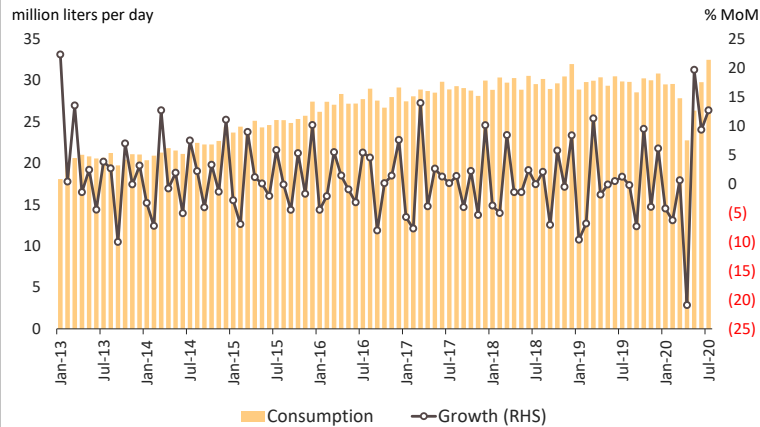
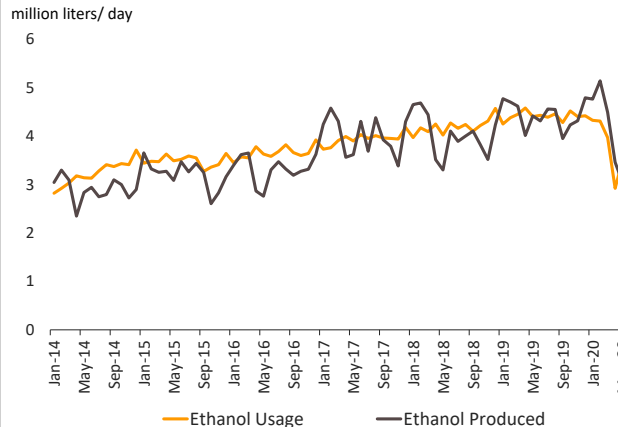


