

Maersk Lines centralising rail transport of citrus for export from Johannesburg

The production estimate for the northern regions suggests that approximately 100 million (15 kg equivalent) cartons could be packed and shipped for export by the 2022 season. This volume is up from 72.4 million in 2017 and 83.5 million in 2018.

There are a number of notable problems that are likely to arise, given the significant increase in volume that is most likely to be shipped from the Durban port:

1. DEMAND ON ROAD TRANSPORT: Calculations show that there will likely be an increased demand for up to 400 road truck trips per week to transport the additional volume. This equates to roughly 8 000 road truck trips per annum. The demand for road transport is set to outstrip supply significantly.

2. DURBAN COLD STORAGE CAPACITY: Currently, the Durban port has a collective 55 000 pallets cold storage capacity. By 2022, the peak season capacity requirement is likely to reach 72,000 cold storage pallet spaces. This gives a deficit of some 17 000 cold storage pallet spaces required, and it's unlikely that there will be sufficient capacity to meet the forecast.

3. DURBAN PORT OPERATIONS: Peak season presents various challenges, one of them being that an additional volume of containers is expected to exacerbate the current operational challenges in the port.

The only viable alternative is to increase the railing of citrus exports in containers from the inland regions. In fact, the CGA has identified that at least 10 000 reefer containers of citrus will need to be moved to the ports by 2022 to offset the vast increase in road transport demands. Not to mention the cold storage demands anticipated for 2022. The main rail sites that are presently railing containers are from Tzaneen and Bela-Bela in Limpopo. There are, however, challenges associated with increasing the volume of containers railed from these sites, such as limited ground space to store empty and full containers, limited supply of electricity and reefer plug points, and a shortage of reefer train sets. When considering these challenges the only viable alternative that could be considered is railing reefer containers without power

CGA Region	2012	2013
Boland	3,840,756	3,806,072
E. Cape Midlands	1,786,820	1,860,220
Hoedspruit	8,052,939	9,252,818
Letsitele	15,240,763	16,638,614
Limpopo River	5,702,523	6,477,433
Nelspruit	5,115,969	5,927,044
Nkweleni	1,076,055	1,213,489
Onderberg	5,270,715	5,442,625
Orange River	773,134	806,874
Patensie	6,889,134	6,489,732
Pongola	415,641	441,959
S.R. Valley	18,758,893	19,195,515
Senwes	12,795,021	16,737,724
S-KZN	572,843	626,650
Swaziland	1,484,000	1,454,000
Vaalharts	104,349	258,177
W. Cape	12,867,918	12,626,847
Zimbabwe	2,035,000	2,376,280
Grand Total	102,782,473	111,632,073
Northern Region	57,761,469	66,588,636
EC Region	27,539,196	27,803,644
WC & NC Region	17,481,808	17,239,793

Comparing South African and Moroccan citrus CONTINUED FROM PAGE 29 1.2 million tons, compared to SA's 44 700 hectares producing about 1.5 million tons. According to the USDA report, Moroccan orange production for 2018/19 is forecast at a record 1.2 million tons, up 18 percent the previous year due to favourable weather and increased area. Consumption of fresh oranges at 950 000 tons exceeds orange exports, which are expected to reach 190 000 tons. Exports are 42 percent up due to supply. Exports to the United States increased by 230% due to regained market access. Morocco is the third most significant non-European supplier of fresh oranges to the EU, trailing a distance behind SA and Egypt. As can be seen on the graph on page 29, there is some overlap of supply in and around the month of June.

Lemon/lime production is expected to reach 45 000 tons in Morocco this season, 25 percent up on the previous season. Again, fresh domestic consumption at 28 000 tons exceeds exports (up 88% on last season) and is expected to reach 17000 tons, which is a fraction of SA's total lemon exports of a little under 290 000 tons.

Whilst the two countries do not currently compete head to head to any great extent, the main potential for competition exists for soft citrus around April, and for oranges around the month of June in certain markets. The residual stocks of Moroccan, Turkish and Egyptian stock are likely to increasingly affect SA fortunes in the early parts of these respective export seasons.



