



**LAMPIRAN-LAMPIRAN**

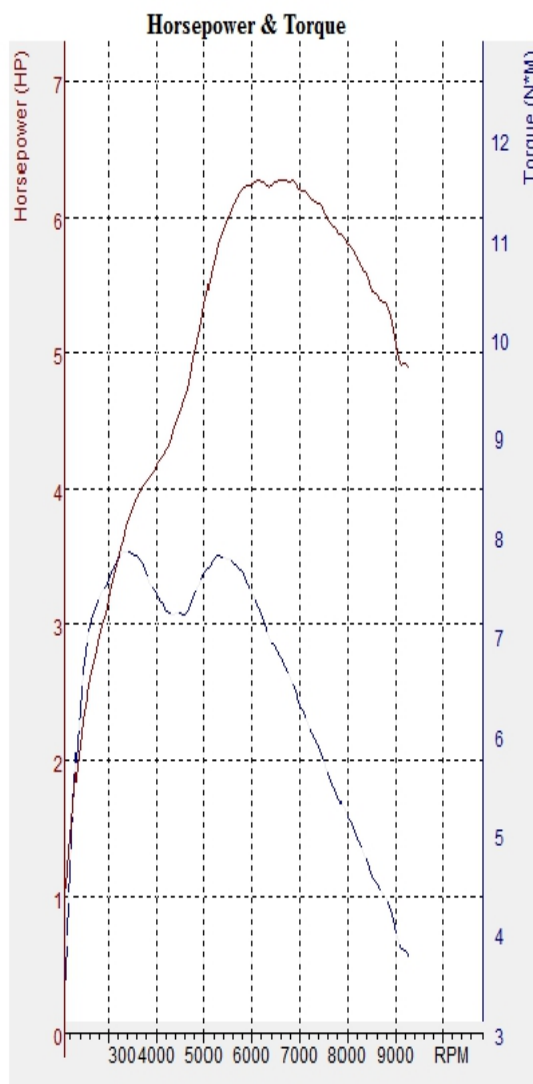
## Pengujian torsi dan daya pada pertalite murni (standar)



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
UNDIKSHA_165	6.3 / 6616	7.85 / 3317	84.6	25.0	60	1000.0	09/04/2021 0:16:07



DATA FOR TEST: UNDIKSHA\_165

RPM	HP (HP)	TQ (N*M)	Tempol (T C-A) (°C)
2250	1.6	5.16	1000.0
2500	2.4	6.82	1000.0
2750	2.8	7.33	1000.0
3000	3.2	7.57	1000.0
3250	3.6	7.82	1000.0
<b>3317</b>	<b>3.7</b>	<b>7.85</b>	1000.0
3500	3.9	7.82	1000.0
3750	4.1	7.64	1000.0
4000	4.2	7.40	1000.0
4250	4.3	7.22	1000.0
4500	4.6	7.21	1000.0
4750	4.9	7.35	1000.0
5000	5.4	7.62	1000.0
5250	5.8	7.80	1000.0
5500	6.0	7.77	1000.0
5750	6.2	7.65	1000.0
6000	6.3	7.40	1000.0
6250	6.3	7.12	1000.0
6500	6.3	6.85	1000.0
<b>6616</b>	<b>6.3</b>	6.72	1000.0
6750	6.3	6.60	1000.0
7000	6.2	6.29	1000.0
7250	6.1	6.01	1000.0
7500	6.1	5.75	1000.0
7750	5.9	5.42	1000.0
8000	5.8	5.15	1000.0
8250	5.6	4.86	1000.0
8500	5.5	4.57	1000.0
8750	5.4	4.37	1000.0
9000	5.1	4.00	1000.0
9250	4.9	3.75	1000.0
9500	4.9	3.75	1000.0

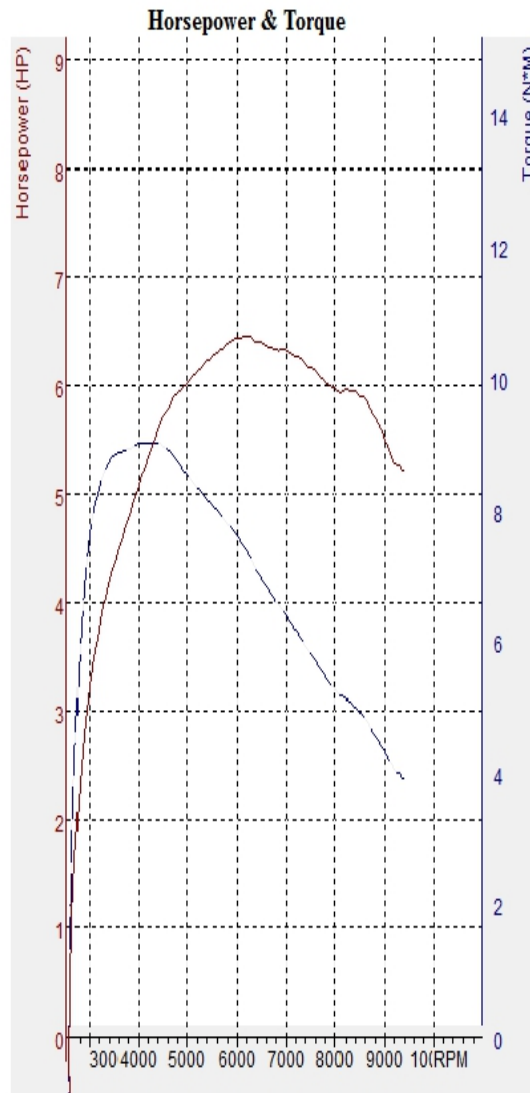
Wheel            6.3 HP        7.8 N\*M  
 LOSSES        0.0 HP        0.0N\*M  
 TOTAL ENGINE: 6.3HP    7.85N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_254	6.4 / 6172	9.06 / 4285	83.4	25.0	60	1000.0	25/05/2021 2:15:59



DATA FOR TEST: VARIO 16 ETANOL\_254

RPM	HP (HP)	TQ Termol (N*M)	(T C-A) (°C)
2750	2.0	5.13	1000.0
3000	3.3	7.80	1000.0
3250	4.0	8.60	1000.0
3500	4.4	8.87	1000.0
3750	4.8	8.97	1000.0
4000	5.1	9.05	1000.0
4250	5.4	9.06	1000.0
<b>4285</b>	<b>5.5</b>	<b>9.06</b>	1000.0
4500	5.7	8.99	1000.0
4750	5.9	8.83	1000.0
5000	6.0	8.56	1000.0
5250	6.2	8.30	1000.0
5500	6.3	8.08	1000.0
5750	6.4	7.84	1000.0
6000	6.4	7.61	1000.0
<b>6172</b>	<b>6.4</b>	<b>7.42</b>	1000.0
6250	6.4	7.31	1000.0
6500	6.4	6.96	1000.0
6750	6.3	6.66	1000.0
7000	6.3	6.39	1000.0
7250	6.2	6.12	1000.0
7500	6.2	5.82	1000.0
7750	6.0	5.53	1000.0
8000	6.0	5.28	1000.0
8250	5.9	5.12	1000.0
8500	5.9	4.93	1000.0
8750	5.7	4.66	1000.0
9000	5.5	4.33	1000.0
9250	5.3	4.05	1000.0
9500	5.2	3.89	1000.0
9750	5.2	3.91	1000.0

