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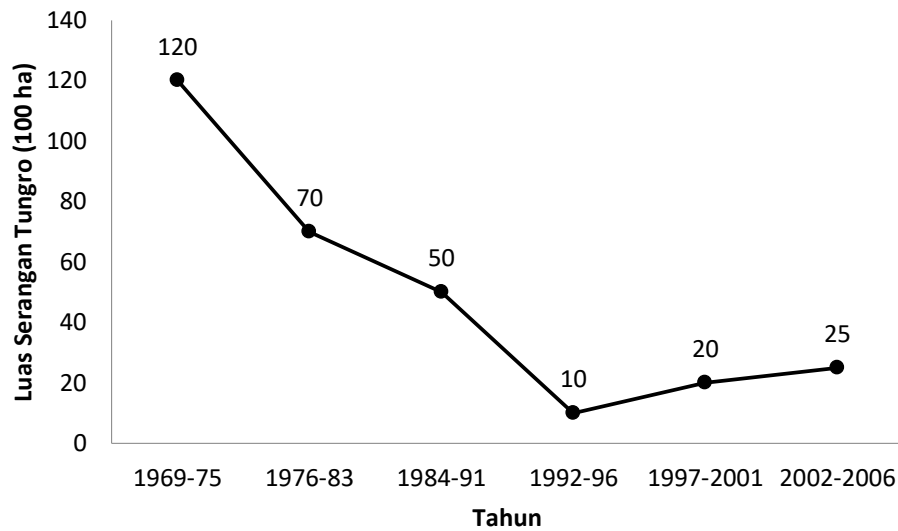
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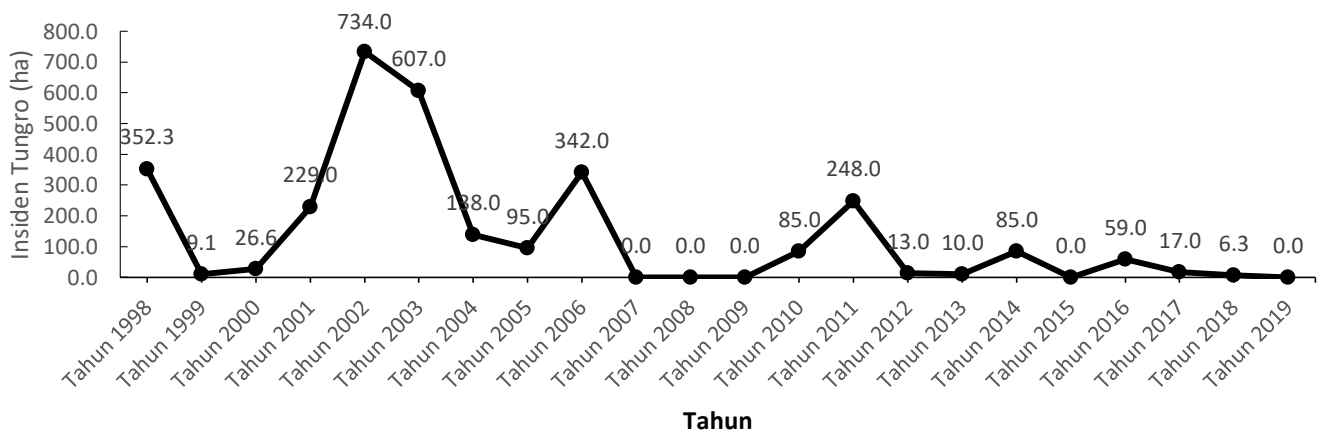
## LAMPIRAN

**Lampiran 1.** Luas serangan tungro pada tanaman padi tahun 1969-2006 di Indonesia



Sumber: Direktorat Perlindungan Tanaman Pangan, 1972- 2007; Muhsin dan Widiarta (2010).

**Lampiran 2.** Luas serangan tungro pada tanaman padi tahun 1998-2019 di Sulawesi Selatan



Sumber: Direktorat Perlindungan Tanaman Pangan, 2008; 2012;2015;2016;2019.