SOUTHERN AFRICA CITRUS EXPORT PRODUCTION ESTIMATES 2022

2014	2015	2016	2017	2018	2019 Est. Ha <4 Yrs	Ha Total% Ha <4 Yrs% Vol Increase	Vol Increase	Est. 2022			
4,693,675	4,257,116	4,944,733	5,107,872	5,108,587	6,100,000	2,401	4,698	51%	105%	3,860,000	9,150,000
1,889,524	2,256,658	2,501,352	1,879,686	2,383,000	2,650,000	403	1,875	21%	27%	852,500	3,600,000
9,517,119	10,141,970	6,344,765	11,614,609	12,270,902	11,400,000	1,436	6,369	23%	29%	2,725,000	14,175,000
17,339,995	18,599,858	14,565,424	18,747,750	21,203,824	17,900,000	2,143	11,121	19%	24%	4,030,000	24,355,000
6,494,702	6,599,897	6,290,854	7,714,782	9,199,139	7,975,000	673	4,571	15%	17%	1,175,000	10,100,000
6,180,527	6,491,168	5,882,377	7,869,522	6,750,271	8,756,000	2,047	5,661	36%	57%	3,300,000	11,005,000
1,083,645	1,189,677	1,193,463	1,565,172	1,320,518	1,475,000	130	1,169	11%	12%	185,000	1,862,500
4,353,115	4,767,171	4,001,109	4,119,029	4,688,099	4,460,000	489	2,970	16%	20%	782,500	5,186,500
967,228	1,140,777	1,540,369	2,080,183	1,869,844	2,125,000	287	1,511	19%	23%	275,000	2,375,000
8,081,512	7,945,105	8,897,550	8,320,027	8,069,144	9,900,000	1,643	5,345	31%	44%	4,200,000	13,325,000
375,091	441,095	364,862	415,863	434,919	396,000	11	192	5%	6%	15,000	460,000
21,476,031	22,316,270	20,836,036	19,021,027	21,253,090	24,300,000	3,709	13,854	27%	37%	10,700,000	33,100,000
13,573,871	13,464,853	14,347,513	16,650,771	22,814,171	21,335,000	2,320	10,990	21%	27%	5,400,000	25,000,000
501,915	604,584	458,081	611,862	699,064	770,000	138	584	24%	31%	190,500	2,755,500
1,060,000	719,660	622,000	562,115	920,968	875,000	80	484	17%	20%	55,000	950,000
213,139	312,036	329,627	368,340	405,391	387,500	46	288	16%	19%	67,500	437,500
14,746,084	13,934,100	13,911,476	13,337,683	13,523,051	15,650,000	2,427	10,229	24%	31%	4,000,000	17,800,000
2,559,330	2,558,200	2,196,900	2,546,900	3,210,300	3,285,000	282	1,853	15%	18%	295,000	3,555,000
115,106,503	117,740,196	109,228,491	122,533,192	136,124,282	139,739,500	20,664	83,764	25%	33%	42,108,000	179,192,000
63,039,310	65,578,132	56,267,348	72,418,374	83,512,175	78,627,000	9,749	45,964	21%	27%	18,153,000	99,404,500
31,660,206	32,830,069	32,564,565	29,589,080	32,110,625	37,237,500	5,800	21,362	27%	37%	15,820,000	50,462,500
20,406,987	19,331,994	20,396,578	20,525,738	20,501,482	23,875,000	5,115	16,438	31%	45%	8,135,000	29,325,000

Table1: Citrus Export Production Historical and Forecast Projection to 2022 (Source: PPECB/CGA)

from Johannesburg to Durban. The Grindrod, Denver, City Deep ICD site was identified as being viable to receive and store citrus ambient, and then to pack the fruit into containers to be staged under power onsite, awaiting transport by rail to port for export. Since the Durban port experiences a severe cold storage capacity shortage during citrus season, the opportunity to store citrus in ambient warehouses makes a lot of sense, as a short-term alternative. This will resolve congestion issues at the Durban port. Exports of grapefruit, lemons and Valencias to markets such as Canada, Russia, the Middle East and Far East (to markets that do not require cold treatment) can be stored in ambient conditions, whereby the reefer container is packed, commences the cooling, and maintains the cold chain during shipping.

Dr Paul Cronjé (et al) has done extensive research on loading of ambient fruit into reefer containers. The trials show that the container can cool the fruit to set point (e.g. 4.5°C), after approximately 96 hours of packing the container. In some respects, this method can be more conducive to applying better cold chain than the conventional method of transporting citrus to port cold stores for export. This, considering that a truck could stand in Durban for 48 hours with fruit remaining in ambient for a further 24 hours, before being placed into the cold rooms. Maersk Lines are offering the service from City Deep as a carrier haulage plus service option, meaning that the entire landside service is covered by Maersk from warehousing, ICD container plug-in, staging and raiting to port.

THE PROPOSED METHOD OF OPERATION IS:

OPTION 1:

1. Transport pallets from the packhouse by road to Grindrod Denver ICD.
2. Stage pallets in load out sequence at the warehouse, for a maximum of 3 days.
3. Reefer containers are packed and staged on power at the Grindrod ICD.
4. Block trains of reefer containers are then railed from Grindrod ICD during night time hours to DCT.
5. DCT offloads reefers and places them into stack; the empty rail set is then replenished with non-PTI reefers, from the ship for onward rail to Grindrod ICD.
6. Reefers are cleaned and PTI at Grindrod ICD.

OPTION 2:

1. Collect empty PTI reefer container ex Grindrod ICD.
2. Transport reefer container to inland cold store or packhouse.
3. Load container with citrus.
4. Transport full container to Grindrod ICD and stage on power at the Grindrod ICD.
5. Block trains of reefer containers are railed at night from Grindrod ICD to DCT.
6. DCT offloads the reefers and places them into stack; the empty rail set is replenished with non-PTI reefers from the ship, for onward rail to Grindrod ICD.
7. Reefers are cleaned and PTI at Grindrod ICD.

Table 2: Provisional Costing Comparison (Source: CGA).