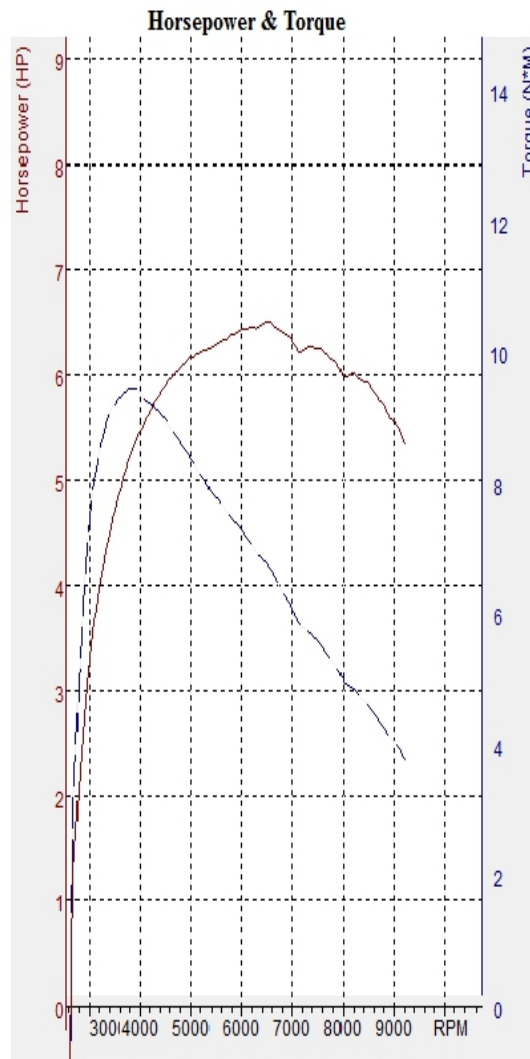
Wheel 6.4 HP 9.1 N\*M  
 LOSSES 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.4 HP 9.06 N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_256	6.5 / 6508	9.80 / 3822	81.8	25.0	60	1000.0	25/05/2021 2:16:21



DATA FOR TEST: VARIO 16 ETANOL\_256

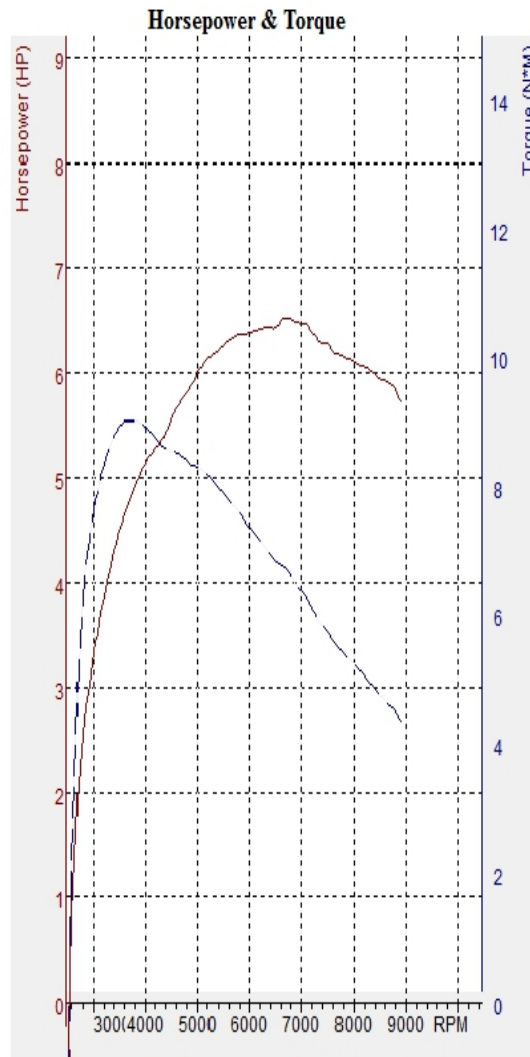
RPM	HP (HP)	TQ (N*M)	Temp (C-A) (°C)
2750	1.8	4.77	1000.0
3000	3.3	7.83	1000.0
3250	4.2	9.08	1000.0
3500	4.7	9.55	1000.0
3750	5.2	9.78	1000.0
<b>3822</b>	<b>5.3</b>	<b>9.80</b>	1000.0
4000	5.5	9.70	1000.0
4250	5.7	9.51	1000.0
4500	5.9	9.32	1000.0
4750	6.0	9.02	1000.0
5000	6.2	8.73	1000.0
5250	6.2	8.41	1000.0
5500	6.3	8.09	1000.0
5750	6.4	7.86	1000.0
6000	6.4	7.61	1000.0
6250	6.4	7.30	1000.0
6500	6.5	7.11	1000.0
<b>6508</b>	<b>6.5</b>	7.09	1000.0
6750	6.4	6.76	1000.0
7000	6.3	6.41	1000.0
7250	6.2	6.12	1000.0
7500	6.3	5.93	1000.0
7750	6.1	5.63	1000.0
8000	6.0	5.31	1000.0
8250	6.0	5.16	1000.0
8500	5.9	4.93	1000.0
8750	5.7	4.64	1000.0
9000	5.5	4.38	1000.0
9250	5.3	4.08	1000.0
9500	5.3	4.11	1000.0

Wheel: 6.5 HP 9.8 N\*M  
 LOSSES: 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.5HP 9.80N\*M



SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_257	6.5 / 6671	9.23 / 3721	79.4	25.0	60	1000.0	25/05/2021 2:16:40



DATA FOR TEST: VARIO 16 ETANOL\_257

RPM	HP (HP)	TQ (N*M)	Tempol (T C-A) (°C)
2750	2.2	5.80	1000.0
3000	3.3	7.86	1000.0
3250	4.0	8.73	1000.0
3500	4.5	9.13	1000.0
<b>3721</b>	<b>4.8</b>	<b>9.23</b>	1000.0
3750	4.9	9.23	1000.0
4000	5.1	9.14	1000.0
4250	5.3	8.90	1000.0
4500	5.6	8.76	1000.0
4750	5.8	8.63	1000.0
5000	6.0	8.50	1000.0
5250	6.2	8.33	1000.0
5500	6.3	8.08	1000.0
5750	6.4	7.86	1000.0
6000	6.4	7.55	1000.0
6250	6.4	7.29	1000.0
6500	6.4	7.03	1000.0
<b>6671</b>	<b>6.5</b>	6.91	1000.0
6750	6.5	6.86	1000.0
7000	6.5	6.55	1000.0
7250	6.3	6.21	1000.0
7500	6.3	5.95	1000.0
7750	6.2	5.65	1000.0
8000	6.1	5.41	1000.0
8250	6.0	5.20	1000.0
8500	5.9	4.95	1000.0
8750	5.9	4.76	1000.0
9000	5.6	4.46	1000.0
9250	5.7	4.52	1000.0

