S1. Characteristics of *BMX Força RR* and *Nidera 5909 RR* Cultivars Evaluated in the Field Drying Conditions.

Cultivar	Growth Habit	Production Cycle (Days)	Weight of 1000 Seeds (g)	Dimensions (mm)*			Testa Damage (%)	Ash (%)	Protein (%)	Lipid (%)
				L	*W*	*T*				
BMX Força RR	Undetermined	133	145.6	7.1	6.3	5.3	1	5.6	41.1	19.0
Nidera 5909 RR	Undetermined	101	187.4	7.5	6.7	6.1	20	5.5	37.9	24.1

* L = Length, W = Width, and T = Thickness

S2. Interaction Between Soybean Genotypes x Drying Conditions for Phenolic Acids Content (μg/100 g DW)

Bound-Caffeic Acid		
	Field	110 °C
BMX Força RR	55.73aA	46.45bB
Nidera 5909 RR	47.22bB	58.37aA
	CV (%) 5.67	
Bound-Coumaric acid		
	Field	110 °C
BMX Força RR	429.86bA	369.85bB
Nidera 5909 RR	1054.1aB	1251.81aA
	CV (%) 6.23	
Bound-Hydroxybenzoic acid		
	Field	110 °C
BMX Força RR	344.62aA	359.81bB
Nidera 5909 RR	396.62aB	464.78aA
	CV (%) 6.94	
Bound-Syringic acid.		
	Field	110 °C
BMX Força RR	632.06bA	697.25bA
Nidera 5909 RR	860.3aB	1408.68aA
	CV (%) 11.19	

Results are the Means of Four Determinations, Followed by Different Lowercase Letters for Genotypes and Capital Letters for Drying Conditions Differ by Tukey Test ($P < 0.05$).

S3. Interaction Between Soybean Genotypes x Storage Periods for Phenolic Acids (µg/100 g DW).

Bound-caffeic acid		
	0 Months	12 Months
BMX Força RR	51.56aA	50.62bA
Nidera 5909 RR	49.17aB	56.42aA
	CV (%) 5.67	
Bound-Ferulic acid		
	0 Months	12 Months
BMX Força RR	300.92aB	330.55aA
Nidera 5909 RR	268.22bB	317.37aA
	CV (%) 6.69	
Bound-Hydroxybenzoic acid		
	0 Months	12 Months
BMX Força RR	354.15bA	350.28aA
Nidera 5909 RR	483.02aA	378.38aB
	CV (%) 6.94	
Bound-Syringic acid		
	0 Months	12 Months
BMX Força RR	577.90bB	751.41bA
Nidera 5909 RR	1191.26aA	1077.72aB
	CV (%) 11.19	
Free-Ferulic acid		
	0 Months	12 Months
BMX Força RR	190.1aA	192.53aA
Nidera 5909 RR	94.55bB	132.07bA
	CV (%) 13.04	
Free-Hydroxybenzoic acid		
	0 Months	12 Months
BMX Força RR	3.85aB	62.13bA
Nidera 5909 RR	62.13aB	160.45aA
	CV (%) 10.28	

Results are the Means of Four Determinations, Followed by Different Lowercase Letters for Genotypes and Capital Letters for Storage Periods Differ by Tukey Test ($P < 0.05$).

S4. Interaction Drying Conditions x Storage Periods for Phenolic Acids (μg/100 g DW).

Free-Hydroxybenzoic acid		
	0 Months	12 Months
Field	7.21aB	107.11bA
110 °C	3.33aB	115.47aA
	CV (%) 10.28	
Bound-Caffeic acid		
	0 Months	12 Months
Field	51.70aA	51.26bB
110 °C	49.03aB	55.78aA
	CV (%) 5.67	

Results are the Means of Four Determinations, Followed by Different Lowercase Letters for Drying Conditions, and Capital Letters for Storage Period Differ by Tukey Test ($P < 0.05$).

S5. Interaction Among Soybean Genotypes x Drying Conditions x Storage Periods for Phenolic Acids (µg/100 g DW).