**Lampiran 3. Luas Serangan Tungro pada Tanaman Padi Tahun 2009-2011**

No	Provinsi	(ha)					
		2009		2010		2011	
		T	P	T	P	T	P
1	Aceh	-	-	-	-	73	1
2	Sumatera Utara	43	-	421	1	61	-
3	Sumatera Barat	299	6	584	5	296	23
4	Riau	-	-	-	-	-	-
5	Jambi	-	-	-	-	-	-
6	Sumatera Selatan	178	2	273	11	81	4
7	Bengkulu	394	-	469	-	421	-
8	Lampung	25	-	82	-	119	-
9	Bangka Belitung	-	-	-	-	-	-
10	Kepulauan Riau	-	-	-	-	-	-
11	DKI Jakarta	-	-	-	-	2	-
12	Jawa Barat	1686	-	2025	-	3116	-
13	Jawa Tengah	902	2	1076	8	1248	1
14	DI Yogyakarta	58	-	99	-	230	12
15	Jawa Timur	847	14	1622	18	2025	26
16	Banten	358	18	803	-	392	2
17	Bali	1217	-	2200	-	2166	51
18	Nusa Tenggara Barat	234	-	1011	-	2531	1
19	Nusa Tenggara Timur	156	-	719	-	859	-
20	Kalimantan Barat	60	-	272	5	11	-
21	Kalimantan Tengah	3	-	95	-	12	1
22	Kalimantan Selatan	182	-	61	-	311	-
23	Kalimantan Timur	-	-	26	-	23	-
24	Sulawesi Utara	482	4	244	1	157	-
25	Sulawesi Tengah	345	-	153	-	256	36
<b>26</b>	<b>Sulawesi Selatan</b>	<b>48</b>	<b>-</b>	<b>576</b>	<b>1</b>	<b>248</b>	<b>-</b>
27	Sulawesi Tenggara	341	-	52	-	311	-
28	Gorontalo	-	-	-	-	-	-
29	Sulawesi Barat	28	-	270	59	136	2
30	Maluku	-	-	21	2	-	-
31	Maluku Utara	2	-	71	-	115	-
32	Papua Barat	1	-	1	-	88	-
33	Papua	327	4	236	10	839	232
	<b>Indonesia</b>	<b>8214</b>	<b>50</b>	<b>13461</b>	<b>121</b>	<b>16027</b>	<b>392</b>

Keterangan : T = Terinfeksi (termasuk puso); P = Puso;

- = Menyatakan tidak ada infeksi atau luas infeksi kurang dari 1 hektar

Sumber : PUSDATIN (2012); Direktorat Perlindungan Tanaman Pangan, Direktorat Jenderal Tanaman Pangan, Kementerian Pertanian (2012).

**Lampiran 4.** Luas Serangan Tungro pada Tanaman Padi Tahun 2012-2014

(ha)

No	Provinsi	2012		2013		2014	
		T	P	T	P	T	P
1	Aceh	49	-	-	-	-	-
2	Sumatera Utara	83	-	113	-	63	-
3	Sumatera Barat	624	52	250	1	189	-
4	Riau	-	-	-	-	3	-
5	Jambi	1	-	-	-	7	-
6	Sumatera Selatan	55	1	49	3	38	-
7	Bengkulu	271	-	233	-	262	-
8	Lampung	34	-	13	-	10	-
9	Bangka Belitung	-	-	250	-	-	-
10	Kepulauan Riau	-	-	-	-	-	-
11	DKI Jakarta	-	-	-	-	-	-
12	Jawa Barat	1671	-	1272	-	1489	-
13	Jawa Tengah	737	13	592	-	1008	14
14	DI Yogyakarta	15	-	71	-	75	-
15	Jawa Timur	431	1	1407	9	791	-
16	Banten	240	-	357	66	162	106
17	Bali	600	-	985	-	776	-
18	Nusa Tenggara Barat	428	-	1355	-	279	-
19	Nusa Tenggara Timur	1525	80	1992	12	300	17
20	Kalimantan Barat	31	-	63	-	80	-
21	Kalimantan Tengah	146	2	153	-	40	-
22	Kalimantan Selatan	49	-	240	1	2487	-
23	Kalimantan Timur	5	-	-	-	97	-
24	Sulawesi Utara	257	3	471	38	143	-
25	Sulawesi Tengah	36	-	152	-	83	-
26	<b>Sulawesi Selatan</b>	<b>13</b>	<b>-</b>	<b>10</b>	<b>-</b>	<b>85</b>	<b>5</b>
27	Sulawesi Tenggara	50	-	-	-	25	-
28	Gorontalo	-	-	-	-	-	-
29	Sulawesi Barat	59	-	89	-	72	-
30	Maluku	50	-	29	-	-	-
31	Maluku Utara	197	10	36	-	65	-
32	Papua Barat	63	-	-	-	1	-
33	Papua	16	2	69	15	168	78
<b>Indonesia</b>		<b>7747</b>	<b>162</b>	<b>10250</b>	<b>144</b>	<b>8705</b>	<b>220</b>

Keterangan : T = Terinfeksi (termasuk puso); P = Puso;

- = Menyatakan tidak ada infeksi atau luas infeksi kurang dari 1 hektar

Sumber : PUSDATIN (2015); Direktorat Perlindungan Tanaman Pangan, Direktorat Jenderal Tanaman Pangan, Kementerian Pertanian (2015).

