

Bio-Cap™ Evaporation Study

Hypothesis: It is suspected that water will evaporate more quickly from a Bio-Cap™ covered surface than water alone.

Methodology: Three replications of covered/uncovered containers of tap water will be placed under individual heat lamps for each container. Water will be weighed into each container and will be weighed out of each container at the conclusion of the test.

The Bio-Cap™ covering will be weighed dry before placement on the water surface of a container and this weight will be subtracted from the wet weight of Bio-Cap™ covering at the conclusion of the test.

- Materials:**
- 6 infra-red (clear) 125 watt heat lamps
 - 6 six quart ice cream pails (clean)
 - 3 Bio-Cap™ covers cut to fit the diameter of the pails
 - 1 equal-arm balance - gram scale
 - 1 Centigrade stick thermometer

A small fan will be operated to blow air across the pails and an exhaust hood will continuously operate.

Summary Data:

First Trial- 3/23/99

	Water Wt IN	Water Wt OUT	Difference Water Wt	% Loss
Pail #1	997.5	608.6	388.9 Bio-Cap™	39.0%
Pail #2	988.1	536.9	451.2	45.7%
Pail #3	991.0	474.7	516.3 Bio-Cap™	52.1%
Pail #4	994.2	605.0	389.2	39.1%
Pail #5	996.2	500.3	495.9 Bio-Cap™	49.8%
Pail #6	991.4	609.2	382.2	38.6%

	Bio-Cap™ Loss	No Cover Loss	Difference
	39.0%	45.7%	
	52.1%	39.1%	
	49.8%	38.6%	
Average:	47.0%	41.1%	5.8%

		Difference
Average Grams per minute per square foot evaporation with cover:	2.62	110.6%
Average Grams per minute per square foot evaporation without cover:	2.37	100.0%

Summary Data:

Second Trial- 3/24/99

	Water Wt IN	Water Wt OUT	Difference Water Wt	% Loss
Pail #1	766.6	355.1	411.5 Bio-Cap™	53.7%
Pail #2	760.5	314.6	445.9	58.6%
Pail #3	761.4	244.5	516.9 Bio-Cap™	67.9%
Pail #4	764.4	354.3	410.1	53.6%
Pail #5	762.4	208.7	553.7 Bio-Cap™	72.6%
Pail #6	765.4	429.2	336.2	43.9%

	Bio-Cap™ Loss	No Cover Loss	Difference
	53.7%	58.6%	
	67.9%	53.6%	
	72.6%	43.9%	
Average:	64.7%	52.1%	12.7%

Average Grams per minute evaporation with cover: 2.73 115.0%
Average Grams per minute evaporation without cover: 2.37 100.0%

Summary Data:

Third Trial- 3/25/99

	Water Wt IN	Water Wt OUT	Difference Water Wt	% Loss
Pail #1	761.6	453.2	308.4 Bio-Cap™	40.5%
Pail #2	764.3	387.3	377.0	49.3%
Pail #3	771.7	360.8	410.9 Bio-Cap™	53.2%
Pail #4	777.1	501.2	275.9	35.5%
Pail #5	762.0	396.8	365.2 Bio-Cap™	47.9%
Pail #6	771.0	491.6	279.4	36.2%

	Bio-Cap™ Loss	No Cover Loss	Difference
	40.5%	49.3%	
	53.2%	35.5%	
	47.9%	36.2%	
Average:	47.2%	40.4%	6.9%
		Average of Trials:	8.5%

Average Grams per minute evaporation with cover: 2.06 112.7%
Average Grams per minute evaporation without cover: 1.83 100.0%

Average grams/minute evaporation of Bio-Cap™ over all trials: 2.47 112.8%