Free-Coumaric acid				
	0 Months		12 Months	
	Field	110 °C	Field	110 C
BMX Força RR	37.35bAβ	38.35bAβ	66.92bBα	201.3bAα
Nidera 5909 RR	130.65aAβ	124.67aAβ	749.22aBα	1031.25aAα
		CV (%) 2.83		
Free-Syringic acid				
	0 Months		12 Months	
	Field	110 C	Field	110 C
BMX Força RR	141.22aAβ	150.62aAβ	356.35bBα	645.17bAα
Nidera 5909 RR	91.60bAβ	7.92bBβ	709.87aBα	976.65aAα
		CV (%) 5.21		
Free-gallic acid				
	0 Months		12 Months	
	Field	110 C	Field	110 C
BMX Força RR	46.02aAα	45.9aAα	44.65aAα	43.92aAα
Nidera 5909 RR	46.20aAα	44.55aAα	43.50aBβ	45.82aAα
		CV (%) 2.98		
Bound-Epicatechin				
	0 Months		12 Months	
	Field	110 C	Field	110 C
BMX Força RR	176.37bBβ	236.42bAβ	259.45aAα	297.87aAα
Nidera 5909 RR	250.77aBα	392.1aAα	252.57aAα	221.10bAβ
		CV (%) 10.33		
Bound-Gallic acid				
	0 Months		12 Months	
	Field	110 C	Field	110 C
BMX Força RR	49.50aAα	37.45bBβ	41.77aAβ	41.57aAα
Nidera 5909 RR	41.10bAα	47.15aAα	38.2bAα	41.37aAα
		CV (%) 9.98		
Bound-Vanillic acid				
	0 Months		12 Months	
	Field	110 C	Field	110 C
BMX Força RR	945.07aAα	680.42bBα	292.05bAβ	299.32bAβ
Nidera 5909 RR	701.27bBα	988.37aAα	329.02aAβ	369.85aAβ
		CV (%) 7.29		

Results are the Means of four Determinations, Followed by Different Lowercase Letters for Genotypes, Capital Letters for Drying Conditions, and Greek Letters for Storage Period Differ by Tukey Test ($P < 0.05$).

S6. Interaction Among Soybean Genotypes x Drying Conditions x Storage Periods for Isoflavones (mmol/100g DW)

Malonyl-Genistin				
	BMX Força RR		*Nidera 5909 RR*	
Drying conditions	0 Months	12 Months	0 Months	12 Months
Field	449.62Aα	384.77Bα	339.92Aβ	141.47Bβ
30 °C	438.97Aα	228.32Bα	286.55Aβ	92.75Bβ
50 °C	421.35Aα	230.95Bα	245.27Aβ	89.97Bβ
70 °C	410.85Aα	214.1Bα	248.1Aβ	85.8Bβ
90 °C	330.82Aα	173.32Bα	188.37Aβ	60.97Bβ
110° C	325.57Aα	165.50Bα	66.5Aβ	50.45Bβ
CV (%) 4.09				

Malonyl-Glycitin				
	BMX Força RR		*Nidera 5909 RR*	
Drying conditions	0 Months	12 Months	0 Months	12 Months
Field	23.37Aβ	19.57Bα	37.95Aα	14.6Bβ
30 °C	25.25Aβ	12.22Bβ	30.5Aα	16.77Bα
50 °C	24.57Aβ	12.7Bβ	31.15Aα	14.95Bα
70 °C	25.22Aβ	13.52Bα	29.12Aα	11.95Bβ
90 °C	20.47Aβ	15.12Bα	23.55Aα	9.97Bβ
110° C	18.12Aβ	13.02Bα	21.22Aα	8.62Bβ
CV (%) 4.14				

Malonyl-Daidzin				
	BMX Força RR		*Nidera 5909 RR*	
Drying Conditions	0 Months	12 Months	0 Months	12 Months
Field	241.77Aα	206.57Bα	140.47Aβ	44.37Bβ
30 °C	272.65Aα	131.65Bα	155.47Aβ	31.7Bβ
50 °C	263.75Aα	128.97Bα	132.92Aβ	31.0Bβ
70 °C	261.3Aα	121.85Bα	145.87Aβ	32.15Bβ
90 °C	214.72Aα	102.00Bα	105.25Aβ	25.00Bβ
110° C	216.37Aα	95.3Bα	26.02Aβ	17.85Bβ
CV (%) 3.55				

