



Brazil Soybean Transportation

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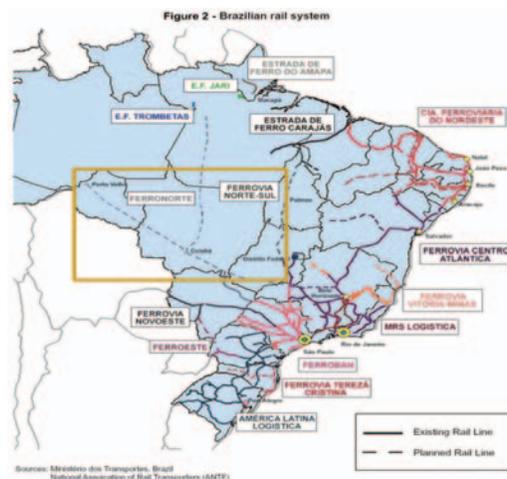
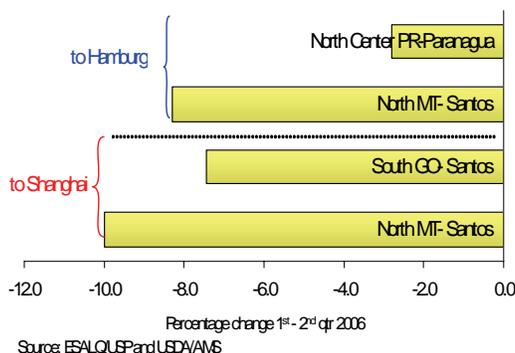
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2nd Qtr Transport Costs Fall for Brazil Soybeans. Total Brazilian soybean transportation costs were 5 – 17 percent lower in the 2nd quarter than the same period last year. Contributing to the decline were a 20-percent drop in ocean rates (table below) due to lower Brazilian iron ore shipments, an increase in the number of vessels available, and soybean producers holding back shipments in hopes of higher prices. Rates from the areas of Mato Grasso (MT), Paraná (PR) and Goiás (GO) also fell 3 - 10 percent from 1st quarter of this year (figure 1). A surplus of trucks, especially in the MT area, coinciding with the end of Brazil's soybean harvest that began last December, was the primary reason for the 1st to 2nd quarter decline this Spring in transport costs (figure 1, table 1 of the report (SIFRECA)). The cost of shipping a metric ton of soybeans 100 miles by truck fell from \$7.48 in March to \$6.62 in June (table 3 of the report). Still, transportation costs represent over 40 percent of the total landed cost of shipping soybeans from MT to Shanghai and Hamburg, (table below and table 1 of the report).

Figure 1- Brazil soybean transportation costs fell, 2nd Qtr.



	2005			2006		
	2 nd qtr.	2 nd qtr.	Percent change	2 nd qtr.	2 nd qtr.	Percent change
	NW RS ¹ -RG ²			N. MT ¹ - PAR ²		
	--\$/mt--			--\$/mt--		
Truck	12.68	11.74	-7.43	79.07	81.63	3.24
Ocean	44.39	35.41	-20.23	44.84	35.91	-19.92
Total transportation	57.07	47.15	-17.39	123.91	117.54	-5.14
Farm Value ³	210.19	198.03	-5.79	161.38	150.72	-6.61
Landed Cost	267.26	245.17	-8.26	285.29	268.26	-5.97
Transport % of landed cost	21.35	19.23	-9.94	43.43	43.82	0.88
	S. GO ¹ -Santos ²			N. Center PR ¹ -PAR ²		
	--\$/mt--			--\$/mt--		
Truck	40.11	41.40	3.21	22.82	20.43	-10.48
Ocean	45.84	36.91	-19.48	44.84	35.91	-19.92
Total transportation	85.95	78.31	-8.89	67.66	56.34	-16.73
Farm Value ³	179.81	175.49	-2.40	207.04	194.83	-5.90
Landed Cost	265.76	253.80	-4.50	274.70	251.16	-8.57
Transport % of landed cost	32.34	30.85	-4.60	24.63	22.43	-8.93