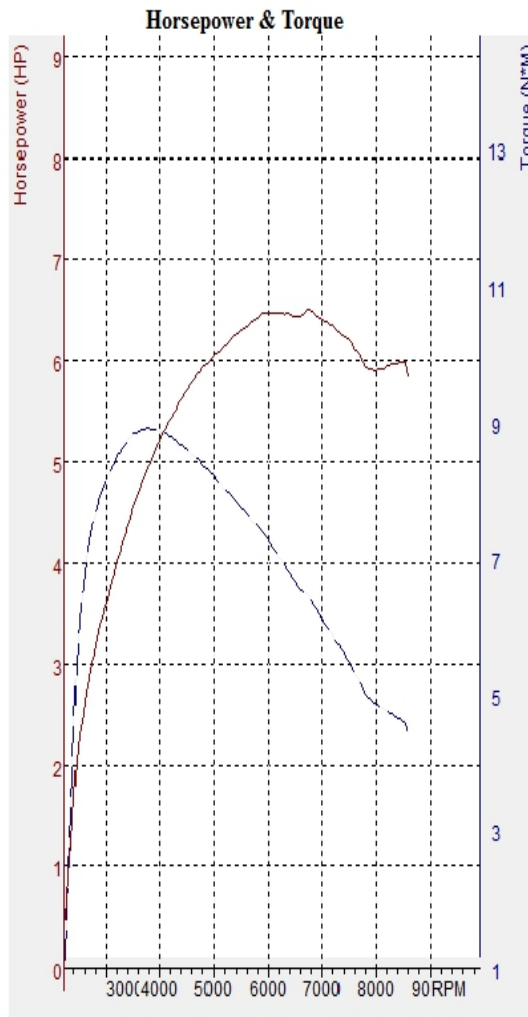
Wheel 6.5 HP 9.2 N\*M  
 LOSSES 0.0 HP 0.0N\*M  
 TOTAL ENGINE: 6.5HP 9.23N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_259	6.5 / 6731	9.31 / 3752	75.4	25.0	60	1000.0	25/05/2021 2:17:31



DATA FOR TEST: VARIO 16 ETANOL\_259

RPM	HP (HP)	TQ (N*M)	Temp (C-A) (°C)
2500	2.3	6.49	1000.0
2750	3.1	7.97	1000.0
3000	3.6	8.58	1000.0
3250	4.1	9.00	1000.0
3500	4.6	9.24	1000.0
3750	4.9	9.31	1000.0
<b>3752</b>	<b>4.9</b>	<b>9.31</b>	1000.0
4000	5.2	9.27	1000.0
4250	5.5	9.14	1000.0
4500	5.7	9.00	1000.0
4750	5.9	8.81	1000.0
5000	6.1	8.59	1000.0
5250	6.2	8.36	1000.0
5500	6.3	8.13	1000.0
5750	6.4	7.89	1000.0
6000	6.5	7.66	1000.0
6250	6.5	7.33	1000.0
6500	6.4	7.01	1000.0
<b>6731</b>	<b>6.5</b>	6.84	1000.0
6750	6.5	6.82	1000.0
7000	6.4	6.48	1000.0
7250	6.3	6.19	1000.0
7500	6.2	5.84	1000.0
7750	6.0	5.46	1000.0
8000	5.9	5.24	1000.0
8250	6.0	5.13	1000.0
8500	6.0	5.00	1000.0
8750	6.0	5.05	1000.0

Wheel            6.5 HP    9.3 N\*M  
 LOSSES        0.0 HP    0.0N\*M  
 TOTAL ENGINE: 6.5HP    9.31N\*M



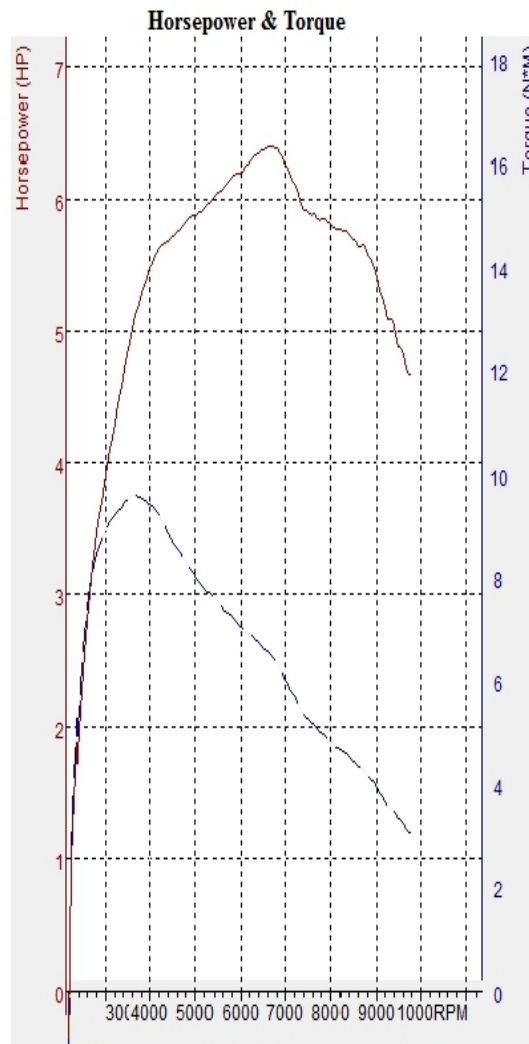
## Pengujian torsi dan daya pada variasi etanol 16%



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_235	6.4 / 6613	9.93 / 3623	85.8	25.0	60	1000.0	02/05/2021 1:31:08



DATA FOR TEST: VARIO 16 ETANOL\_235

RPM	HP (HP)	TQ (N*M)	Tempol (T C-A) (°C)
2250	1.0	3.05	1000.0
2500	2.6	7.24	1000.0
2750	3.4	8.70	1000.0
3000	3.9	9.27	1000.0
3250	4.4	9.64	1000.0
3500	4.9	9.87	1000.0
<b>3623</b>	<b>5.1</b>	<b>9.93</b>	1000.0
3750	5.3	9.90	1000.0
4000	5.5	9.72	1000.0
4250	5.7	9.44	1000.0
4500	5.7	9.00	1000.0
4750	5.8	8.70	1000.0
5000	5.9	8.32	1000.0
5250	6.0	8.05	1000.0
5500	6.1	7.81	1000.0
5750	6.2	7.59	1000.0
6000	6.2	7.35	1000.0
6250	6.3	7.16	1000.0
6500	6.4	6.95	1000.0
<b>6613</b>	<b>6.4</b>	<b>6.85</b>	1000.0
6750	6.4	6.71	1000.0
7000	6.2	6.33	1000.0
7250	6.1	5.94	1000.0
7500	5.9	5.60	1000.0
7750	5.8	5.36	1000.0
8000	5.8	5.16	1000.0
8250	5.8	4.96	1000.0
8500	5.7	4.75	1000.0
8750	5.6	4.55	1000.0
9000	5.4	4.24	1000.0
9250	5.1	3.90	1000.0
9500	4.9	3.64	1000.0
9750	4.7	3.40	1000.0
10000	4.6	3.35	1000.0

