

LAMPIRAN

Lampiran 1. Lay out Penelitian

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10

Keterangan:

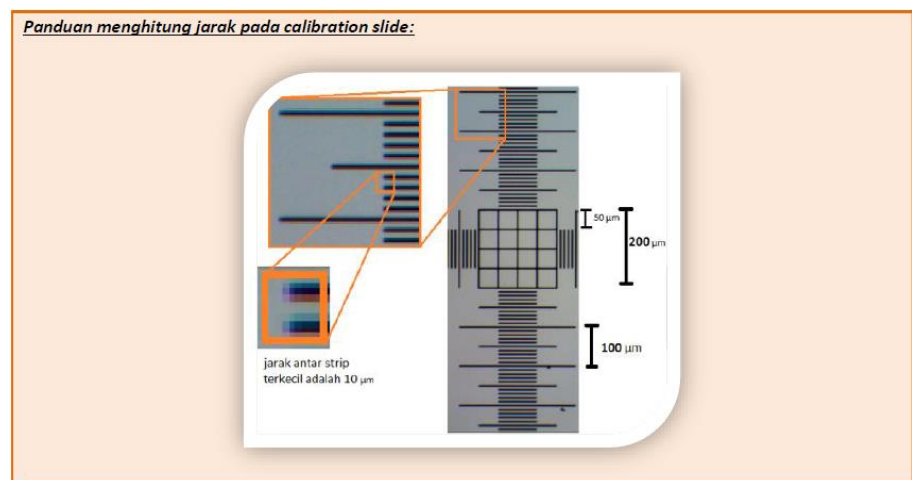
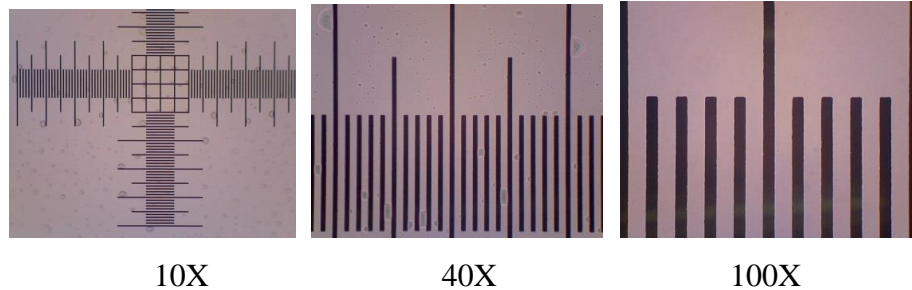
Terdapat 20 unit percobaan, setiap varietas Pulut dan varietas *Black aztec* masing-masing 10 preparat.

