air Pass trough a filtering surface
Benefits	Destruction of VOC (Volatile Organic Compounds: bacteria, molds, yeast, virus, ethylene)	Destruction of VOC	Retention of airborne microorganisms, not destruction of Ethylene
Additional Benefits	Could extend shelf life of some produce through the destructuion of ethylene and making slow the fruit rippen	Same as Airocide	No ethylene destruction, no contribute to extend shelf life
Efficiency	99.9%	99.9%	90-99.9%
Cost	\$\$\$\$	\$\$	\$\$
Comments	Bigger device than O₃ Technology Low electricity consumption, low maintainance	Generate irritant gas Could be health effects	It needs to change filters with periodicity

Test Protocol Raspberries



Test Protocol Blackberries



Results

Micro Results	Time of Treatment (hr)		log count		log reduction	% Reduction
	0	20	0	20		
UFC/m ³	0	20	0	20		
SPC	810	230	2.91	2.36	0.55	< 90%
Yeast	40	1	1.60	0.00	1.60	> 90%
Molds	3700	1	3.57	0.00	3.57	>99.9



Raspberry

Treatment

Blank

Time of Treatment (Days)	# Pieces/Clamshell			Temperature	32°F	# Pieces/Clamshell			Temperature	32°F
	Moldy	Lack of Firmness	Total	% Moldy	% Lack of Firmness	Moldy	Lack of Firmness	Total	%Moldy	%Lack of Firmness
6	0	4	121	0	3.31	0	47	122	0.00	38.52
8	0	5	124	0	4.03	1	48	120	0.83	40.00
10	2	0	131	1.53	0.00	1	50	120	0.83	41.67
12	13	3	117	11.11	2.56				#DIV/0!	#DIV/0!
14	34	16	135	25.19	11.85				#DIV/0!	#DIV/0!



Blackberry

Treatment

Blank

Time of Treatment (Days)	# Pieces/Clamshell			Temperature	32°F	# Pieces/Clamshell			Temperature	50°F
	Moldy	Lack of Firmness	Total	% Moldy	% Lack of Firmness	Moldy	Lack of Firmness	Total	%Moldy	%Lack of Firmness
6	0	3	94	0	3.19	8	8	90	8.89	8.89
8	0	0	91	0	0.00	7	5	90	7.78	5.56
10	0	3	98	0	3.06	17	0	90	18.89	0.00
12	0	9	93	0	9.68	30	4	89	33.71	4.49
14	0	24	90	0	26.67	35	9	97	36.08	9.28



Preliminary Conclusions

- The microbial counts in the environment was reduced >90% for yeast and > 99.9% for molds after 20 hr treatment
- There was a reduction of the blackberries affected for molds even after 14 days treatment
- There was a slower reduction of firmness in both raspberries and Blackberries during the time of treatment