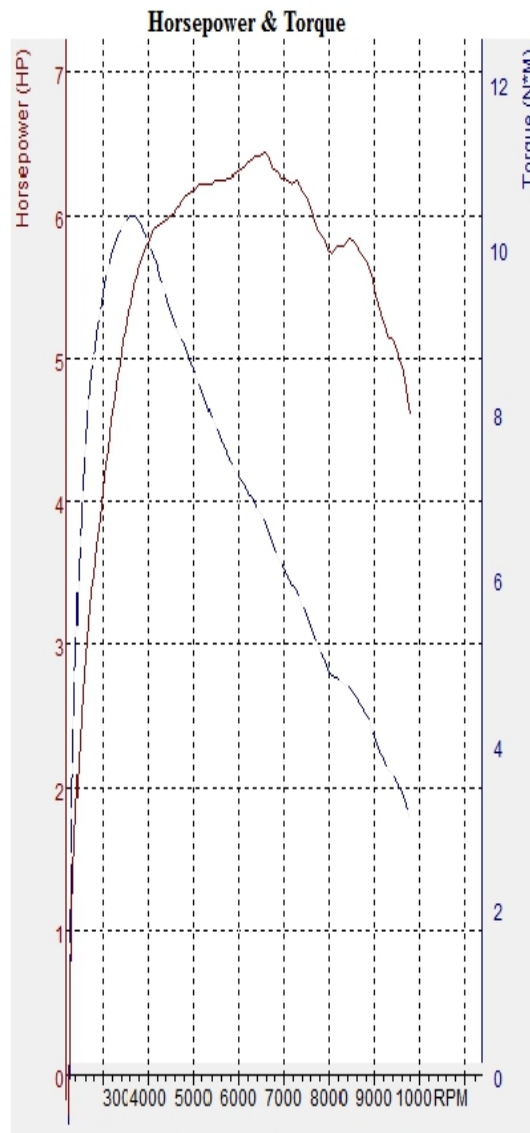
Wheel            6.4 HP        9.9 N\*M  
 LOSSES        0.0 HP        0.0 N\*M  
 TOTAL ENGINE: 6.4HP        9.93N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_236	6.4 / 6560	10.64 / 3603	85.7	25.0	60	1000.0	02/05/2021 1:31:32



DATA FOR TEST: VARIO 16 ETANOL\_236

RPM	HP (HP)	TQ Termol (N*M)	(T C-A) (°C)
2250	0.8	2.51	1000.0
2500	2.5	7.07	1000.0
2750	3.5	8.90	1000.0
3000	4.2	9.82	1000.0
3250	4.7	10.31	1000.0
3500	5.3	10.61	1000.0
<b>3603</b>	<b>5.5</b>	<b>10.64</b>	1000.0
3750	5.6	10.61	1000.0
4000	5.8	10.31	1000.0
4250	5.9	9.88	1000.0
4500	6.0	9.46	1000.0
4750	6.1	9.14	1000.0
5000	6.2	8.78	1000.0
5250	6.2	8.42	1000.0
5500	6.2	8.05	1000.0
5750	6.3	7.74	1000.0
6000	6.3	7.47	1000.0
6250	6.4	7.25	1000.0
6500	6.4	7.01	1000.0
<b>6560</b>	<b>6.4</b>	<b>6.97</b>	1000.0
6750	6.3	6.64	1000.0
7000	6.3	6.35	1000.0
7250	6.2	6.12	1000.0
7500	6.1	5.81	1000.0
7750	5.9	5.40	1000.0
8000	5.7	5.10	1000.0
8250	5.8	4.98	1000.0
8500	5.8	4.86	1000.0
8750	5.7	4.62	1000.0
9000	5.4	4.30	1000.0
9250	5.2	3.98	1000.0
9500	5.0	3.75	1000.0
9750	4.7	3.40	1000.0
10000	4.6	3.35	1000.0

Wheel 6.4 HP 10.6 N\*M  
 LOSSES 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.4 HP 10.64 N\*M





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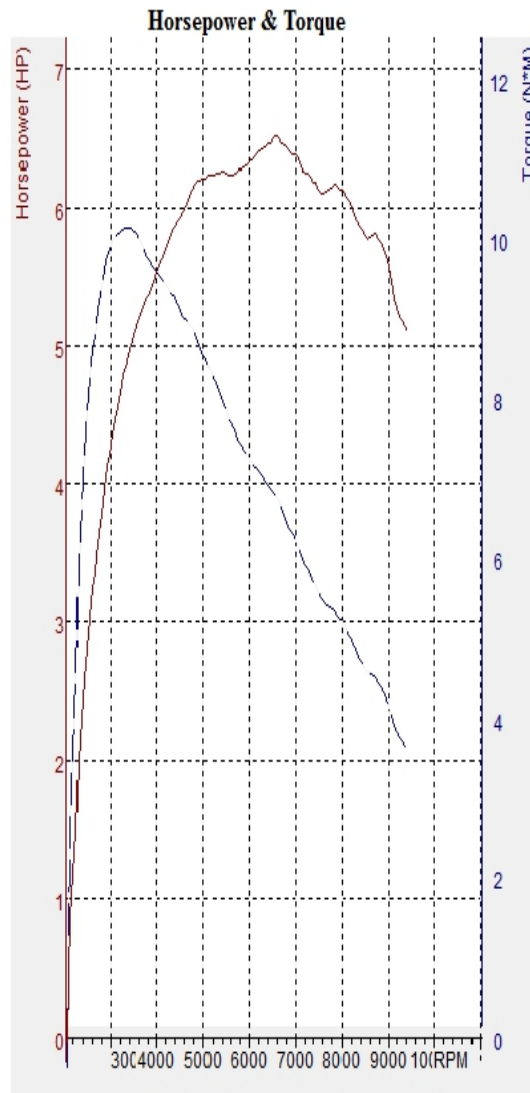
SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)

DYNAMOMETER: SMK PGRI 2 BADUNG

Correction Factor: EC95 -1

Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_237	6.5 / 6545	10.40 / 3333	83.9	25.0	60	1000.0	02/05/2021 1:31:55



DATA FOR TEST: VARIO 16 ETANOL\_237

RPM	HP (HP)	TQ Termol (N*M)	(T C-A) (°C)
2250	1.7	5.24	1000.0
2500	2.9	8.30	1000.0
2750	3.7	9.50	1000.0
3000	4.4	10.23	1000.0
3250	4.8	10.38	1000.0
<b>3333</b>	<b>4.9</b>	<b>10.40</b>	1000.0
3500	5.1	10.35	1000.0
3750	5.3	10.07	1000.0
4000	5.5	9.84	1000.0
4250	5.8	9.61	1000.0
4500	5.9	9.36	1000.0
4750	6.1	9.13	1000.0
5000	6.2	8.80	1000.0
5250	6.2	8.44	1000.0
5500	6.2	8.03	1000.0
5750	6.3	7.73	1000.0
6000	6.3	7.49	1000.0
6250	6.4	7.28	1000.0
6500	6.5	7.08	1000.0
<b>6545</b>	<b>6.5</b>	<b>7.04</b>	1000.0
6750	6.4	6.77	1000.0
7000	6.4	6.47	1000.0
7250	6.2	6.11	1000.0
7500	6.1	5.79	1000.0
7750	6.1	5.63	1000.0
8000	6.1	5.45	1000.0
8250	5.9	5.10	1000.0
8500	5.8	4.84	1000.0
8750	5.8	4.69	1000.0
9000	5.6	4.41	1000.0
9250	5.2	4.00	1000.0
9500	5.1	3.79	1000.0