**Lampiran 5.** Luas Serangan Tungro pada Tanaman Padi Tahun 2014-2016

No	Provinsi	(ha)					
		2014		2015		2016	
		T	P	T	P	T	P
1	Aceh	-	-	-	-	44	-
2	Sumatera Utara	63	-	38	-	16	-
3	Sumatera Barat	189	-	235	-	240	11
4	Riau	3	-	-	-	-	-
5	Jambi	7	-	1	-	2	-
6	Sumatera Selatan	38	-	69	-	81	-
7	Bengkulu	262	-	191	-	124	-
8	Lampung	10	-	1	-	-	-
9	Bangka Belitung	-	-	-	-	23	-
10	Kepulauan Riau	-	-	-	-	-	-
11	DKI Jakarta	-	-	6	-	-	-
12	Jawa Barat	1489	-	1062	-	732	-
13	Jawa Tengah	1008	14	757	-	356	-
14	DI Yogyakarta	75	-	61	-	5	-
15	Jawa Timur	791	-	636	-	559	-
16	Banten	162	106	58	43	3	-
17	Bali	776	-	334	-	216	-
18	Nusa Tenggara Barat	279	-	307	-	188	-
19	Nusa Tenggara Timur	300	17	703	-	96	-
20	Kalimantan Barat	80	-	35	-	43	-
21	Kalimantan Tengah	40	-	4	-	42	-
22	Kalimantan Selatan	2487	-	60	-	16	2
23	Kalimantan Timur	97	-	-	-	-	-
24	Sulawesi Utara	143	-	174	-	6	-
25	Sulawesi Tengah	83	-	33	-	-	-
<b>26</b>	<b>Sulawesi Selatan</b>	<b>85</b>	<b>5</b>	-	-	<b>58</b>	-
27	Sulawesi Tenggara	25	-	2	-	-	-
28	Gorontalo	-	-	-	-	-	-
29	Sulawesi Barat	72	-	4	4	-	-
30	Maluku	-	-	-	-	-	-
31	Maluku Utara	65	-	18	-	10	-
32	Papua Barat	1	-	9	-	1	-
33	Papua	168	78	5	-	28	-
	<b>Indonesia</b>	<b>8705</b>	<b>220</b>	<b>4803</b>	<b>47</b>	<b>2898</b>	<b>13</b>

Keterangan : T = Terinfeksi (termasuk puso); P = Puso;

- = Menyatakan tidak ada infeksi atau luas infeksi kurang dari 1 hektar

Sumber : PUSDATIN (2016); Direktorat Perlindungan Tanaman Pangan, Direktorat Jenderal Tanaman Pangan, Kementerian Pertanian (2016).