β-Daidzin				
	BMX Força RR		*Nidera 5909 RR*	
Drying Conditions	0 Months	12 Months	0 Months	12 Months
Field	237.7Bα	325.1Aα	80.5Bβ	123.62Aβ
30 °C	187.87Bα	308.12Aα	85.57Bβ	102.75Aβ
50 °C	199.32Bα	301.65Aα	67.75Bβ	86.32Aβ
70 °C	196.05Bα	307.32Aα	60.95Bβ	87.4A5β
90 °C	178.72Bα	267.95Aα	67.5Bβ	77.5Aβ
110° C	155.6Bα	269.87Aα	64.07Bβ	66.05Aβ
CV (%) 3.97				

β-Genistin				
	BMX Força RR		*Nidera 5909 RR*	
Drying Conditions	0 Months	12 Months	0 Months	12 Months

Field	151.52Bα	195.15Aα	85.07Bβ	120.5Aβ
30 °C	95.02Bα	201.77Aα	70.55Bβ	102.05Aβ
50 °C	99.05Bα	211.35Aα	56.3Bβ	105.45Aβ
70 °C	112.3Bα	191.02Aα	53.02Bβ	98.3Aβ
90 °C	94.65Bα	166.6Aα	48.2Bβ	84.87Aβ
110 ° C	93.07Bα	170.25Aα	54.92Bβ	69.85Aβ
		CV (%) 6.71		

β-Glycitin

	BMX Força RR		*Nidera 5909 RR*	
Drying Conditions	0 Months	12 Months	0 Months	12 Months
Field	80.47Aα	63.95Bβ	35.45Bβ	189.15Aα
30 °C	37.8Bβ	51.8Aβ	91.3Bα	150.07Aα
50 °C	48.57Aβ	43.17Aβ	88.4Bα	113.97Aα
70 °C	47.05Aβ	47.57Aβ	95.55Bα	118.17Aα
90 °C	38.02Aβ	46.85Aβ	87.05Aα	85.97Aα
110° C	45.2Aβ	35.67Aβ	165.85Aα	38.05Bα
		CV (%) 9.80		

Genistein

	BMX Força RR		*Nidera 5909 RR*	
Drying Conditions	0 Months	12 Months	0 Months	12 Months
Field	1.02Aα	3.57Aβ	1.3Bα	67.02Aα
30 °C	0.77Bβ	64.07Aβ	3.25Bα	146.37Aα
50 °C	0.37Bβ	70.02Aβ	3.7Bα	134.7Aα
70 °C	2.92Bα	93.52Aβ	5.45Bα	180.42Aα
90 °C	12.07Bα	157.15Aβ	6.17Bα	209.55Aα
110 ° C	15.1Bβ	154.27Aβ	181.4Bα	201.82Aα
		CV (%) 5.18		

Glycitein

	BMX Força RR		*Nidera 5909 RR*	
Drying Conditions	0 Months	12 Months	0 Months	12 Months
Field	59.07Aα	60.3Aβ	64.25Bα	133.1Aα
30 °C	58.3Bβ	106.5Aβ	72.4Bα	219.37Aα
50 °C	57.57Bβ	92.27Aβ	72.77Bα	200.95Aα
70 °C	64.67Bβ	134.22Aβ	79.65Bα	462.42Aα
90 °C	75.95Bβ	259.35Aβ	81.47Bα	638.2Aα
110 ° C	101.0Bβ	322.62Aβ	138.7Bα	1234.35Aα
		CV (%) 3.63		

Daidzein

	BMX Força RR		*Nidera 5909 RR*	
Drying Conditions	0 Months	12 Months	0 Months	12 Months
Field	3.85Bα	8.92Aβ	3.35Bα	84.4Aα
30 °C	2.92Bβ	95.95Aβ	9.67Bα	158.27Aα
50 °C	3.87Bα	97.07Aβ	6.6Bα	177.17Aα
70 °C	6.62Bβ	125.65Aβ	10.7Bα	214.7Aα
90 °C	17.45Bα	217.45Aα	9.92Bβ	205.3Aβ

110 ° C	25.22Bβ	230.45Aα	210.37Bα	228.0Aα
		CV (%) 3.19		

Results are the Means of Four Determinations, Followed by Different Capital Letters for Storage Period, and Greek Letters for Soybean Genotypes Differ by Tukey Test ($P < 0.05$).