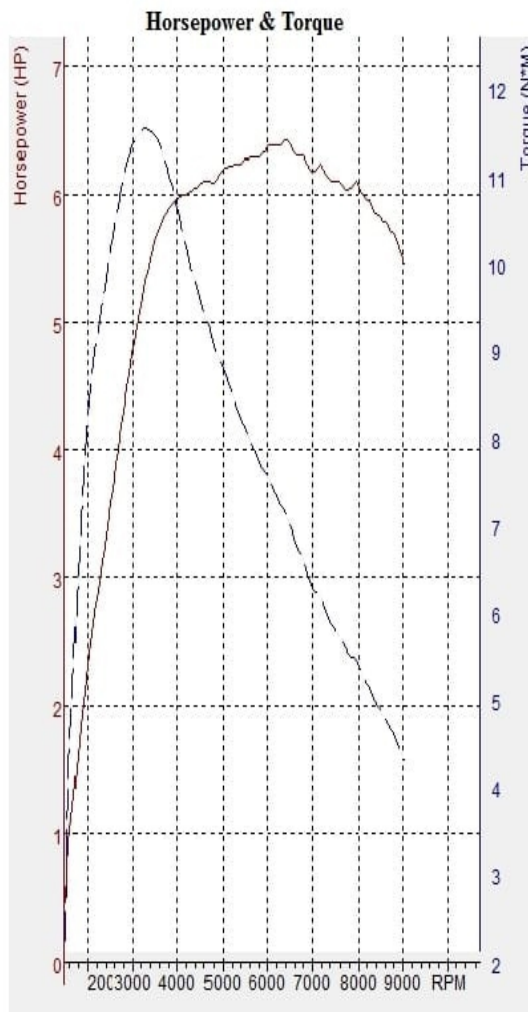
Wheel            6.5 HP    10.4 N\*M  
 LOSSES        0.0 HP    0.0 N\*M  
**TOTAL ENGINE:** 6.5HP    10.40N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_238	6.4 / 6373	11.53 / 3259	80.8	25.0	60	1000.0	02/05/2021 1:32:29



DATA FOR TEST: VARIO 16 ETANOL\_238

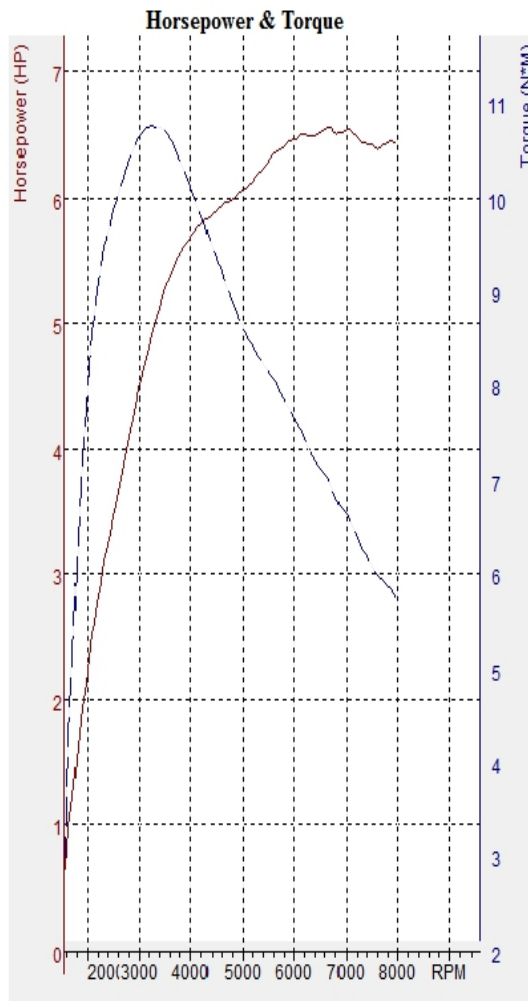
RPM	HP (HP)	TQ (N*M)	Tempol (C-A) (°C)
1750	1.5	6.10	1000.0
2000	2.4	8.42	1000.0
2250	3.0	9.35	1000.0
2500	3.6	10.18	1000.0
2750	4.3	10.97	1000.0
3000	4.8	11.10	1000.0
3250	5.3	11.53	1000.0
<b>3259</b>	<b>5.3</b>	<b>11.53</b>	1000.0
3500	5.7	11.42	1000.0
3750	5.9	11.07	1000.0
4000	6.0	10.61	1000.0
4250	6.0	10.04	1000.0
4500	6.1	9.55	1000.0
4750	6.1	9.10	1000.0
5000	6.2	8.79	1000.0
5250	6.2	8.39	1000.0
5500	6.3	8.09	1000.0
5750	6.3	7.76	1000.0
6000	6.4	7.54	1000.0
6250	6.4	7.25	1000.0
<b>6373</b>	<b>6.4</b>	<b>7.14</b>	1000.0
6500	6.4	6.98	1000.0
6750	6.3	6.64	1000.0
7000	6.2	6.27	1000.0
7250	6.2	6.06	1000.0
7500	6.1	5.78	1000.0
7750	6.0	5.53	1000.0
8000	6.1	5.39	1000.0
8250	5.9	5.13	1000.0
8500	5.8	4.85	1000.0
8750	5.7	4.63	1000.0
9000	5.5	4.32	1000.0
9250	5.5	4.40	1000.0

Wheel 6.4 HP 11.5 N\*M  
 LOSSES 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.4 HP 11.53 N\*M



SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
UNDIKSHA_217	6.6 / 6659	10.75 / 3189	72.2	25.0	60	1000.0	29/04/2021 14:06:32



DATA FOR TEST: UNDIKSHA\_217

RPM	HP (HP)	TQ (N*M)	Termol (T C-A) (°C)
1750	1.4	5.75	1000.0
2000	2.3	8.20	1000.0
2250	2.9	9.27	1000.0
2500	3.5	9.88	1000.0
2750	4.0	10.36	1000.0
3000	4.6	10.67	1000.0
3189	4.9	10.75	1000.0
3250	5.0	10.75	1000.0
3500	5.3	10.70	1000.0
3750	5.5	10.42	1000.0
4000	5.7	10.07	1000.0
4250	5.8	9.70	1000.0
4500	5.9	9.31	1000.0
4750	6.0	8.92	1000.0
5000	6.1	8.59	1000.0
5250	6.2	8.34	1000.0
5500	6.3	8.14	1000.0
5750	6.4	7.90	1000.0
6000	6.5	7.64	1000.0
6250	6.5	7.35	1000.0
6500	6.5	7.12	1000.0
6659	6.6	6.98	1000.0
6750	6.5	6.87	1000.0
7000	6.5	6.63	1000.0
7250	6.4	6.30	1000.0
7500	6.4	6.07	1000.0
7750	6.4	5.88	1000.0
8000	6.4	5.65	1000.0
8250	6.4	5.82	1000.0

Wheel 6.6 HP 10.8 N\*M  
 LOSSES 0.0 HP 0.0N\*M  
 TOTAL ENGINE: 6.6HP 10.75N\*M

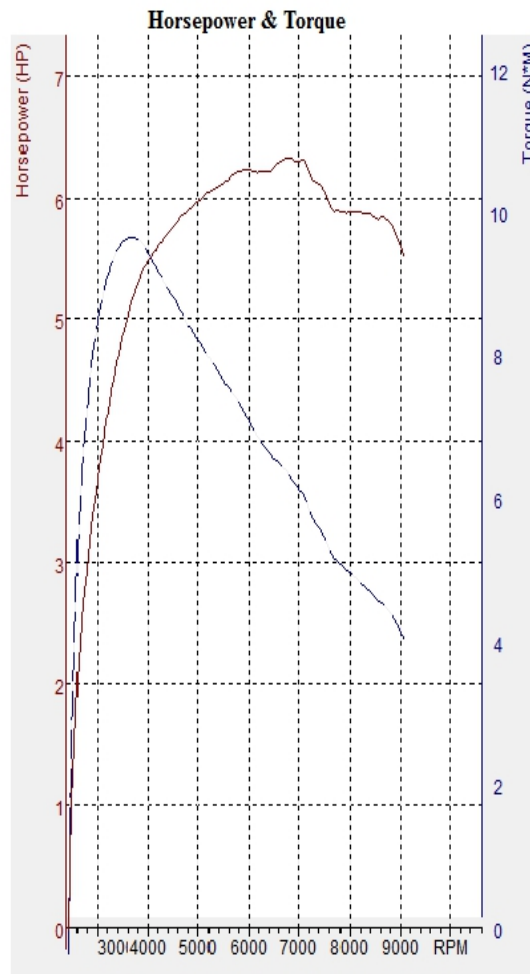
## Pengujian torsi dan daya pada variasi etanol 19%