**Lampiran 6.** Luas Serangan Tungro pada Tanaman Padi Tahun 2017-2019

No	Provinsi	2017		2018		2019	
		T	P	T	P	T	P
1	Aceh	3	-	-	-	5	-
2	Sumatera Utara	41	-	35	-	18	-
3	Sumatera Barat	47	-	105	5	100	-
4	Riau	-	-	25	-	-	-
5	Jambi	20	-	4	1	138	58
6	Sumatera Selatan	39	-	83	-	12	-
7	Bengkulu	94	-	35	-	74	-
8	Lampung	-	-	1	-	-	-
9	Bangka Belitung	-	-	-	-	-	-
10	Kepulauan Riau	-	-	-	-	-	-
11	DKI Jakarta	-	-	-	-	-	-
12	Jawa Barat	1761	-	684	-	351	-
13	Jawa Tengah	449	-	108	3	220	-
14	DI Yogyakarta	31	-	2	-	-	-
15	Jawa Timur	881	17	163	9	138	3
16	Banten	-	-	-	-	-	-
17	Bali	1047	2	235	-	148	-
18	Nusa Tenggara Barat	316	-	161	-	90	-
19	Nusa Tenggara Timur	227	-	189	5	56	-
20	Kalimantan Barat	98	-	103	-	23	-
21	Kalimantan Tengah	-	-	79	-	29	-
22	Kalimantan Selatan	272	10	1103	4	454	1
23	Kalimantan Timur	27	-	21	-	118	1
24	Kalimantan Utara	-	-	-	-	-	-
25	Sulawesi Utara	44	-	62	-	10	-
26	Sulawesi Tengah	86	-	53	-	82	-
27	<b>Sulawesi Selatan</b>	<b>3</b>	-	<b>14</b>	-	-	-
28	Sulawesi Tenggara	-	-	-	-	-	-
29	Gorontalo	-	-	-	-	-	-
30	Sulawesi Barat	11	-	76	5	-	-
31	Maluku	-	-	-	-	-	-
32	Maluku Utara	56	-	129	-	27	-
33	Papua Barat	-	-	9	4	9	-
34	Papua	40	1	169	36	35	-
<b>Indonesia</b>		<b>5590</b>	<b>30</b>	<b>3646</b>	<b>71</b>	<b>2135</b>	<b>63</b>

Keterangan : T = Terinfeksi (termasuk puso); P = Puso;

- = Menyatakan tidak ada infeksi atau luas infeksi kurang dari 1 hektar

Sumber : PUSDATIN (2019); Direktorat Perlindungan Tanaman Pangan, Direktorat Jenderal Tanaman Pangan, Kementerian Pertanian (2019).

**Lampiran 7.** Luas serangan tungro pada tanaman padi tahun 2010-2019 di beberapa kabupaten di Sulawesi Selatan

No	Kabupaten	2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
		T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P
1	Bantaeng	347	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Barru	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Bone	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Bulukumba	0	0	0	0	0	0	5.5	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Enrekang	9	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Gowa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Jeneponto	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Kota Palopo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Luwu	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0
10	Luwu Timur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Luwu Utara	0	0	0	0	0	0	0	0	60	10	0	0	0	0	0	0	0	0	0	0
12	Makassar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
13	Maros	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Pangkep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Pare-Pare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Pinrang	119	0	98	0	10	0	3	0	0	0	0	0	12.24	0	2.5	0	0	0	0	0
17	Selayar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Sidrap	91	1	34	0	2	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0
19	Sinjai	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Soppeng	8	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Takalar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Tator	0	0	0	0	0	0	0.5	0	1	0	0	0	0	0	0	0	0	0	0	0
23	Toraja Utara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Wajo	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
<b>Sulawesi Selatan</b>		<b>582</b>	<b>1</b>	<b>180</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>70</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>62.24</b>	<b>0</b>	<b>2.5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

Keterangan : T = Terinfeksi (termasuk puso) (Satuan dalam hektar) ; P = Puso (Satuan dalam hektar)

Sumber : BPTPH SULSEL (2018); PUSDATIN (2019); Direktorat Perlindungan Tanaman Pangan, Direktorat Jenderal Tanaman Pangan, Kementerian Pertanian (2019).



**Lampiran 8. Data curah hujan bulanan di beberapa daerah di Sulawesi Selatan tahun 2019**

a

Lokasi	Bulan											
	1	2	3	4	5	6	7	8	9	10	11	12
Mattiro Sompe	154	82	155	69	29	107	3	17	0	33	99	291
Lanrisang	171	174	185	0	25	30	49	0	0	0	0	0
Watang Sawitto	0	191	63	100	48	246	0	29	0	28	64	73
Mattiro Bulu	175	81	156	101	39	167	27	45	0	25	0	39
Rata-Rata	125.0	132.0	139.8	67.5	35.3	137.5	19.8	22.8	0.0	21.5	40.8	100.8

b

Lokasi	Bulan											
	1	2	3	4	5	6	7	8	9	10	11	12
Lawawoi/Watang Pu	99	118	65	215	56	252	50	5	0	22	168	60
Lanrang/Panca Rijang	151	103	128	148	128	396	95	22	2	12	94	33
Empagae	94	180	0	242	0	264	13	16	0	36	19	147
Rata-Rata	114.7	133.7	64.3	201.7	61.3	304.0	52.7	14.3	0.7	23.3	93.7	80.0

