Appendix I: Data Tables

Table 1: Changes in percent drip loss of headed and gutted rainbow trout as affected by treatment and storage time

Storage Time (Months)	**Percent Drip Loss**		
	Control	AMNC-202	MANC-213
0	10.05 ± 1.60^{a}	8.00 ± 0.19^{a}	8.22 ± 1.78^{a}
6	14.50 ± 1.38^{a}	9.50 ± 0.77^{a}	10.54 ± 1.99^{a}
12	12.42 ± 4.10^{a}	8.73 ± 0.62^{a}	8.44 ± 0.59^{a}

Data in rows with different superscript letters are significantly different ($p<0.05$).

Table 2: Changes in percent drip loss of filleted rainbow trout as affected by treatment and storage time

Storage Time (Months)	Percent Drip Loss					
	Control	AMNC-202	AMNC-203	ANC-204	KS-15	MANC-213
0	4.39 ± 0.07^{a}	5.70 ± 2.70^{a}	6.99 ± 0.71^{a}	4.79 ± 0.48^{a}	4.71 ± 0.99^{a}	6.15 ± 3.18^{a}
2	3.00 ± 1.90^{a}	4.65 ± 1.21^{ab}	6.13 ± 1.00^{b}	4.94 ± 0.26^{ab}	5.03 ± 0.61^{ab}	6.58 ± 0.86^{b}
4	3.85 ± 0.69^{a}	4.20 ± 0.58^{a}	6.84 ± 0.91^{b}	5.04 ± 0.12^{ab}	5.34 ± 0.12^{ab}	7.65 ± 1.06^{b}
6	5.66 ± 0.12^{ab}	3.90 ± 0.34^{a}	6.90 ± 0.21^{b}	5.05 ± 0.29^{ab}	5.58 ± 0.85^{ab}	7.22 ± 0.40^{b}
8	5.79 ± 0.23^{a}	5.01 ± 0.46^{a}	7.41 ± 0.36^{a}	5.93 ± 0.29^{a}	6.13 ± 0.13^{a}	6.99 ± 0.05^{a}
10	7.54 ± 1.52^{a}	6.00 ± 0.30^{a}	8.94 ± 2.08^{a}	8.93 ± 0.31^{a}	6.42 ± 0.24^{a}	8.53 ± 0.60^{a}
12	7.45 ± 0.17^{a}	6.74 ± 0.34^{a}	6.39 ± 0.61^{a}	7.14 ± 0.01^{a}	5.95 ± 0.97^{a}	8.36 ± 0.53^{a}

Data in rows with different superscript letters are significantly different ($p<0.05$).

Table 3: Changes in percent drip loss of minced rainbow trout as affected by treatment and storage time.

	Percent Drip Loss					
Storage Time (Weeks)	Control	AMNC-202	AMNC-203	ANC-204	KS-15	MANC-213
0	1.35 ± 0.01^{a}	1.33 ± 0.01^{a}	2.40 ± 0.13^{c}	1.86 ± 0.02^{b}	2.02 ± 0.03^{b}	2.04 ± 0.02^{b}
6	2.14 ± 0.02^{a}	2.04 ± 0.07^{a}	3.82 ± 0.04^{c}	2.96 ± 0.06^{b}	3.22 ± 0.03^{b}	4.42 ± 0.09^{d}
12	3.52 ± 0.04^{b}	2.52 ± 0.00^{a}	4.19 ± 0.05^{c}	3.42 ± 0.08^{b}	3.98 ± 0.06^{c}	5.76 ± 0.11^{d}
18	4.09 ± 0.12^{a}	4.57 ± 0.18^{b}	5.45 ± 0.14^{d}	4.24 ± 0.04^{a}	5.07 ± 0.05^{c}	6.40 ± 0.25^{e}
24	5.94 ± 0.04^{a}	5.98 ± 0.05^{a}	5.79 ± 0.07^{a}	5.71 ± 0.11^{a}	5.71 ± 0.10^{a}	6.84 ± 0.17^{b}

Data in rows with different superscript letters are significantly different ($p<0.05$).

Table 4: Changes in pH of headed and gutted rainbow trout as affected by treatment and storage time

Storage Time (Months)	pH		
	Control	AMNC-202	MANC-213
0	6.58 ± 0.00^{b}	6.46 ± 0.00^{a}	6.43 ± 0.00^{a}
6	6.55 ± 0.04^{c}	6.40 ± 0.02^{b}	6.30 ± 0.06^{a}
12	5.96 ± 0.00^{b}	5.84 ± 0.02^{a}	6.07 ± 0.05^{c}

Data in rows with different superscript letters are significantly different ($p<0.05$).

