

<b>Dependent variable</b>	<b>Predictors</b>	<b><math>\beta</math></b>	<b>p</b>
Brightness	Carotenoid concentration	-0.194	0.198
	Brightness of white feathers	0.002	0.987
UV chroma	Carotenoid concentration	0.024	0.872
	UV chroma of white feathers	0.243	0.105
Violet-blue chroma	<b>Carotenoid concentration</b>	<b>-0.546</b>	<b>0.000</b>
	<b>Violet-blue chroma of white feathers</b>	<b>0.342</b>	<b>0.004</b>
Yellow chroma	<b>Carotenoid concentration</b>	<b>0.385</b>	<b>0.006</b>
	<b>Yellow chroma of white feathers</b>	<b>0.274</b>	<b>0.047</b>
Hue	<b>Carotenoid concentration</b>	<b>0.618</b>	<b>0.000</b>
PC1	<b>Carotenoid concentration</b>	<b>0.376</b>	<b>0.008</b>

**Table 2:** Backward linear regression models predicting color variables measured from intact yellow American goldfinch (*Carduelis tristis*) feathers using the same variables measured from the same feathers following total carotenoid removal and total concentration of carotenoids. Predictors that significantly contribute to the model are highlighted in bold.

Source	Dependent Variable	Mean Square	F	Sig.
Carotenoid treatment	<b>Carotenoid concentration</b>	<b>536063.11</b>	<b>19.279</b>	<b>0.000</b>
	<b>PC1</b>	<b>26.072</b>	<b>19.767</b>	<b>0.000</b>
	<b>Yellow chroma</b>	<b>&lt;0.001</b>	<b>16.300</b>	<b>0.000</b>
	<b>Blue chroma</b>	<b>0.024</b>	<b>40.338</b>	<b>0.000</b>
	<b>Hue</b>	<b>88.822</b>	<b>55.044</b>	<b>0.000</b>
	Brightness	135.537	1.503	0.227
	UV chroma	<0.001	0.024	0.879
Food treatment	Carotenoid concentration	35754.554	1.265	0.267
	PC1	0.579	0.402	0.529
	Yellow chroma	<0.001	2.789	0.102
	Blue chroma	0.001	1.857	0.180
	Hue	0.555	0.344	0.561
	Brightness	12.889	0.143	0.707
	UV chroma	<0.001	1.663	0.204
Carotenoid * Food	Carotenoid concentration	50120.487	1.774	0.190
	<b>PC1</b>	<b>6.860</b>	<b>5.201</b>	<b>0.028</b>
	Yellow chroma	<0.001	0.972	0.330
	Blue chroma	<0.001	0.082	0.776
	Hue	0.331	0.205	0.653
	Brightness	335.936	3.725	0.060
	<b>UV chroma</b>	<b>0.003</b>	<b>5.736</b>	<b>0.021</b>

**Table 3:** Fixed-factorial MANOVA describing the effects of experimental carotenoid and diet manipulation on expression of yellow plumage colour in American Goldfinches *Carduelis tristis*. Variables that were significantly affected by treatment are highlighted in bold.

Source	Dependent Variable	Mean Square	F	Sig.
Carotenoid treatment	PC1	1.265	0.701	0.407
	Yellow chroma	<0.001	0.475	0.495
	Blue chroma	<0.001	3.078	0.86
	Hue	1738.462	0.823	0.369
	Brightness	74.654	1.320	0.257
	UV chroma	0.001	1.625	0.209
Food treatment	PC1	4.718	2.613	0.113
	Yellow chroma	<0.001	2.408	0.128
	<i>Blue chroma</i>	<i>&lt;0.001</i>	<i>3.573</i>	<i>0.065</i>
	Hue	4735.701	2.243	0.141
	Brightness	40.749	0.721	0.401
	UV chroma	<0.001	0.480	0.492
Carotenoid * Food	<i>PC1</i>	<i>7.102</i>	<i>3.934</i>	<i>0.064</i>
	<i>Yellow chroma</i>	<i>&lt;0.001</i>	<i>3.534</i>	<i>0.067</i>
	<i>Blue chroma</i>	<i>&lt;0.001</i>	<i>4.066</i>	<i>0.057</i>
	Hue	1.877	0.001	0.976
	Brightness	0.641	0.011	0.916
	UV chroma	0.002	2.100	0.154

**Table 4:** Fixed-factorial MANOVA describing the effects of experimental carotenoid and diet manipulation on expression of white structural plumage coloration from de-pigmented yellow feathers of American Goldfinches *Carduelis tristis*. Variables that approached being significantly affected by treatment are highlighted in italics.