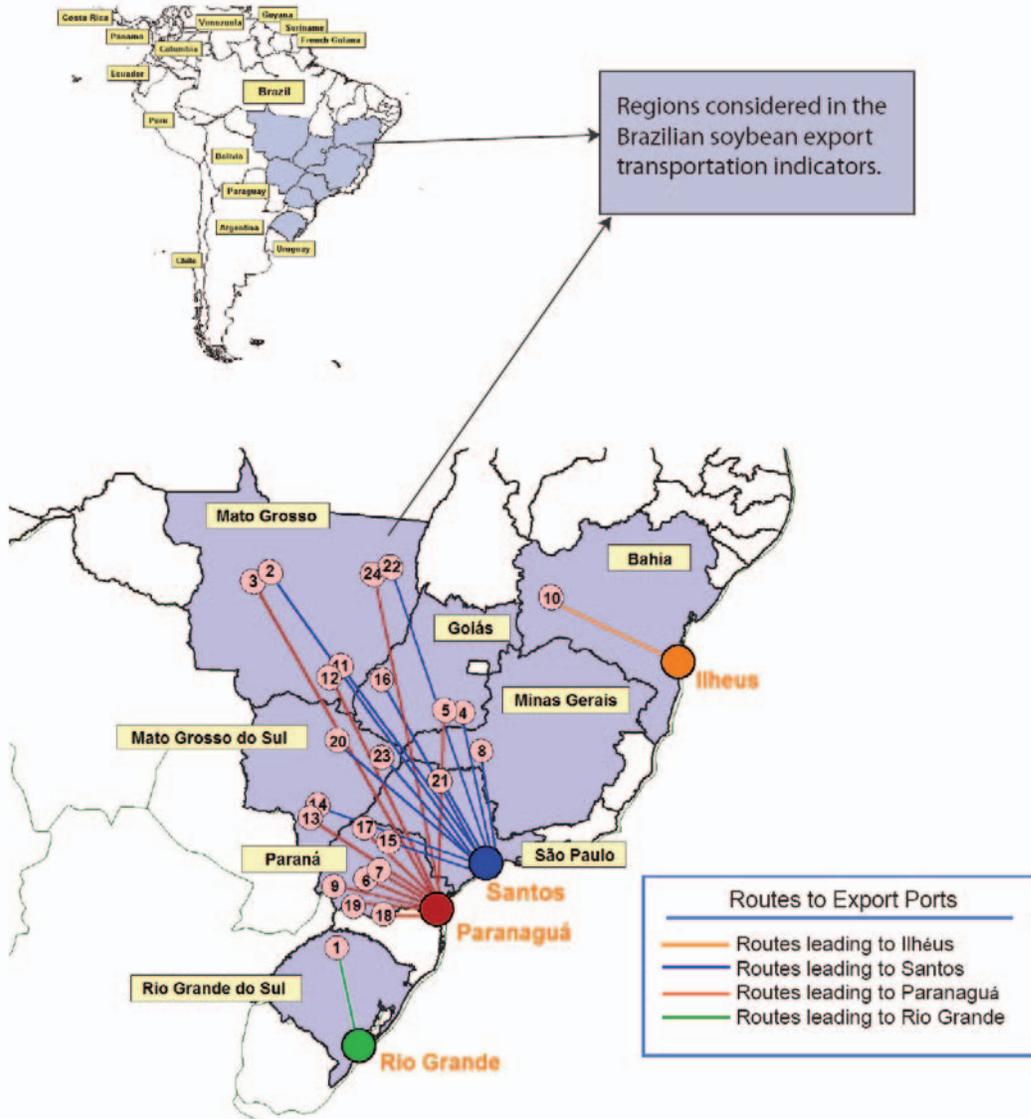
Lack of Rail Favors Trucks in Center-West Brazil. Truck rates tend to be higher in the Brazilian Center-West region (MT, GO, and Mato Grosso do Sul) due to a lack of intermodal competition (table, left and table 1 of the report). This region's railway system connecting producing areas to ports is not as developed as in the southern region of Santa Catarina, RS and PR (figure 2). And in MT, the rail system is almost non-existent (yellow square, figure 2). Consequently, MT producers must use trucks to move grain to export terminals through Porto Velho—a river port—or the Ports of Santos and Paranaguá. But in the southern region, intermodal competition between rail and truck keeps rates lower. delmy.salin@usda.gov and ahgameir@esalq.usp.br

¹Producing regions: RS = Rio Grande do Sul, MT= Mato Grosso, GO = Goiás, PR = Paraná
²Export ports: RG = Rio Grande, PAR = Paranaguá; ³Source: Companhia Nacional de Abastecimento
 Source: ESALQ/ USP, Brazil and USDA/AMS