Supplementary file 7. Regression Equations for Isoflavones as a Function of Drying conditions, Soybean Genotypes, and Storage Period.

Isoflavones	Genotypes	Storage	Equations
Malonyl-Genistin	*BMX Força RR*	0 Months	$Y = 449.62 + 9.29x - 0.71x^2 + 0.01x^3 - 0.0001x^4 + 0.0000007x^5$; $R^2 = 0.958374$
Malonyl-Genistin	*BMX Força RR*	12 Months	$Y = 384.74 - 13.01x + 0.38x^2 - 0.004x^3 + 0.00001x^4$; $R^2 = 0.986858$
Malonyl-Genistin	*Nidera 5909 RR*	0 Months	$Y = 339.92 + 8.64x - 0.73x^2 + 0.01x^3 - 0.0001x^4 + 0.0000006x^5$; $R^2 = 0.982898$
Malonyl-Genistin	*Nidera 5909 RR*	12 Months	$Y = 141.57 - 4.30x + 0.13x^2 - 0.001x^3 + 0.000006x^4$; $R^2 = 0.975929$
Malonil-Glycitin	*BMX Força RR*	0 Months	$Y = 23.37 + 0.92x - 0.06x^2 + 0.001x^3 - 0.00001x^4 + 0.00000005x^5$; $R^2 = 0.875113$
Malonil-Glycitin	*BMX Força RR*	12 Months	$Y = 19.57 - 0.79x + 0.03x^2 - 0.0006x^3 + 0.000005x^4 - 0.00000002x^5$; $R^2 = 0.979807$
Malonil-Glycitin	*Nidera 5909 RR*	0 Months	$Y = 37.95 - 0.79x + 0.02x^2 - 0.0003x^3 + 0.000001x^4$; $R^2 = 0.984214$
Malonil-Glycitin	*Nidera 5909 RR*	12 Months	$14.62 + 0.2x - 0.005x^2 + 0.00002x^3$; $R^2 = 0.952239$
Malonyl-Daidzin	*BMX Força RR*	0 Months	$Y = 241.77 + 9.28x - 0.56x^2 + 0.01x^3 - 0.0001x^4 + 0.0000005x^5$; $R^2 = 0.965743$
Malonyl-Daidzin	*BMX Força RR*	12 Months	$Y = 206.59 - 5.91x + 0.16x^2 - 0.001x^3 + 0.000007x^4$; $R^2 = 0.976736$
Malonyl-Daidzin	*Nidera 5909 RR*	0 Months	$Y = 140.47 + 11.72x - 0.75x^2 + 0.01x^3 - 0.0001x^4 + 0.0000005x^5$; $R^2 = 0.989684$
Malonyl-Daidzin	*Nidera 5909 RR*	12 Months	$Y = 44.42 - 1.10x + 0.03x^2 - 0.0003x^3 + 0.000001x^4$; $R^2 = 0.94898$
β-Genistin	*BMX Força RR*	0 Months	$Y = 151.52 - 0.97x - 0.13x^2 + 0.005x^3 - 0.00006x^4 + 0.0000002x^5$; $R^2 = 0.927412$
β-Genistin	*BMX Força RR*	12 Months	$Y = 195.06 - 1.31x + 0.09x^2 - 0.001x^3 + 0.000007x^4$; $R^2 = 0.689664$
β-Genistin	*Nidera 5909 RR*	0 Months	$Y = 48.20 + 0.53x + 0.003x^2$; $R^2 = 0.706842$
β-Genistin	*Nidera 5909 RR*	12 Months	$Y = 120.45 - 1.86x + 0.06x^2 - 0.0008x^3 + 0.000003x^4$; $R^2 = 0.959127$
β-Glycitin	*BMX Força RR*	0 Months	$Y = 80.43 - 4.41x + 0.14x^2 - 0.001x^3 + 0.000007x^4$; $R^2 = 0.681766$
β-Glycitin	*BMX Força RR*	12 Months	$Y = 60.26 - 0.20x$; $R^2 = 0.432956$
β-Glycitin	*Nidera 5909 RR*	0 Months	$Y = 35.45 + 9.80x - 0.52x^2 + 0.01x^3 - 0.0001x^4 + 0.0000004x^5$; $R^2 = 0.984568$
β-Glycitin	*Nidera 5909 RR*	12 Months	$Y = 189.15 + 7.69x - 0.62x^2 + 0.01x^3 - 0.0001x^4 + 0.0000005x^5$; $R^2 = 0.996516$
β-Daidzin	*BMX Força RR*	0 Months	$Y = 237.63 - 4.7x + 0.15x^2 - 0.001x^3 + 0.000006x^4$; $R^2 = 0.893544$
β-Daidzin	*BMX Força RR*	12 Months	$Y = 325.1 + 5.56x - 0.46x^2 + 0.01x^3 - 0.0001x^4 + 0.0000005x^5$; $R^2 = 0.914981$