Table 5: Changes in pH of filleted rainbow trout as affected by treatment and storage time

Storage Time (Months)	pH					
	Control	AMNC-202	AMNC-203	ANC-204	KS-15	MANC-213
0	6.57 ± 0.01^{d}	6.34 ± 0.01^{b}	6.43 ± 0.00^{c}	6.26 ± 0.02^{a}	6.41 ± 0.01^{c}	6.44 ± 0.01^{c}
2	6.34 ± 0.02^{cd}	6.30 ± 0.01^{bc}	6.18 ± 0.01^{a}	6.33 ± 0.00^{cd}	6.37 ± 0.00^{d}	6.25 ± 0.00^{b}
4	6.56 ± 0.04^{c}	6.34 ± 0.00^{ab}	6.40 ± 0.01^{b}	6.36 ± 0.04^{b}	6.50 ± 0.02^{c}	6.29 ± 0.02^{a}
6	6.44 ± 0.02^{d}	6.23 ± 0.03^{b}	6.34 ± 0.02^{c}	6.21 ± 0.03^{b}	6.34 ± 0.02^{c}	6.14 ± 0.07^{a}
8	6.35 ± 0.01^{c}	6.16 ± 0.00^{b}	6.30 ± 0.02^{c}	6.15 ± 0.00^{b}	6.21 ± 0.00^{b}	6.04 ± 0.02^{a}
10	6.44 ± 0.02^{c}	6.29 ± 0.01^{b}	6.31 ± 0.00^{b}	6.17 ± 0.02^{a}	6.26 ± 0.03^{b}	6.12 ± 0.01^{a}
12	6.28 ± 0.00^{e}	6.16 ± 0.01^{c}	6.23 ± 0.01^{de}	6.09 ± 0.01^{b}	6.21 ± 0.01^{cd}	6.01 ± 0.01^{a}

Data in rows with different superscript letters are significantly different ($p<0.05$).

Table 6: Changes in the pH values of minced rainbow trout as affected by treatment and storage time.

	pH					
Storage Time (Weeks)	Control	AMNC-202	AMNC-203	ANC-204	KS-15	MANC-213
0	6.36 ± 0.01^{e}	6.23 ± 0.01^{a}	6.25 ± 0.01^{b}	6.28 ± 0.01^{ac}	6.33 ± 0.01^{d}	6.26 ± 0.02^{b}
6	6.63 ± 0.01^{e}	6.40 ± 0.01^{b}	6.49 ± 0.01^{c}	6.41 ± 0.02^{b}	6.59 ± 0.02^{d}	6.31 ± 0.03^{a}
12	6.90 ± 0.02^{d}	6.55 ± 0.01^{b}	6.56 ± 0.03^{b}	6.49 ± 0.02^{a}	6.68 ± 0.02^{c}	6.50 ± 0.03^{a}
18	6.99 ± 0.03^{e}	6.69 ± 0.03^{b}	6.72 ± 0.01^{c}	6.61 ± 0.02^{a}	6.79 ± 0.04^{d}	6.62 ± 0.02^{a}
24	7.21 ± 0.03^{e}	6.93 ± 0.02^{c}	6.92 ± 0.02^{bc}	6.86 ± 0.09^{a}	7.04 ± 0.02^{d}	6.91 ± 0.02^{b}

Data in rows with different superscript letters are significantly different ($p<0.05$).

Table 7: Paired comparison of headed and gutted rainbow trout to fresh and stored controls. Responses in table represent which sample was chosen as more oxidized.

Storage Time (Months)	AMNC-202		MANC-213	
	Fresh Control	Stored Control	Fresh Control	Stored Control
0	No Diff.	No Diff.	No Diff.	No Diff.
6	No Diff.	No Diff.	No Diff.	Control[a]
12	No Diff.	No Diff.	No Diff.	No Diff.

Where *a* denotes significant difference ($p<0.05$).

Table 8: Paired comparison of rainbow trout fillets to fresh and stored controls. Responses in table represent which sample was chosen as more oxidized.

Storage Time (Months)	AMNC-202		AMNC-203		ANC-204		KS-15		MANC-213	
	Fresh Control	Stored Control	Fresh Control	Stored Control	Fresh Control	Stored Control	Fresh Control	Stored Control	Fresh Control	Stored Control
0	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.
2	No Diff.	Control[a]	No Diff.	Control[a]	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.
4	No Diff.	Control[a]	No Diff.	Control[a]	Treated[a]	No Diff.	Treated[a]	No Diff.	Treated[a]	Control[a]
6	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	No Diff.	Treated[a]	No Diff.	Treated[a]	Control[a]
8	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	No Diff.	Treated[a]	Control[b]
10	NA	Control[b]	NA	Control[a]	NA	Control[a]	NA	Control[a]	NA	Control[b]
12	NA	Control[a]	NA	Control[a]	NA	Control[a]	NA	Control[a]	NA	Control[a]

Where *a* and *b* denote significant differences at $p<0.05$ and $p<0.01$, respectively.

Table 9: Paired comparison of antioxidant treated minced rainbow trout to fresh and stored controls. Responses in table represent which sample was chosen as more oxidized.

Storage Time (Weeks)	AMNC-202		AMNC-203		ANC-204		KS-15		MANC-213	
	Fresh Control	Stored Control	Fresh Control	Stored Control	Fresh Control	Stored Control	Fresh Control	Stored Control	Fresh Control	Stored Control
0	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.	No Diff.
6	No Diff.	Control[a]	No Diff.	Control[a]	No Diff.	Control[a]	No Diff.	No Diff.	No Diff.	Control[a]
12	No Diff.	Control[a]	No Diff.	Control[a]	Treated[a]	Control[a]	Treated[a]	No Diff.	No Diff.	Control[a]
18	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	Control[a]
24	Treated[a]	Control[b]	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	Control[a]	Treated[a]	Control[b]

Where *a* and *b* denote significant difference at $p<0.05$ and $p<0.01$, respectively.