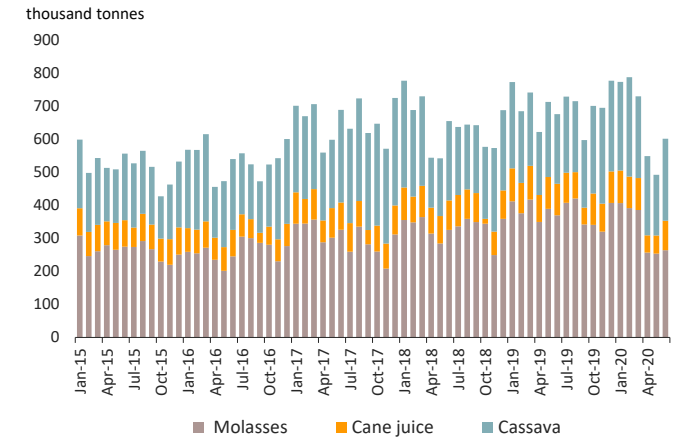
Gasohol Consumed per Day



Ethanol Produced & Usage



Raw Materials



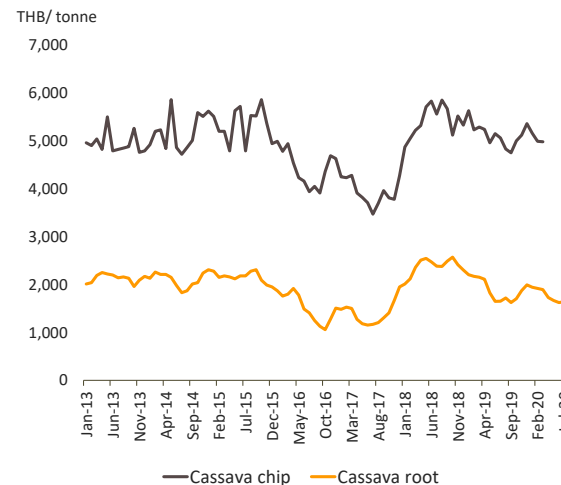
Thai Ethanol Installed Capacity

Producer	Raw material	Installed Capacity (litres/day)
Ethanol Factory (Molasses + Cane Juice)		
1 KTIS Bioethanol Co., Ltd.	Molasses	230,000
2 Thai Sugar Ethanol Co., Ltd.	Molasses	200,000
3 Mitrphol Biofuel Co., Ltd. (Chaiyaphum)	Molasses	500,000
4 Mitrphol Biofuel Co., Ltd. (Kalasin)	Molasses	230,000
5 Mitrphol Biofuel Co., Ltd. (Kuchinarai)	Molasses	320,000
6 Mitrphol Biofuel Co., Ltd. (Danchang)	Molasses	200,000
7 K.I Ethanol Co., Ltd.	Molasses	200,000
8 KSL Green Innovation PCL.	Molasses	150,000
9 KSL Green Innovation PCL. (Bo Phloi)	Molasses	300,000
10 Thai Roong Ruang Energy Co., Ltd.	Molasses	300,000
11 Thai Agro Energy PCL. (Danchang)	Molasses	150,000
12 Maesot Green Energy Co., Ltd.	Cane juice	230,000
Total (1)		3,010,000
Ethanol Factory (Cassava + Molasses)		
13 Rajburi Ethanol Co., Ltd.	Cassava chips/Molasses	150,000
14 E.S. Power Co., Ltd.	Cassava chips/Molasses	150,000
15 Thai Alcohol PCL.	Cassava chips/Molasses	200,000
16 Thai Agro Energy PCL. (Danchang)	Cassava chips/Molasses	200,000
17 Impress Ethanol Co., Ltd.	Cassava roots/cassava	200,000
18 Pornvilai International Group Trading Co.,Ltd	Cassava chips/Molasses	25,000
Total (2)		925,000
Ethanol Factory (Cassava)		
19 Sapthip Green Energy Co., Ltd.	Cassava chips	200,000
20 Thai Ethanol Power PCL.	Cassava roots	90,000
21 Taiping Ethanol Co., Ltd.	Cassava roots	300,000
22 P.S.C Starch Products PCL.	Cassava chips	150,000
23 E85 Co., Ltd.	Cassava roots	500,000
24 Ubon Bio Ethanol Co., Ltd.	Cassava roots/cassava chips	400,000
25 Bangchak Bioethanol Co., Ltd.	Cassava roots/cassava chips	150,000
26 UP VENTURES Co.,LTD.	Cassava chips	340,000
27 Fakwantip Co., Ltd.	Cassava roots	60,000
Total (3)		2,190,000
Total (1)+(2)+(3)		6,125,000

Source: DEDE (September, 2020)

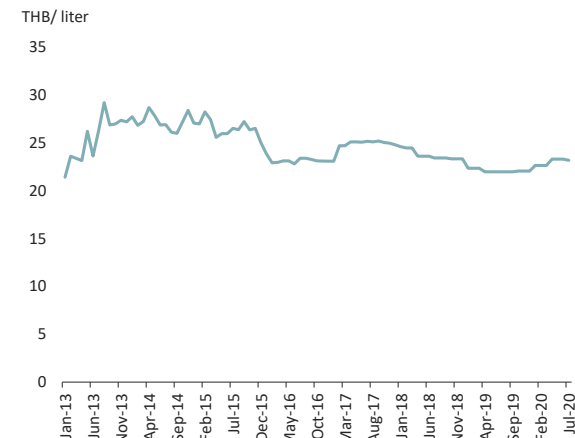
Raw Material Prices & Ethanol Reference Prices

Raw Material Prices



Source: OAE

Ethanol Reference Price



Source: EPPO

Ethanol Usage

Million liters/day (average)

	2016	2017	2018	2019	2020
Jan	3.45	3.73	3.97	4.25	4.33
Feb	3.57	3.76	4.17	4.38	4.31
Mar	3.55	3.91	4.09	4.45	3.97
Apr	3.78	3.99	4.25	4.58	2.92
May	3.63	3.90	4.02	4.40	3.51
Jun	3.58	4.03	4.27	4.43	4.06
Jul	3.68	3.95	4.16	4.39	
Aug	3.82	4.01	4.24	4.46	
Sep	3.66	3.96	4.10	4.28	
Oct	3.60	3.95	4.22	4.52	
Nov	3.64	3.94	4.31	4.40	
Dec	3.92	4.18	4.57	4.42	
Avg	3.66	3.94	4.20	4.41	3.85