c

Lokasi	Bulan											
	1	2	3	4	5	6	7	8	9	10	11	12
Bontonompo	647	247	305	122	3	20	0	0	0	0	0	0
BontoBonto	960	353	296	198	41	67	0	0	0	0	0	0
Bajeng/Limbung	0	294	0	0	0	0	0	0	0	0	0	134
Somba Opu	734	282	0	0	63	47	2	0	1	0	25	0
Rata-Rata	367	294	150.25	80	26.75	33.5	0.5	0	0.25	0	6.25	33.5

d

Lokasi	Bulan											
	1	2	3	4	5	6	7	8	9	10	11	12
Bantimurung	673	594	661	245	106	0	0	0	0	0	0	0
Baji Manggai	885	270	228	231	16	28	7	1	0	18	85	255
BPP Mongcongloe	638	285	306	152	62	72	6	0	0	13	35	286
Stasion I Maros/Mar	735	258	223	248	42	95	5	0	0	0	33	308
Rata-Rata	732.75	351.75	354.5	219	56.5	48.75	4.5	0.25	0	7.75	38.25	212.3

Keterangan : a = Pinrang; b = Sidrap; c = Gowa; d = Maros

Sumber : Balai Besar Meteorologi Klimatologi dan Geofisika (BBMKG) Wilayah IV Makassar (2019).

**Lampiran 9.** Data suhu udara rata-rata Kabupaten Sidrap dan Maros, tahun 2015 – 2019

Tahun	Bulan											
	1	2	3	4	5	6	7	8	9	10	11	12
a 2015	X	X	X	X	X	X	X	X	X	X	28,6	27,4
2016	27,7	27,1	27,1	27,2	27,3	X	X	25,8	26,4	X	X	X
2017	X	X	X	X	27,3	26,9	26,1	26,0	27,1	27,5	28,0	28,9
2018	29,5	30,0	30,4	29,8	28,8	28,1	28,3	28,0	29,8	30,4	30,4	29,3
2019	29,4	28,9	29,5	30,3	29,9	29,0	28,1	X	29,7	X	X	X

Tahun	Bulan											
	1	2	3	4	5	6	7	8	9	10	11	12
b 2015	26,3	26,5	26,7	27,2	27,8	26,8	26,7	27,1	28,0	29,0	28,7	27,2
2016	27,7	27,1	27,6	28,0	28,4	27,5	26,9	27,5	28,1	27,5	27,6	27,2
2017	26,5	26,7	26,8	27,3	28,1	26,7	26,8	27,6	28,3	27,8	27,2	27,1
2018	26,8	26,1	26,6	27,6	28,1	26,9	26,6	27,2	27,9	28,1	27,8	26,8
2019	26,7	26,9	27,0	27,9	28,0	27,0	26,7	27,2	28,0	28,9	28,6	27,9

Keterangan : Suhu udara dalam derajat celcius ( $^{\circ}$  C); X = tidak ada data/ alat rusak; a = Sidrap; b = Maros;

Sumber : Balai Besar Meteorologi Klimatologi dan Geofisika (BBMKG) Wilayah IV Makassar (2019).

**Lampiran 10.** Sampel tanaman padi yang terindikasi terinfeksi virus tungro yang ditemukan pada beberapa lokasi survei di Pinrang, Sidrap, Gowa dan Maros.



Ciro-Ciroe/Sidrap (MT.I)



Ciro-Ciroe/Sidrap (MT.II)



Akakae/Sidrap(MT.I)



Akakae/Sidrap(MT.II)



Lawawoi/Sidrap (MT.I)



Lawawoi/Sidrap (MT.II)



Lanrang/Sidrap (MT.I)



Lanrang/Sidrap (MT.II)



Empagae/Sidrap(MT.I)



Empagae/Sidrap(MT.II)



To'e/pinrang (MT.I)



To'e/Pinrang (MT.II)



**Lanjutan Lampiran 10.**



**Samaenre/Pinrang (MT.I)**



**Samaenre/Pinrang (MT.II)**



**Panyangkalang/Gowa (MT.I)**



**Panyangkalang/Gowa (MT.II)**



**Palangg/Gowa (MT.I)**



**Palangga/Gowa (MT.II)**



**Kalabirang/Maros (MT.I)**



**Kalabirang/Maros(MT.II)**



**Jene Tesa/Maros (MT.I)**



**Jene Tesa/Maros (MT.II)**

**Lampiran 11.** Sampel gulma (inang alternatif virus tungro) yang ditemukan pada beberapa lokasi survei di Pinrang, Sidrap, Gowa dan Maros.