Lampiran 2. Pengukuran kromosom menggunakan Image Raster 3.0

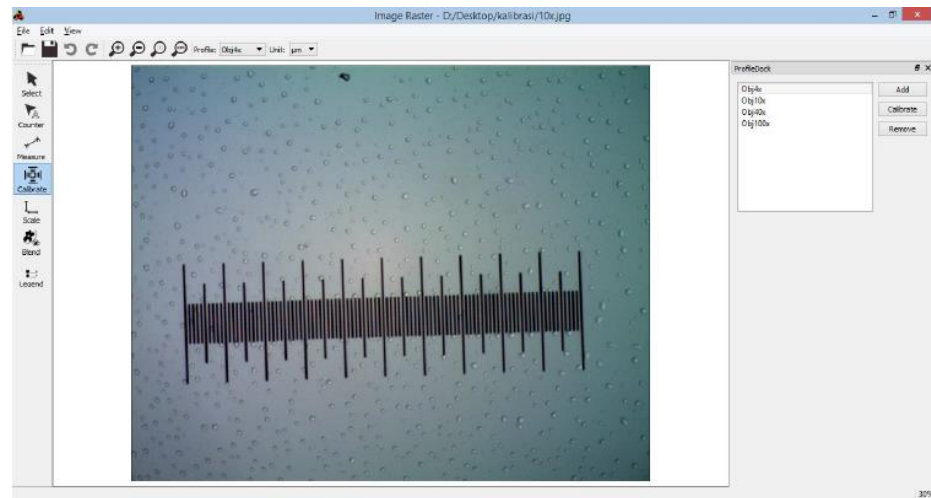
1. Kalibrasi Skala/Objek Mikrometer

- a. Buka program Image Raster 3.0, lalu tampilkan foto objek mikrometer dengan cara pada taskbar atas klik **OPEN FOLDER**. Kemudian, akan ada jendela yang mengarahkan untuk mencari folder tempat foto tersimpan. Tandai foto objek mikrometer yang dimaksud, lalu klik **OPEN**.

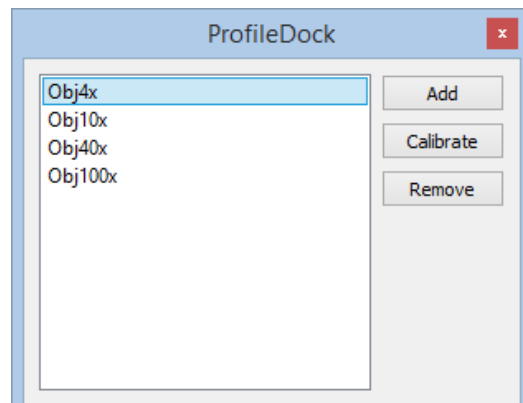
Contoh gambar Calibration Slide/ mikrometer objektif:



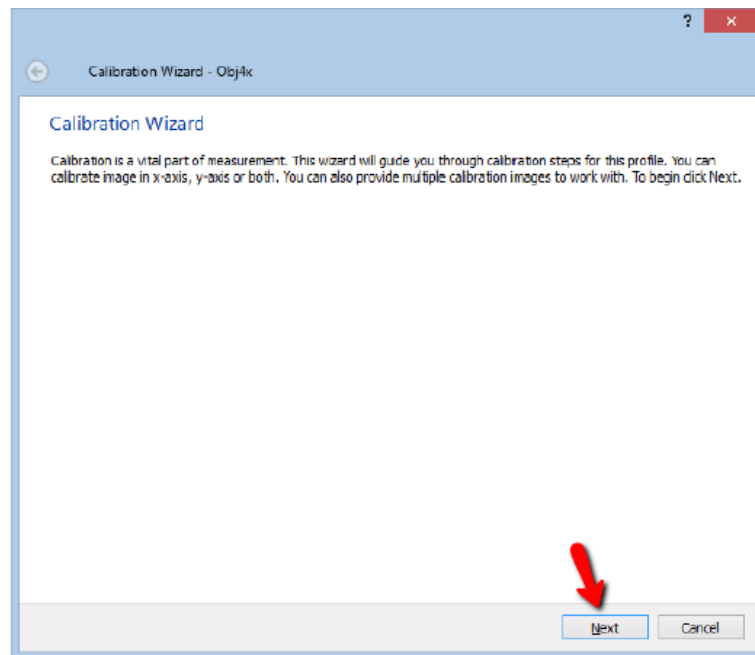
- b. Untuk memulai kalibrasi, klik Icon  Calibrate di panel sebelah kiri, akan tampil menu **Profil Dock** di sebelah kanan.