Brazil Soybean Transportation Indicators

Figure 1

Routes and regions considered in the Brazilian soybean export transportation indicator¹



¹Regions comprised 82 percent of Brazilian soybean production, 2005
 Source: USDA/AMS & ESALQ - University of São Paulo (USP), Brazil

Table 1—Quarterly costs of transporting Brazilian soybeans to Shanghai, China and Hamburg, Germany

	2006					2006				
	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Average	1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Average
Shanghai, China										
	North MT¹ - Santos²					North MT¹ - Paranagua²				
	-\$/mt-					-\$/mt-				
Truck	86.22	79.20				84.65	81.63			
Ocean	50.13	44.80				49.13	43.80			
Total transportation	136.36	124.00				133.78	125.43			
Farm Value ³	157.86	150.72				157.86	150.72			
Landed Cost	294.22	274.71				291.65	276.15			
Transport % of landed cost	46.35	45.14				45.87	45.42			
	Southeast MT¹ - Santos²					North Center PR¹ - Paranagua²				
	-\$/mt-					-\$/mt-				
Truck	65.24	58.78				19.41	20.43			
Ocean	50.13	44.80				49.13	43.80			
Total transportation	115.37	103.58				68.54	64.23			
Farm Value ³	157.86	150.72				206.88	194.83			
Landed Cost	273.24	254.30				275.42	259.05			
Transport % of landed cost	42.22	40.73				24.89	24.79			
	South GO¹ - Santos²					Northwest RS¹ - Rio Grande²				
	-\$/mt-					-\$/mt-				
Truck	42.49	41.40				13.54	11.74			
Ocean	50.13	44.80				48.63	43.30			
Total transportation	92.62	86.20				62.17	55.04			
Farm Value ³	180.71	175.49				202.56	198.03			
Landed Cost	273.33	261.69				264.73	253.06			
Transport % of landed cost	33.89	32.94				23.49	21.75			
Hamburg, Germany										
	North MT¹ - Santos²					North MT¹ - Paranagua²				
	-\$/mt-					-\$/mt-				
Truck	86.22	79.20				84.65	81.63			
Ocean	39.51	36.91				38.51	35.91			
Total transportation	125.73	116.11				123.16	117.54			
Farm Value ³	157.86	150.72				157.86	150.72			
Landed Cost	283.60	266.82				281.02	268.26			
Transport % of landed cost	44.34	43.51				43.83	43.82			
	Southeast MT¹ - Santos²					North Center PR¹ - Paranagua²				
	-\$/mt-					-\$/mt-				
Truck	65.24	58.78				19.41	20.43			
Ocean	39.51	36.91				38.51	35.91			
Total transportation	104.75	95.69				57.92	56.34			
Farm Value ³	157.86	150.72				206.88	194.83			
Landed Cost	262.61	246.41				264.79	251.16			
Transport % of landed cost	39.89	38.83				21.87	22.43			
	South GO¹ - Santos²					Northwest RS¹ - Rio Grande²				
	-\$/mt-					-\$/mt-				
Truck	42.49	41.40				13.54	11.74			
Ocean	39.51	36.91				37.06	35.41			
Total transportation	82.00	78.31				50.60	47.15			
Farm Value ³	180.71	175.49				202.56	198.03			
Landed Cost	262.71	253.80				253.16	245.17			
Transport % of landed cost	31.21	30.85				19.99	19.23			

¹Producing regions: RS = Rio Grande do Sul, MT= Mato Grosso, GO= Goiás, PR = Paraná

²Export ports

³Source: Companhia Nacional de Abastecimento (CONAB) www.conab.gov.br

Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Table 2

Truck rates for selected Brazilian soybean export transportation routes, 2nd quarter 2006

Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	Share (%) ³	Freight price (per 100 miles) ⁴
1	Northwest RS ⁵ (Cruz Alta)	Rio Grande	288	3.35	4.08
2	North MT(Sorriso)	Santos	1190	14.90	6.66
3	North MT(Sorriso)	Paranaguá	1262	14.05	6.47
4	South GO(Rio Verde)	Santos	587	7.45	7.05
5	South GO(Rio Verde)	Paranaguá	726	6.02	5.20
6	North Center PR(Londrina)	Paranaguá	268	3.83	7.62
7	Western Center PR(Mamborê)	Paranaguá	311	3.48	4.82
8	Triangle MG(Uberaba)	Santos	339	4.56	10.29
9	West PR(Assis Chateaubriand)	Paranaguá	377	3.49	6.69
10	West Extreme BA(São Desidério)	Ilhéus	544	5.71	6.91
11	Southeast MT(Primavera do Leste)	Santos	901	4.09	6.52
12	Southeast MT(Primavera do Leste)	Paranaguá	975	3.78	6.35
13	Southwest MS(Maracaju)	Paranaguá	612	2.81	9.02
14	Southwest MS(Maracaju)	Santos	652	2.64	7.44
15	West PR(Assis Chateaubriand)	Santos	550	2.39	5.82
16	East GO(Cristalina)	Santos	585	2.17	6.84
17	North PR(Cornélio Procópio)	Paranaguá	306	1.68	7.09
18	Eastern Center PR(Castro)	Paranaguá	130	2.46	8.21
19	South Center PR(Guarapuava)	Paranaguá	204	1.92	8.49
20	North Center MS(São Gabriel do Oeste)	Santos	720	2.00	6.26
21	Ribeirão Preto SP(Guairá)	Santos	314	1.45	8.51
22	Northeast MT(Canarana)	Santos	950	2.29	7.81
23	East MS(Chapadão do Sul)	Santos	607	1.42	6.82
24	Northeast MT(Canarana)	Paranaguá	1075	2.03	7.05
Average			749	100	6.83

¹Although each origin region comprises several cities, the main city is considered as a reference to establish the freight price

²Distance from the main city of the considered region to the mentioned ports

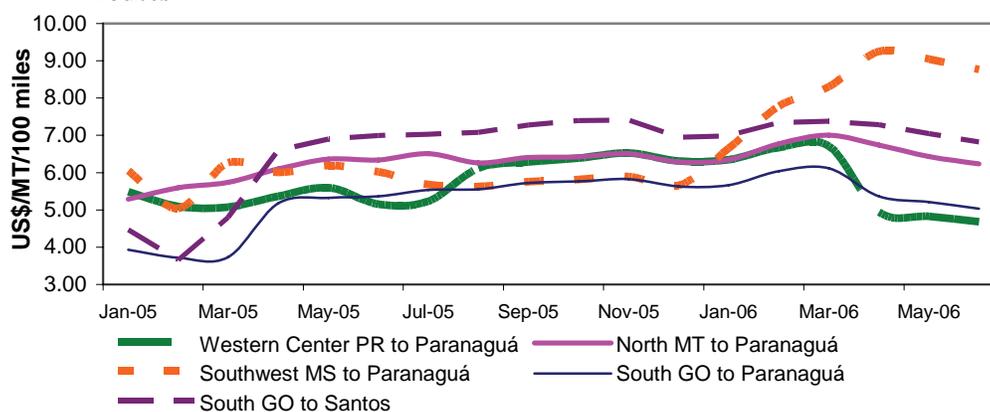
³The share is measured as a percentage of total production

⁴US\$ per metric ton (average monthly exchange rate from "Banco Central do Brasil" was used to convert Brazilian reais to the U.S. dollar)

⁵RS = Rio Grande do Sul, MT= Mato Grosso, GO = Goiás, PR = Paraná, MG = Minas Gerais, BA = Bahia, MS = Mato Grosso do Sul, SP = São Paulo (routes 16, 17 and 23 have been modified effective 2nd quarter 2006 to reflect changes in market conditions)

Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Figure 2

Truck rates for selected Brazilian soybean export transportation routes

Source: ESALQ/ USP (University of São Paulo, Brazil) and USDA/AMS

Table 3

Monthly Brazilian soybean export truck transportation cost index

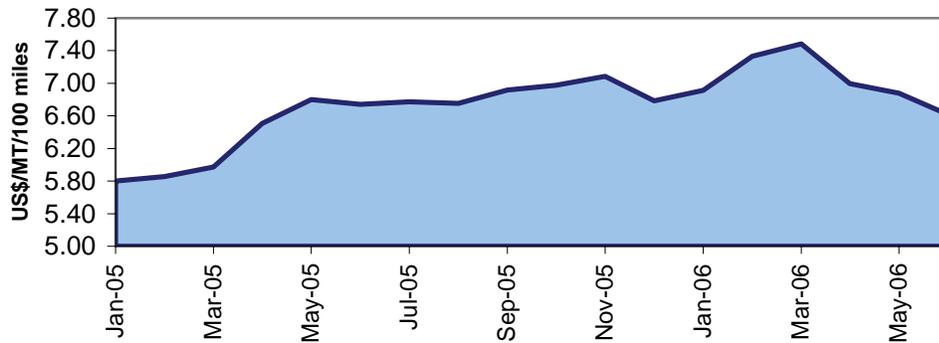
Month	Freight price* (per 100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan. 05 = 100)
Jan. 05	5.80		100.00
Feb. 05	5.85	0.9	100.90
Mar. 05	5.97	2.0	102.92
Apr. 05	6.51	9.0	112.14
May 05	6.80	4.5	117.22
Jun. 05	6.74	-0.9	116.22
Jul. 05	6.77	0.5	116.76
Aug. 05	6.75	-0.3	116.41
Sep. 05	6.92	2.5	119.27
Oct. 05	6.98	0.9	120.28
Nov. 05	7.09	1.6	122.15
Dec. 05	6.78	-4.3	116.95
Jan. 06	6.91	1.9	119.18
Feb. 06	7.33	6.0	126.36
Mar. 06	7.48	2.1	129.02
Apr. 06	6.99	-6.6	120.57
May 06	6.88	-1.7	118.56
Jun. 06	6.62	-3.8	114.05

*Weighted average and quoted in US\$ per metric ton

Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Figure 3

Brazilian soybean export truck transportation weighted average prices, 2005/06



Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Table 4

Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Hamburg, Germany and Shanghai, China (US\$/metric ton)*

Ports	Hamburg				Shanghai			
	2006 1 st qtr	2006 2 nd qtr	2006 3 rd qtr	2006 4 th qtr	2006 1 st qtr	2006 2 nd qtr	2006 3 rd qtr	2006 4 th qtr
Santos	39.51	36.91			50.13	44.80		
Paranagua	38.51	35.91			49.13	43.80		
Rio Grande	37.06	35.41			48.63	43.30		

Source: Sistema de Informações de Fretes, SIFRECA, ESALQ/USP (University of São Paulo, Brazil)

*Correspond to the average actual values negotiated between shippers and carriers and weighted according to the magnitude of the shipped volumes

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United States Has Relative Cost Advantage for Shipping Soybeans. Although soybean exports from Brazil are projected to exceed soybean exports from the United States during 2005/06 marketing year, the United States retains the competitive advantage in transportation costs. United States transportation costs for soybean exports represent a smaller percentage of total landed costs than Brazil's. Total transportation costs for soybean shipments decreased from both Brazil and the United States to Hamburg, Germany. However, United States transportation costs represent only about 20-21 percent of the landed cost, but Brazil's represent 20-44 percent (table 1).

Table 1-Quarterly costs of transporting soybeans from U.S. and Brazil to Hamburg, Germany

	2005			2006		
	4th qtr.	1st qtr.	Percent change	4th qtr.	1st qtr.	Percent change
United States						
	Minneapolis, MN			Davenport, IA		
	--\$/mt--	--%--		--\$/mt--	--%--	
Truck	10.06	9.42	-6.36	10.06	9.42	-6.36
Barge	36.71	25.38	-30.86	30.91	21.42	-30.71
Ocean ¹	22.81	19.53	-14.38	22.81	19.53	-14.38
Total transportation ²	69.58	54.33	-21.91	63.78	50.37	-21.03
Farm Value ³	207.11	202.34	-2.30	207.60	204.78	-1.36
Landed Cost	276.69	256.67	-7.23	271.38	255.15	-5.98
Transport % of landed cost	25.15	21.17		23.50	19.74	
Brazil						
	Northwest RS⁴ - Rio Grande⁵			North MT⁴ - Paranaguá⁵		
	--\$/mt--	--%--		--\$/mt--	--%--	
Truck	13.20	13.54	2.58	80.86	84.65	4.69
Ocean ⁶	55.23	37.06	-32.90	55.73	38.51	-30.90
Total transportation ²	68.43	50.60	-26.06	136.59	123.16	-9.83
Farm Value ⁷	206.36	202.56	-1.84	174.28	157.86	-9.42
Landed Cost	274.79	253.16	-7.87	310.87	281.02	-9.60
Transport % of landed cost	24.90	19.99		43.94	43.83	
	South GO⁴ - Santos⁵			North Center PR⁴ - Paranaguá⁵		
	--\$/mt--	--%--		--\$/mt--	--%--	
Truck	42.56	42.49	-0.16	21.25	19.41	-8.66
Ocean	56.73	39.51	-30.35	55.73	38.51	-30.90
Total transportation ²	99.29	82.00	-17.41	76.98	57.92	-24.76
Farm Value ⁷	184.89	180.71	-2.26	214.81	206.88	-3.69
Landed Cost	284.18	262.71	-7.56	291.79	264.80	-9.25
Transport % of landed cost	34.94	31.21		26.38	21.87	

