## Analytical characterization of freeze-dried blueberry powder

Characterization of freeze-dried blueberry powder obtained from Wild Blueberry Association of North America (WBANA) was carried out by Dr. Mario Ferruzzi, Professor in the Department of Food, Bioprocessing and Nutrition Sciences at the Plants for Human Health Institute, North Carolina State University. The composition of anthocyanins and other major constituents are listed in Table 1 and 2.

Anthocyanins in Freeze-dried Wild Blueberry Powder (mg/100 g powder)					
	Cyanidin	Peonidin	Petunidin	Malvidin	Delphinidin
Galactoside	20.08 ± 3.25	14.67± 0.84	20.35 ± 0.58	14.33 ± 0.27	127.01 ± 1.36
Glucoside	27.09 ± 1.57	10.66 ± 0.50	18.16 ± 0.37	20.55 ± 0.28	56.61 ± 2.08
Arabinoside	26.01 ± 2.45	11.56 ± 0.15	14.33 ± 0.27	16.72 ± 0.29	33.73 ± 0.70
Other	11.63 ± 0.08	9.46 ± 1.07	7.52 ± 0.04	9.59 ± 0.07	80.74 ± 1.26
Total	84.81	46.35	60.36	61.19	298.09

Table 1. Anthocyanins in freeze-dried blueberry powder as quantified by LC-MS method

Table 2. Other major constituents in freeze-dried blueberry as quantified by LC-MS method

Other constituents in Freeze-dried Wild Blueberry Powder (mg/100 g powder)					
Chlorogenic	Ferulic Acid	Epicatechin	Myricetin	Quercetin-3-	Syringetin-3-
Acid				Glucoside	Glucoside
248 ± 2.70	4.71 ± 0.11	2.87 ± 0.35	0.68 ± 0.04	31.19 ± 0.59	6.88 ± 0.34

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## **CERTIFICATE OF ANALYSIS**

COA No:	CHG-41895675-0
Supersedes:	None
COA Date	12/18/18
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Received From:	Salt Lake City, UT
Received Date:	12/7/18

Location of Test: (except where noted) Crete, IL

Analytical Results					
Desc. 1: Desc. 2:	FD-BB Freeze dired blueberry powder		Laboratory ID: 383433 Condition Rec'd: NOR		
Analyte	Result	Units	Method Reference	Test Date Loc.	
Ash	1.94	% (w/w)	AOAC 945.46	12/13/18	
Calories by Calculation	406	Cal/100g	Atwater Factors	12/14/18	
Carbohydrates - Calculation	90.84	% (w/w)	Calculation	12/14/18	
Dietary Fiber			AOAC 991.43 (Mod.)	12/13/18	
TDF	15.64	% (w/w)			
Sample Modifications	None	-			
Fat - Mojo, Acid Hydrolysis	3.85	% (w/w)	AOAC 933.05	12/11/18	
Insoluble Dietary Fiber		. ,	AOAC 991.43	12/13/18	
Dried during analysis	No	-			
Defatted during analysis	No	-			
IDF as is	11.62	% (w/w)			
Moisture - Vacuum Oven	1.25	% (w/w)	AOAC 934.06	12/11/18	
Protein - Combustion			AOAC 992.23	12/13/18	
Protein Factor	6.25	-			
Protein	2.12	% (w/w)			
Soluble Dietary Fiber			AOAC 991.43	12/13/18	
Dried during analysis	No	-			
Defatted during analysis	No	-			
SDF as is	4.02	% (w/w)			
Sugars			AOAC 980.13	12/18/18	
Fructose	34.64	% (w/w)			
Glucose	33.48	% (w/w)			
Sucrose	<0.25	% (w/w)			
Maltose	<0.25	% (w/w)			
Lactose	<0.25	% (w/w)			

Jeff Wilson 06 **Division Vice President** 

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