Source: DEDE

Ethanol Produced

Million liters/ day (average)

	2016	2017	2018	2019	2020
Jan	3.40	4.24	4.65	4.77	4.76
Feb	3.62	4.58	4.69	4.70	5.14
Mar	3.65	4.31	4.44	4.62	4.49
Apr	2.87	3.56	3.51	4.01	3.46
May	2.76	3.62	3.30	4.42	3.04
Jun	3.30	4.30	4.10	4.31	3.65
Jul	3.47	3.69	3.89	4.56	
Aug	3.32	4.38	4.00	4.55	
Sep	3.19	3.92	4.10	3.95	
Oct	3.27	3.79	3.82	4.23	
Nov	3.32	3.38	3.52	4.32	
Dec	3.62	4.30	4.23	4.79	
Avg	3.32	4.01	4.02	4.44	4.09

Raw Material

(unit: thousand tonnes)

	2019				2020			
	Molasses	Cane Juice	Cassava	Total	Molasses	Cane Juice	Cassava	Total
Jan	412	100	261	773	406	99	268	773
Feb	376	92	217	685	391	95	301	788
Mar	417	102	222	741	385	97	247	730
Apr	349	82	191	622	257	52	240	548
May	389	96	228	713	254	55	184	492
Jun	370	95	210	675	264	89	248	601
Jul	407	91	231	729				
Aug	420	80	215	715				
Sep	342	51	205	597				
Oct	341	95	265	701				
Nov	320	85	290	695				
Dec	407	96	274	777				
Total	4,550	1,063	2,808	8,421	1,958	487	1,488	3,932

Ethanol Reference & Raw Material Prices

Ethanol Reference Price

(unit: THB/ liter)

	2018	2019	2020
Jan	24.57	22.33	22.61
Feb	24.45	22.33	22.61
Mar	24.44	22.33	22.61
Apr	23.59	21.96	23.28
May	23.59	21.96	23.28
Jun	23.59	21.96	23.28
Jul	23.40	21.96	23.16
Aug	23.40	21.96	
Sep	23.40	21.96	
Oct	23.31	22.04	
Nov	23.31	22.04	
Dec	23.31	22.04	
Avg	23.70	22.07	22.98

Source: EPPO

Cassava chip

(unit: THB/ tonne)

	2018	2019	2020
Jan	4,870	5,630	5,160
Feb	5,050	5,230	4,990
Mar	5,220	5,290	4,980
Apr	5,320	5,240	
May	5,710	4,960	
Jun	5,830	5,150	
Jul	5,560	5,060	
Aug	5,850	4,830	
Sep	5,670	4,750	
Oct	5,120	5,000	
Nov	5,520	5,120	
Dec	5,330	5,360	
Avg	5,421	5,135	5,043

Source: OAE

Cassava root

(unit: THB/ tonne)

	2018	2019	2020
Jan	2,012	2,205	1,944
Feb	2,120	2,172	1,920
Mar	2,360	2,154	1,895
Apr	2,510	2,110	1,730
May	2,547	1,826	1,666
Jun	2,472	1,647	1,625
Jul	2,382	1,652	1,640
Aug	2,376	1,718	
Sep	2,487	1,622	
Oct	2,572	1,705	
Nov	2,414	1,872	
Dec	2,303	1,993	
Avg	2,380	1,890	1,774

Source: OAE

Molasses (avg. export price)

(unit: THB/ tonne)

	2018	2019	2020
Jan	4,508	3,275	4,720
Feb	3,455	3,021	3,573
Mar	4,790	2,966	3,583
Apr	3,520	2,883	7,155
May	3,310	3,209	4,530
Jun	3,603	3,204	6,304
Jul	4,846	3,120	6,246
Aug	3,316	3,164	
Sep	4,324	4,166	
Oct	3,266	4,361	
Nov	3,071	6,639	
Dec	3,115	2,842	
Avg	3,760	3,571	5,159

Source: MOC