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_247	6.3 / 6746	9.95 / 3651	80.4	25.0	60	1000.0	25/05/2021 2:01:03



DATA FOR TEST: VARIO 16 ETANOL\_247

RPM	HP (HP)	TQ (N*M)	Termol (T C-A) (°C)
2500	1.2	3.35	1000.0
2750	2.9	7.51	1000.0
3000	3.8	8.89	1000.0
3250	4.4	9.59	1000.0
3500	4.9	9.91	1000.0
<b>3651</b>	<b>5.1</b>	<b>9.95</b>	1000.0
3750	5.3	9.93	1000.0
4000	5.5	9.72	1000.0
4250	5.6	9.40	1000.0
4500	5.8	9.08	1000.0
4750	5.9	8.79	1000.0
5000	6.0	8.49	1000.0
5250	6.1	8.19	1000.0
5500	6.1	7.91	1000.0
5750	6.2	7.68	1000.0
6000	6.2	7.39	1000.0
6250	6.2	7.06	1000.0
6500	6.3	6.84	1000.0
6750	6.3	6.67	1000.0
<b>6746</b>	<b>6.3</b>	<b>6.67</b>	1000.0
7000	6.3	6.39	1000.0
7250	6.2	6.03	1000.0
7500	6.0	5.72	1000.0
7750	5.9	5.41	1000.0
8000	5.9	5.23	1000.0
8250	5.9	5.06	1000.0
8500	5.8	4.88	1000.0
8750	5.8	4.72	1000.0
9000	5.6	4.42	1000.0
9250	5.7	4.49	1000.0

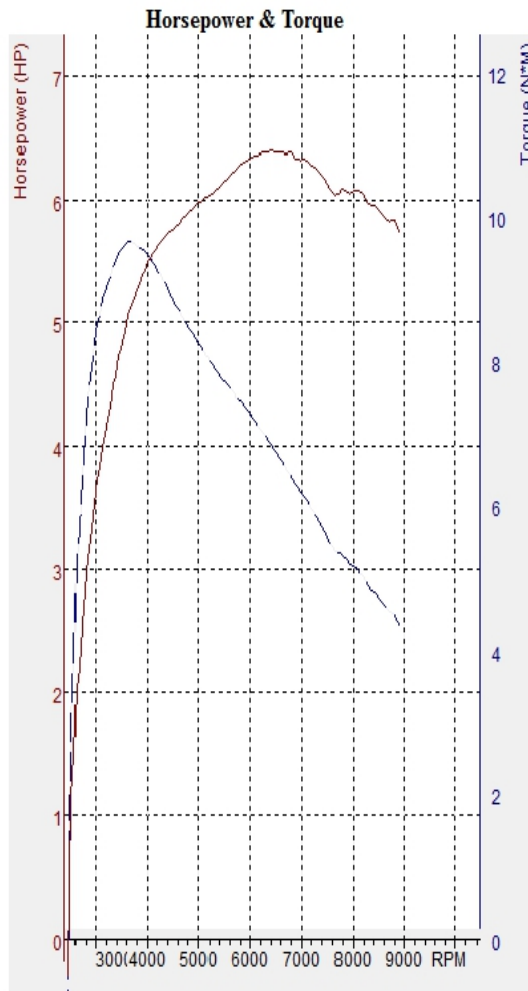
Wheel            6.3 HP        10.0 N\*M  
 LOSSES        0.0 HP        0.0 N\*M  
**TOTAL ENGINE:** 6.3HP        9.95N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_248	6.4 / 6355	9.91 / 3615	79.2	25.0	60	1000.0	25/05/2021 2:01:21



DATA FOR TEST: VARIO 16 ETANOL\_248

RPM	HP (HP)	TQ (N*M)	Temp (C-A) (°C)
2500	1.0	2.81	1000.0
2750	2.8	7.24	1000.0
3000	3.7	8.77	1000.0
3250	4.3	9.44	1000.0
3500	4.9	9.84	1000.0
<b>3615</b>	<b>5.1</b>	<b>9.91</b>	1000.0
3750	5.2	9.87	1000.0
4000	5.5	9.73	1000.0
4250	5.7	9.45	1000.0
4500	5.8	9.07	1000.0
4750	5.9	8.78	1000.0
5000	6.0	8.50	1000.0
5250	6.1	8.20	1000.0
5500	6.2	7.95	1000.0
5750	6.3	7.73	1000.0
6000	6.3	7.50	1000.0
6250	6.4	7.26	1000.0
<b>6355</b>	<b>6.4</b>	7.10	1000.0
6500	6.4	6.98	1000.0
6750	6.4	6.72	1000.0
7000	6.3	6.41	1000.0
7250	6.3	6.13	1000.0
7500	6.1	5.82	1000.0
7750	6.1	5.58	1000.0
8000	6.1	5.40	1000.0
8250	6.0	5.17	1000.0
8500	5.9	4.94	1000.0
8750	5.8	4.74	1000.0
9000	5.6	4.45	1000.0
9250	5.7	4.55	1000.0

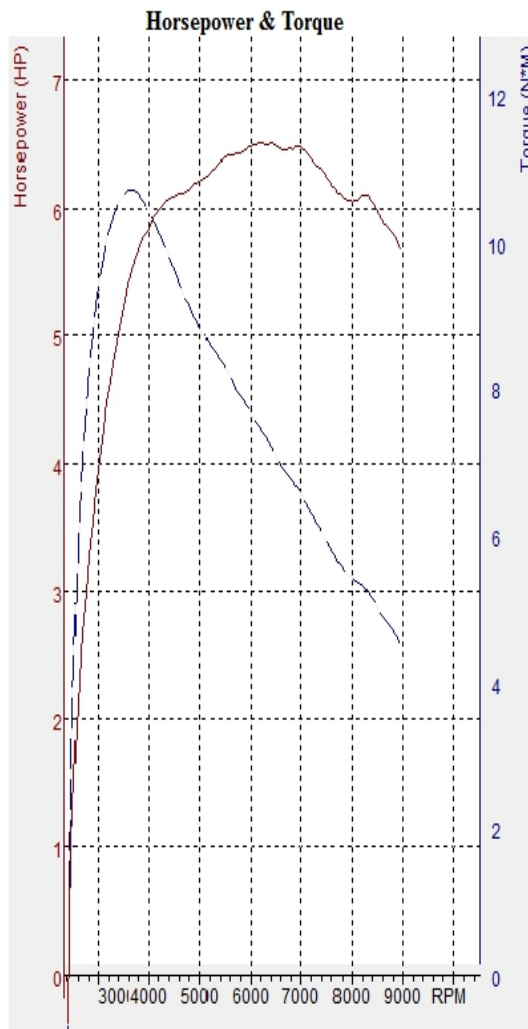
Wheel 6.4 HP 9.9 N\*M  
 LOSSES 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.4 HP 9.91 N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_249	6.5 / 6138	10.73 / 3627	79.6	25.0	60	1000.0	25/05/2021 2:01:39