¹Source: The Baltic Exchange; ²Excludes handling charges

³Source: USDA/NASS

⁴Producing regions: RS = Rio Grande do Sul, MT = Mato Grosso, GO = Goiás, PR = Paraná

⁵Export ports

⁶Source: ESALQ/ USP (University of São Paulo, Brazil) and USDA/AMS

⁷Source: Companhia Nacional de Abastecimento (CONAB) www.conab.gov.br

22 percent during the 1st quarter (table 2). Rates decreased across all transportation modes during this period. Although 4th quarter rates were not available for the Brazil-Shanghai route, there is nothing to indicate that trends would be different from those on the Brazil to Hamburg route (table 1). The total transportation cost of shipping soybeans from Brazil to Shanghai represent 23-46 percent of the landed cost, while the United States transportation cost represent about 25-26 percent of the landed cost.

The government of Brazil has recently announced an emergency aid package in the form of price supports aimed at alleviating Brazilian farmers' indebtedness and improving the adverse agricultural situation caused by the strong Brazilian currency (real), and high production and transportation costs.

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Although soybean exports from Brazil are projected to exceed soybean exports from the United States during 2005/06 marketing year, the United States retains the competitive advantage in transportation costs. United States transportation costs for soybean exports represent a smaller percentage of total landed costs than Brazil's. Total transportation costs for soybean shipments decreased from both Brazil and the United States to Hamburg, Germany. However, United States transportation costs represent only about 20-21 percent of the landed cost, but Brazil's represent 20-44 percent (table 1).

U.S. ocean freight rates decreased 14 percent during the 1st quarter, mostly due to a sharp reduction in barge rates, which decreased 31 percent from the 4th quarter 2005. U.S. trucking rates also decreased during this period. However, Brazil ocean freight rates fell even more—by 30-33 percent during the 1st quarter.

Similarly, soybean transportation costs from the United States to Shanghai, China, decreased 21-

Table 2-Quarterly costs of transporting soybeans from U.S. and Brazil to Shanghai, China

	2005			2006		
	4th qtr.	1st qtr.	Percent change	4th qtr.	1st qtr.	Percent change
United States						
	Minneapolis, MN			Davenport, IA		
	--\$/mt--	--%--		--\$/mt--	--%--	
Truck	10.06	9.42	-6.36	10.06	9.42	-6.36
Barge	36.71	25.38	-30.86	30.91	21.42	-30.71
Ocean ¹	43.69	35.71	-18.27	43.69	35.71	-18.27
Total transportation ²	90.46	70.51	-22.05	84.66	66.55	-21.40
Farm Value ³	207.11	202.34	-2.30	207.60	204.78	-1.36
Landed Cost	297.57	272.85	-8.31	292.26	271.33	-7.16
Transport % of landed cost	30.40	25.84		28.97	24.53	
Brazil						
	Northwest RS⁴ - Rio Grande⁵			North MT⁴ - Paranaguá⁵		
	--\$/mt--	--%--		--\$/mt--	--%--	
Truck		13.54			84.65	
Ocean ⁶		48.63			49.13	
Total transportation ²		62.17			133.78	
Farm Value ⁷		202.56			157.86	
Landed Cost		264.73			291.64	
Transport % of landed cost		23.48			45.87	
	South GO⁴ - Santos⁵			North Center PR⁴ - Paranaguá⁵		
	--\$/mt--	--%--		--\$/mt--	--%--	
Truck		42.49			19.41	
Ocean		50.13			49.13	
Total transportation ²		92.62			68.54	
Farm Value ⁷		180.71			206.88	
Landed Cost		273.33			275.42	
Transport % of landed cost		33.89			24.89	

¹Source: The Baltic Exchange; ²Excludes handling charges

³Source: USDA/NASS

⁴Producing regions: RS = Rio Grande do Sul, MT = Mato Grosso, GO = Goiás, PR = Paraná

⁵Export ports

⁶Source: ESALQ/ USP (University of São Paulo, Brazil) and USDA/AMS

⁷Source: Companhia Nacional de Abastecimento (CONAB) www.conab.gov.br

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