β-Daidzin	*Nidera 5909 RR*	0 Months	$Y = 123.78 - 0.59x - 0.012x^2 + 0.0003x^3 - 0.000001x^4$; $R^2 = 0.972758$
β-Daidzin	*Nidera 5909 RR*	12 Months	$Y = 123.62 + 2.76x - 0.24x^2 + 0.005x^3 - 0.00005x^4 + 0.0000002x^5$; $R^2 = 0.987329$
Genistein	*BMX Força RR*	0 Months	$Y = 1.02 - 0.32x + 0.02x^2 - 0.0008x^3 + 0.00001x^4 - 0.00000004x^5$; $R^2 = 0.979328$
Genistein	*BMX Força RR*	12 Months	$Y = 3.57 + 2.07x + 0.07x^2 - 0.004x^3 + 0.00006x^4 - 0.0000002x^5$; $R^2 = 0.998255$
Genistein	*Nidera 5909 RR*	0 Months	$Y = 1.3 + 4.3x - 0.32x^2 + 0.009x^3 - 0.0001x^4 + 0.0000004x^5$; $R^2 = 0.998128$
Genistein	*Nidera 5909 RR*	12 Months	$Y = 67.02 + 16.10x - 0.85x^2 + 0.01x^3 - 0.0001x^4 + 0.0000004x^5$; $R^2 = 0.986956$
Glycitein	*BMX Força RR*	0 Months	$Y = 59.09 + 0.03x^2 - 0.004x^3 + 0.00006x^4$; $R^2 = 0.986537$
Glycitein	*BMX Força RR*	12 Months	$Y = 60.05 + 9.18x - 0.41x^2 + 0.006x^3 - 0.00002x^4$; $R^2 = 0.992336$
Glycitein	*Nidera 5909 RR*	0 Months	$Y = 64.25 + 3.22x - 0.005x^2 + 0.21x^3 - 0.00005x^4 + 0.0000002x^5$; $R^2 = 0.989734$
Glycitein	*Nidera 5909 RR*	12 Months	$Y = 133.10 + 62.84x - 4.20x^2 + 0.09x^3 - 0.0009x^4 + 0.000003x^5$; $R^2 = 0.999398$
Daidzin	*BMX Força RR*	0 Months	$Y=3.85-0.70x + 0.05x^2-0.001x^3+0.00001x^4-0.00000005x^5$; $R^2 = 0{,}98$
Daidzein	*BMX Força RR*	12 Months	$Y= 8.92 + 3.76x - 0.06x^2 + 0.005x^3 + 0.00008x^4 - 0.0000003\ x^5$; $R^2 = 0.999186$
Daidzein	*Nidera 5909 RR*	0 Months	$Y = 3.35 + 6.68x - 0.48x^2 + 0.01x^3 - 0.0001x^4 + 0.0000005x^5$; $R^2 = 0.998581$
Daidzein	*Nidera 5909 RR*	12 Months	$Y = 84.4 + 12.27x - 0.67x^2 + 0.01x^3 - 0.0001x^4\ 0.0000005x^5$; $R^2 = 0.995215$