DATA FOR TEST: VARIO 16 ETANOL\_249

RPM	HP (HP)	TQ (N*M)	Tempol (C-A) (°C)
2500	1.4	3.88	1000.0
2750	3.1	8.04	1000.0
3000	4.0	9.51	1000.0
3250	4.8	10.35	1000.0
3500	5.3	10.67	1000.0
3627	5.5	10.73	1000.0
3750	5.7	10.68	1000.0
4000	5.9	10.41	1000.0
4250	6.0	10.06	1000.0
4500	6.1	9.62	1000.0
4750	6.2	9.15	1000.0
5000	6.2	8.83	1000.0
5250	6.3	8.53	1000.0
5500	6.4	8.27	1000.0
5750	6.4	7.94	1000.0
6000	6.5	7.67	1000.0
6138	6.5	7.50	1000.0
6250	6.5	7.38	1000.0
6500	6.5	7.07	1000.0
6750	6.5	6.79	1000.0
7000	6.5	6.56	1000.0
7250	6.4	6.22	1000.0
7500	6.2	5.90	1000.0
7750	6.1	5.61	1000.0
8000	6.1	5.38	1000.0
8250	6.1	5.26	1000.0
8500	6.0	5.00	1000.0
8750	5.8	4.73	1000.0
9000	5.6	4.43	1000.0
9250	5.7	4.51	1000.0

Wheel: 6.5 HP 10.7 N\*M  
 LOSSES: 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.5 HP 10.73 N\*M

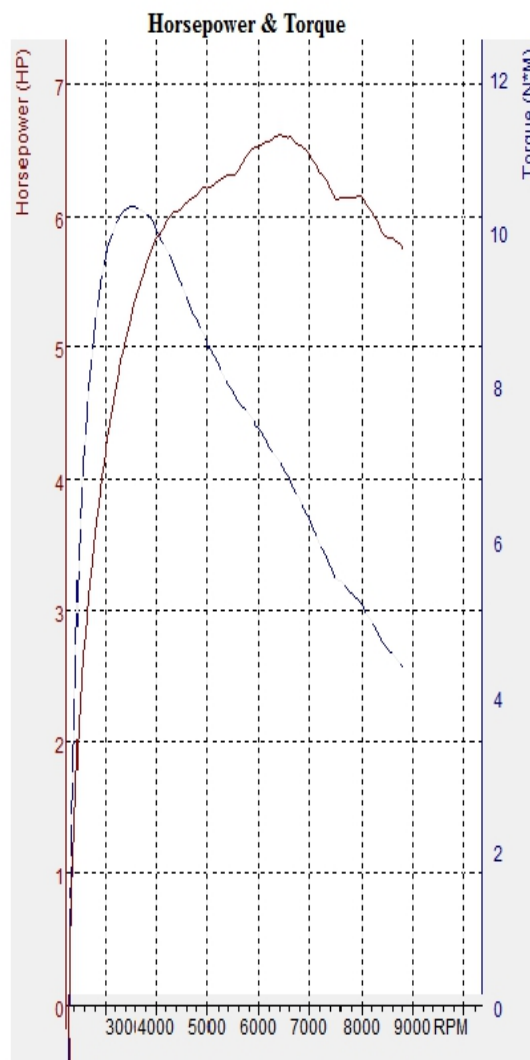




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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_250	6.6 / 6387	10.63 / 3506	80.3	25.0	60	1000.0	25/05/2021 2:01:58



DATA FOR TEST: VARIO 16 ETANOL\_250

RPM	HP (HP)	TQ (N*M)	Tempol (T C-A) (°C)
2500	2.3	6.51	1000.0
2750	3.5	8.95	1000.0
3000	4.2	9.98	1000.0
3250	4.8	10.48	1000.0
3500	5.3	10.63	1000.0
<b>3506</b>	<b>5.3</b>	<b>10.63</b>	1000.0
3750	5.6	10.56	1000.0
4000	5.8	10.32	1000.0
4250	6.0	10.01	1000.0
4500	6.1	9.57	1000.0
4750	6.2	9.17	1000.0
5000	6.2	8.80	1000.0
5250	6.3	8.49	1000.0
5500	6.3	8.16	1000.0
5750	6.5	7.96	1000.0
6000	6.5	7.73	1000.0
6250	6.6	7.47	1000.0
<b>6387</b>	<b>6.6</b>	7.30	1000.0
6500	6.6	7.20	1000.0
6750	6.5	6.90	1000.0
7000	6.5	6.56	1000.0
7250	6.3	6.18	1000.0
7500	6.1	5.80	1000.0
7750	6.1	5.63	1000.0
8000	6.1	5.45	1000.0
8250	6.0	5.16	1000.0
8500	5.8	4.88	1000.0
8750	5.8	4.70	1000.0
9000	5.8	4.75	1000.0

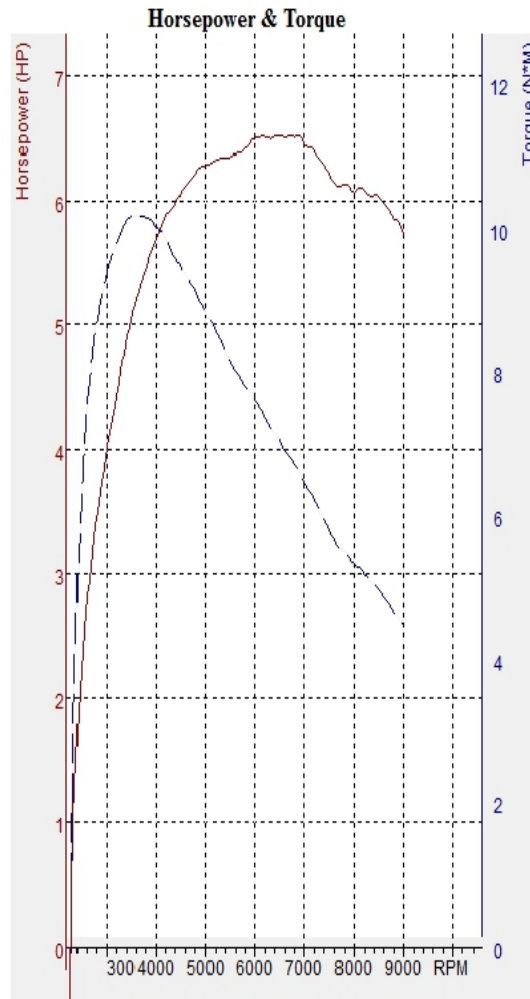
Wheel: 6.6 HP 10.6 N\*M  
 LOSSES: 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.6 HP 10.63 N\*M



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SportDyno-Ver date: 28-JUN-2019 (4.0.35.1)  
 DYNAMOMETER: SMK PGRI 2 BADUNG  
 Correction Factor: EC95 -1  
 Power: HP (mechanic)

Name	HP/RPM	N*M/RPM	KMH	Temp. (°C)	Humidity (%)	Pressure (mbar)	Date/Time
VARIO 16 ETANOL_251	6.5 / 6395	10.27 / 3570	79.9	25.0	60	1000.0	25/05/2021 2:02:24