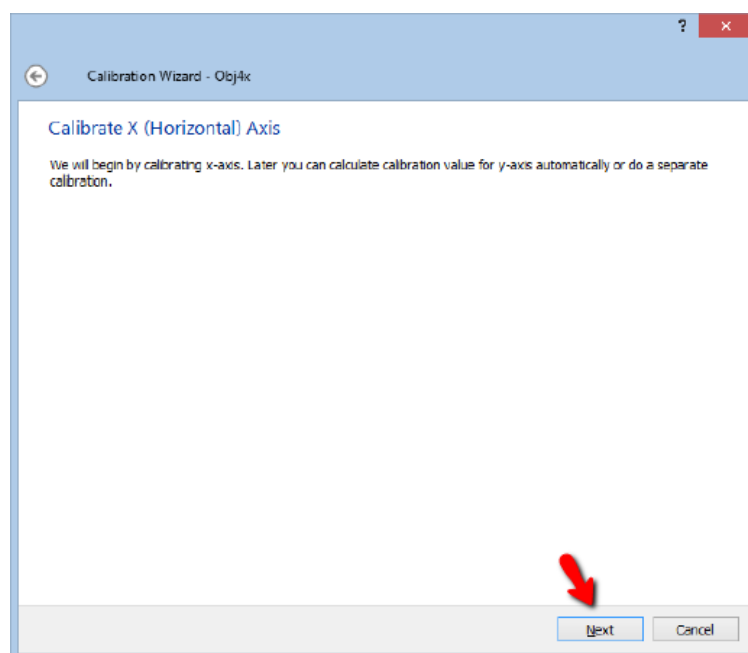
- c. Secara Default, Image Raster 3 berisi 4 profil lensa objektif, yaitu 4x, 10x, 40x, 100x. Untuk menambahkan profil lensa baru, pilih **Add** dan tentukan nama lensa objektif tersebut. Untuk menghapus, klik pada nama lensa yang akan dihapus, lalu klik **Remove**.
- d. Setelah selesai mengatur nama lensa objektif , pilih Profil Lensa lalu klik **Calibrate** untuk kalibrasi profil lensa. Kalibrasi dilakukan untuk masing-masing profil lensa objektif. Tahap kalibrasi dijelaskan seperti berikut:



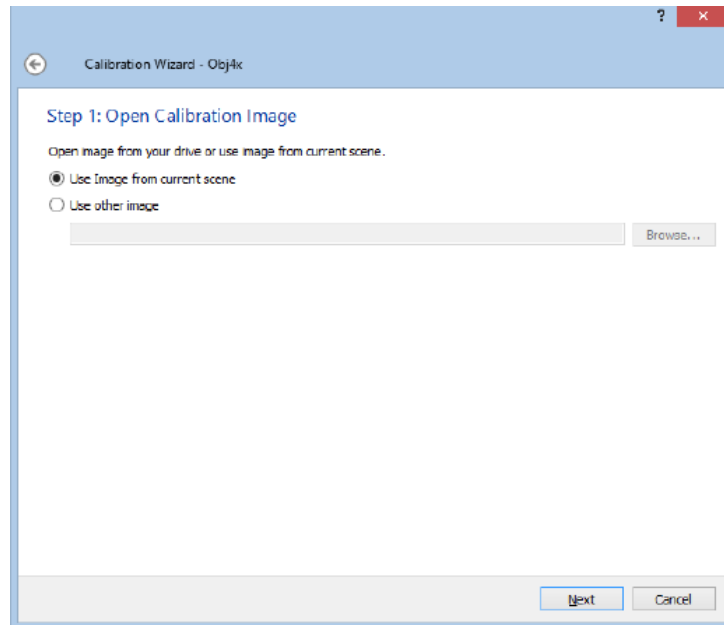
e. Muncul jendela untuk kalibrasi, klik *Next*



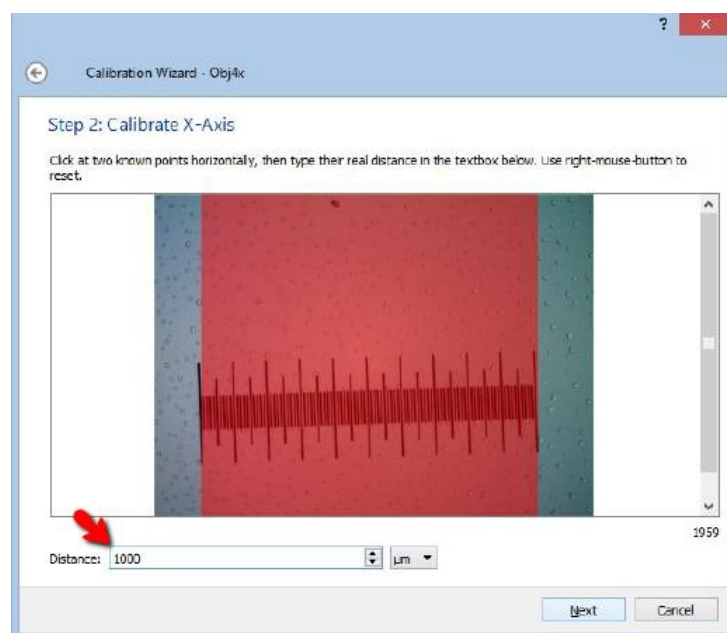
f. Muncul Jendela Informasi kalibrasi sumbu X, klik *Next*