*Fimbristylis miliacea*  
(Adas-adasan)



*Cyperus iria*  
(Dekeng)



*Monochoria vaginalis*  
(Eceng padi)



*Sphenoclea zeylanica*  
(Gonda)



*Ludwigia octovalvis*  
(Cacabean)



*Digitaria sanguinalis*  
(Genjoran)

Lanjutan Lampiran 11.



*Echinochloa crusgalli*  
(Jajagoan)



*Eleusin indica*



*Cyperus rotundus*



*Leptochloa chinensis*



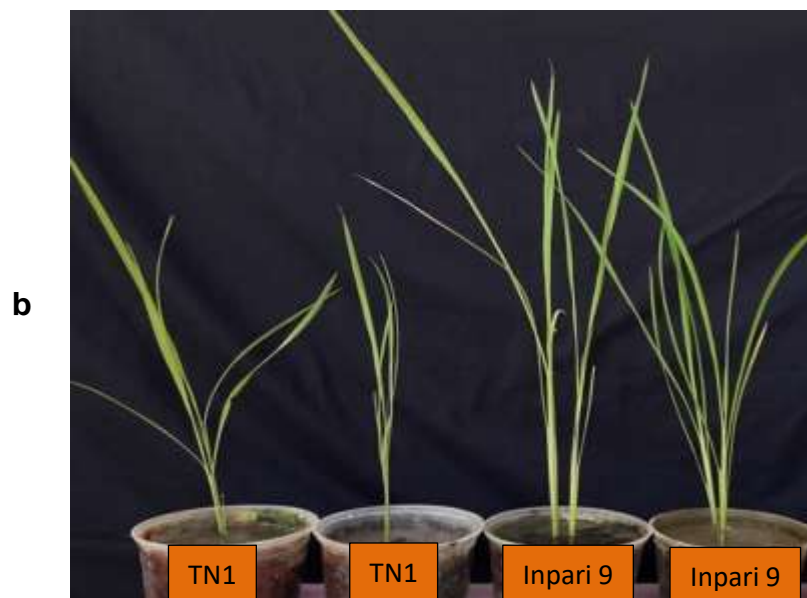
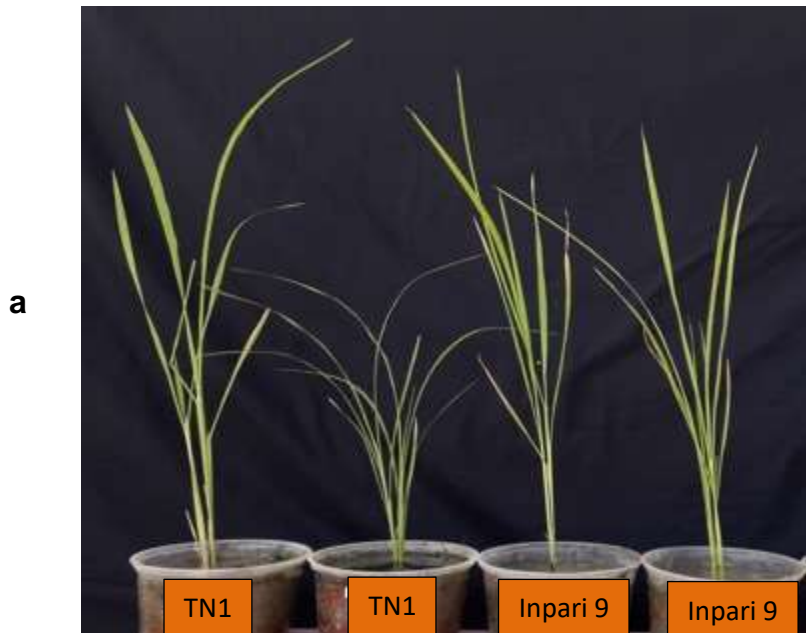
*Cyperus difformis*



*Panicum repens*



**Lampiran 12.** Penampilan varietas rentan ( TN1) dan varietas tahan virus tungro (Inpari 9) 28 hari setelah diinokulasi dengan isolat dari Pinrang (a) dan Sidrap (b)



**Lanjutan lampiran 12.** Penampilan varietas rentan ( TN1) dan varietas tahan virus tungro (Inpari 9) 28 hari setelah diinokulasi dengan isolat dari Gowa (c) dan Maros (d)