DATA FOR TEST: VARIO 16 ETANOL\_251

RPM	HP (HP)	TQ (N*M)	Temp (C-A) (°C)
2500	2.4	6.76	1000.0
2750	3.4	8.70	1000.0
3000	4.0	9.50	1000.0
3250	4.6	10.03	1000.0
3500	5.1	10.27	1000.0
<b>3570</b>	<b>5.2</b>	<b>10.27</b>	1000.0
3750	5.4	10.25	1000.0
4000	5.7	10.10	1000.0
4250	5.9	9.84	1000.0
4500	6.1	9.55	1000.0
4750	6.2	9.27	1000.0
5000	6.3	8.92	1000.0
5250	6.3	8.57	1000.0
5500	6.4	8.22	1000.0
5750	6.4	7.90	1000.0
6000	6.5	7.69	1000.0
6250	6.5	7.39	1000.0
<b>6395</b>	<b>6.5</b>	7.21	1000.0
6500	6.5	7.11	1000.0
6750	6.5	6.84	1000.0
7000	6.5	6.55	1000.0
7250	6.4	6.24	1000.0
7500	6.2	5.91	1000.0
7750	6.1	5.61	1000.0
8000	6.1	5.40	1000.0
8250	6.1	5.22	1000.0
8500	6.0	5.03	1000.0
8750	5.9	4.77	1000.0
9000	5.7	4.51	1000.0
9250	5.8	4.61	1000.0

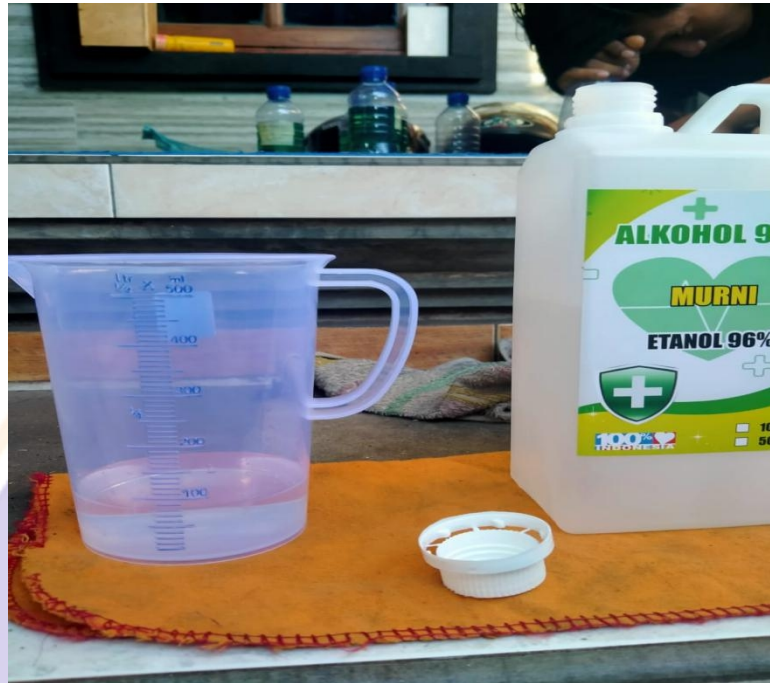
Wheel: 6.5 HP 10.3 N\*M  
 LOSSES: 0.0 HP 0.0 N\*M  
 TOTAL ENGINE: 6.5 HP 10.27 N\*M

### Hasil data pengujian emisi gas buang

#### Data Pengujian Emisi Gas Buang

Putaran Mesin	A1 (Standar)					A2 (Variasi etanol 16%)					A3 (Variasi etanol 19%)				
	HC	CO	CO <sub>2</sub>	O <sub>2</sub>		HC	CO	CO <sub>2</sub>	O <sub>2</sub>		HC	CO	CO <sub>2</sub>	O <sub>2</sub>	
4000	190	5,33	7,9	0	60	3,84	4,6	0	34	6,18	5,3	0			
	192	5,35	7,8	0	67	3,86	4,6	0	33	6,84	5,2	0			
	191	5,38	7,8	0	60	3,82	4,7	0	34	6,93	5,2	0			
	183	5,16	8,0	0	61	3,75	4,6	0	32	6,95	5,3	0			
	185	5,27	7,9	0	63	3,66	4,7	0	33	6,93	5,2	0			
	184	5,29	8,3	0	65	3,60	4,7	0	33	6,97	5,3	0			
	182	5,36	8,3	0	66	3,62	4,6	0	35	6,93	5,2	0			
	181	5,37	8,1	0	67	3,72	4,7	0	34	6,98	5,2	0			
	179	5,44	8,0	0	72	3,67	4,6	0	35	1,03	5,3	0			
	178	5,53	8,3	0	73	3,60	4,6	0	33	1,05	5,3	0			
Rata-rata	184,15	5,348	8,04	0	65,14	3,714	4,64	0	33,6	6,941	5,25	0			

**Variasi etanol 16% pada gelas ukur**



**Penuangan pertalite ke gelas ukur 500ml dengan campuran etanol**

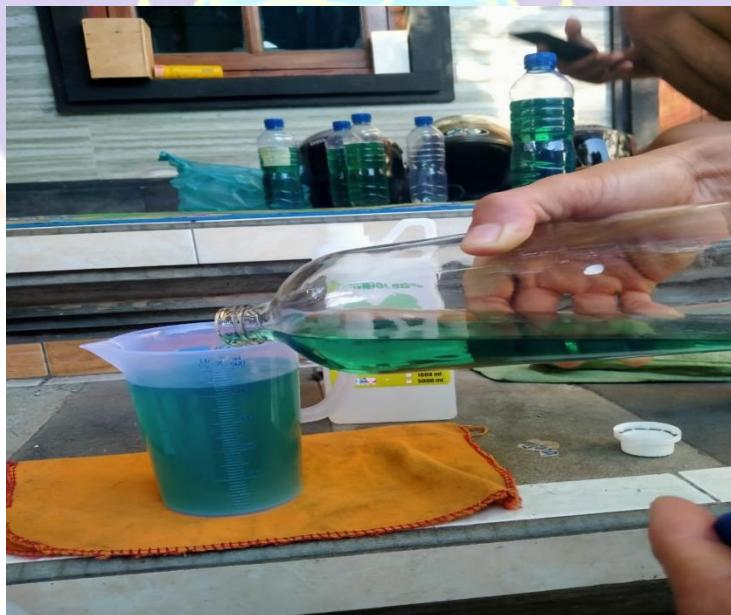




## Variasi etanol 19% pada gelas ukur



Penuangan pertalite ke gelas ukur 500ml dengan campuran etanol



## RIWAYAT HIDUP



Putu Wahyu Dalem Wiratama Budiarta, Lahir di Denpasar 25 Juni 1999. Peneliti lahir dari pasangan suami istri, Bapak Putu Supartha dan Ibu Nyoman Budiani. Peneliti berkebangsaan indonesia dan beragama hindu. Peneliti tinggal bersama orang tua di Desa Tanguwisia, Dusun Tanguwisia, Kecamatan Seririt, Kabupaten Buleleng, Provinsi Bali. Peneliti mengenyam pendidikan Sekolah Dasar di SDN 1 Tanguwisia dari tahun 2005-2011, kemudian berlanjut kejenjang Sekolah Menengah Pertama di SMP Saraswati Seririt dari tahun 2011-2014, pada jenjang selanjutnya peneliti melanjutkan pendidikan di SMK N 3 Bangli pada tahun 2014-2017, dan saat ini melanjutkan pendidikan perguruan tinggi di Universitas Pendidikan Ganesha pada tahun 2017 dengan mengambil Program Studi S1 Pendidikan Teknik Mesin, Jurusan Teknologi Industri, Fakultas Teknik dan Kejuruan