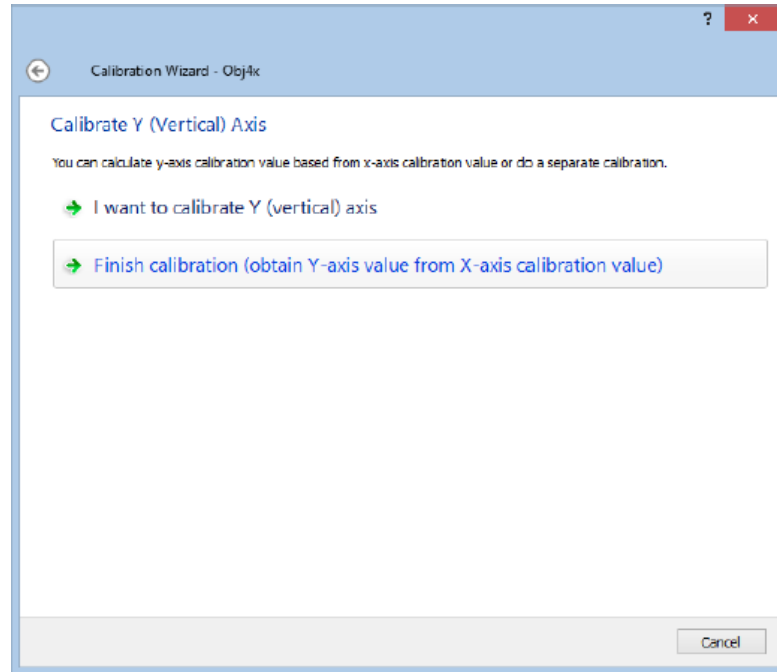
- g. Pilih gambar hasil capture Calibration Slide dengan perbesaran sesuai dengan Profile lensa objek yang sedang dikalibrasi, lalu klik *Next*



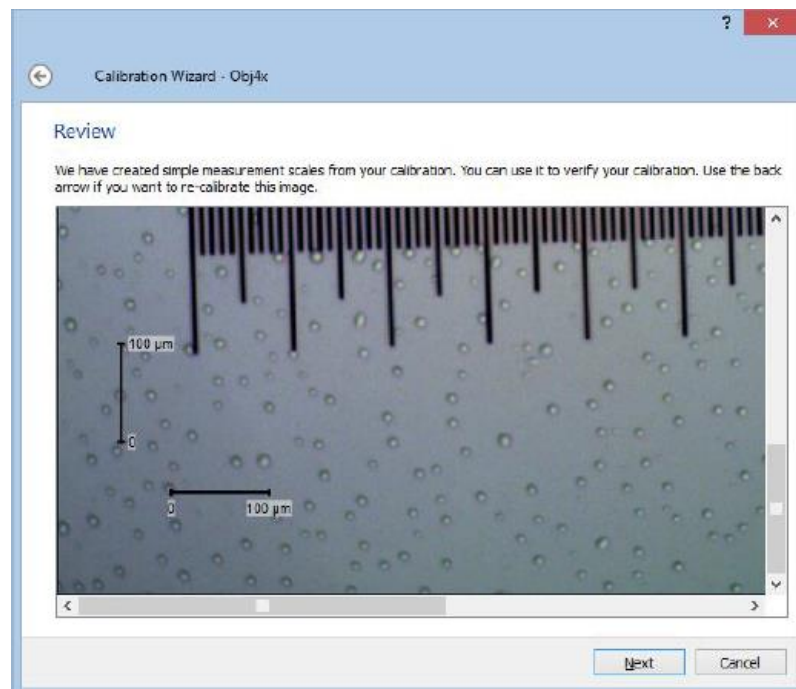
- h. Buat seleksi panjang tertentu dengan cara mem-block tampilan penggaris pada gambar Calibration Slide, lalu isikan panjang garis yang anda block tadi pada bagian *Distance*. (tidak harus mem-block keseluruhan penggaris, poin pentingnya adalah harus memasukkan angka pada bagian *distance* sesuai dengan beberapa panjang penggaris yang di block).