Conventional ex-Durban cold store with precooling					
	Marble Hall	Nelspruit	Hoedspruit	Letsitele	Limpopo River
Road transport to Durban - Truck	14,000	18,000	20,000	22,000	26,000
Road transport to Durban - Pallet	538	692	769	846	1,000
Cold storage and cross dock - Pallet	350	350	350	350	350
Haulage to DCT - Container	2,200	2,200	2,200	2,200	2,200
Haulage to DCT - Pallet	110	110	110	110	110
Cost per Pallet	998	1,152	1,229	1,306	1,460
Cost per Container	19,969	23,046	24,585	26,123	29,200
1. City Deep ambient rail - cross dock via Grindrod Denver site					
	Marble Hall	Nelspruit	Hoedspruit	Letsitele	Limpopo River
Road transport to City Deep - Truck	7,000	10,200	13,500	14,500	16,800
Road transport to City Deep - Pallet	280	408	540	580	672
Road transport to City Deep - Container	5,600	8,160	10,800	11,600	13,440
Cross dock and Plug in - Container	3,750	3,750	3,750	3,750	3,750
Ambient Rail City Deep to DCT - Container	8,000	8,000	8,000	8,000	8,000
Cost per Container	17,350	19,910	22,550	23,350	25,190
2. City Deep ambient rail - cross dock via inland packhouse					
	Marble Hall	Nelspruit	Hoedspruit	Letsitele	Limpopo River
Road transport Container City Deep - Inland - City Deep	7,000	10,200	13,500	14,500	16,800
Grindrod Reefer Handling and Plug In	750	750	750	750	750
Ambient Rail City Deep to DCT - Container	8,000	8,000	8,000	8,000	8,000
Cost per Container	15,750	18,950	22,250	23,250	25,550
Difference	-4,219	-4,096	-2,335	-2,873	-3,650

Potential ambient loading of containers from Grindrod ICD (pallets)

Commodity Group	Canada	Far East & Asia*	Middle East	Russia	Grand Total
Grapefruit	7,637	3,760	4,432	18,406	34,234
Lemons	3,030	10,254	42,553	12,639	68,475
Valencias	5,576	57,749	81,260	51,599	196,185
Grand Total	16,243	71,763	128,245	82,644	298,895

*Bangladesh, Hong Kong, Malaysia, Philippines and Singapore

Table 3: Potential pallets that can be railed from City Deep by Market by Commodity (Source: CGA).

Potential ambient loading of containers from Grindrod ICD (pallets)

Week No	Canada	Far East & Asia*	Middle East	Russia	Grand Total
3		20	20		40
4		20			20
5		20	300	60	380
6			358		358
7			600	222	822
8		100	179	220	499
9	60	310	1,280	80	1,730
10		128	1,160	520	1,808
11	38	300	860	200	1,398
12	78	928	2,300	799	4,165
13		1,197	1,880	180	3,277
14	231	740	2,301	620	3,892
15	77	509	2,561	140	3,287
16	307	1,080	1,601	668	3,656
17	258	1,319	3,645	1,041	6,263
18	554	540	2,152	728	3,974
19	662	1,102	4,263	687	6,714
20	1,001	1,117	3,938	5,468	11,524
21	291	936	1,332	2,457	5,016
22	1,167	643	944	2,055	4,808
23	998	678	3,166	1,188	6,031
24	1,413	441	1,996	2,523	6,373
25	766	1,303	2,122	3,046	7,237
26	587	1,246	3,213	1,191	6,237
27	200	2,535	3,165	4,681	10,581
28	1,001	2,701	3,175	2,440	9,317
29	203	4,695	7,022	2,517	14,520
30	1,181	2,640	5,235	3,356	12,442
31	995	4,555	3,278	3,318	12,186
32	866	1,918	5,648	2,587	11,377
33	411	1,717	1,645	5,612	9,725
34	124	2,625	9,152	4,544	16,656
35	647	3,028	3,332	4,104	11,771
36	1,191	3,408	5,702	4,140	15,080
37		2,004	6,690	5,255	14,305
38	386	5,650	7,708	9,109	23,464
39	216	3,220	5,845	1,077	10,774
40	120	5,574	7,053	2,990	15,957
41	135	6,298	5,088	423	12,024
42	58	3,280	4,831	2,398	10,627
43		800	1,200		2,060
44		120	284		424
45		319			319
46			20		20
47	20				20
Grand Total	16,243	71,763	128,245	82,644	298,895

*Bangladesh, Hong Kong, Malaysia, Philippines and Singapore

Table 4: Pallets per week that can potentially be railed from City Deep to Durban (Source: CGA).

Table 2 highlights the provisional costing comparison between the conventional option of transporting citrus to Durban, to ship citrus from a cold storage warehouse and railing containers to port from City Deep. The provisional costing shows that producers can potentially save on costs by railing containers from City Deep to Durban.

Table 3 and 4 highlight the potential volume of pallets that could be railed from City Deep to Durban, this equates to almost 30% of the total volume that is exported from Durban annually. Railing a substantial volume of fruit from City Deep, as opposed to trucking it to Durban cold stores, holds many potential logistical benefits.