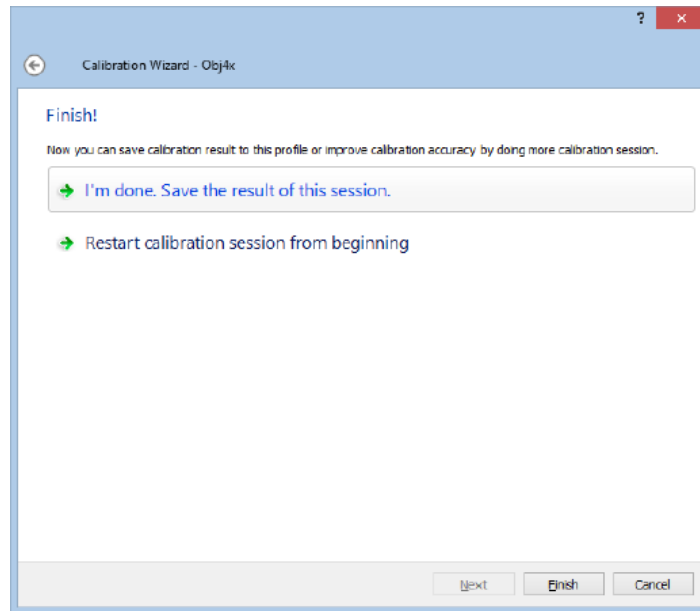
- i. Muncul Jendela untuk kalibrasi sumbu Y, jika sumbu Y ingin dikalibrasi secara otomatis, pilih Finish Calibration.



- j. Muncul jendela skala sesuai dengan nilai kalibrasi, tekan **Backspace** jikan ingin kembali dan klik **Next** jika ingin melanjutkan.



- k. Kalibrasi selesai, lakukan kalibrasi ulang untuk semua **Profile Lensa Objektif**.



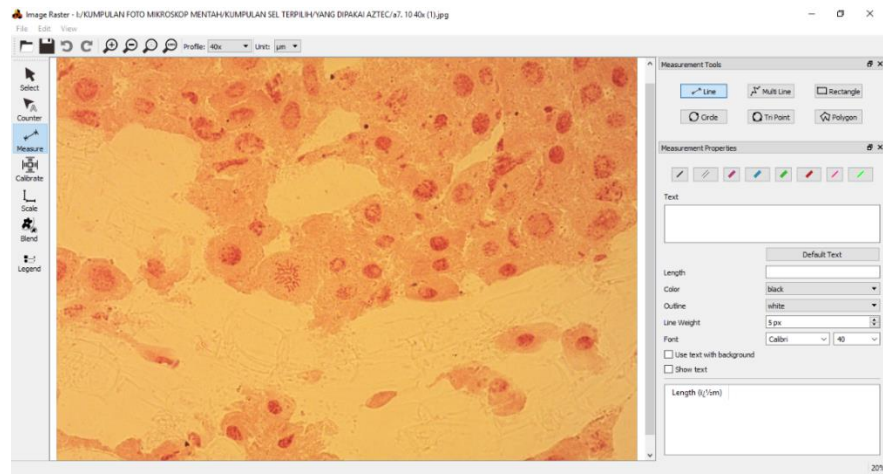
2. Mengukur panjang objek pada foto

Berikut langkah-langkah pengukuran panjang kromosom :

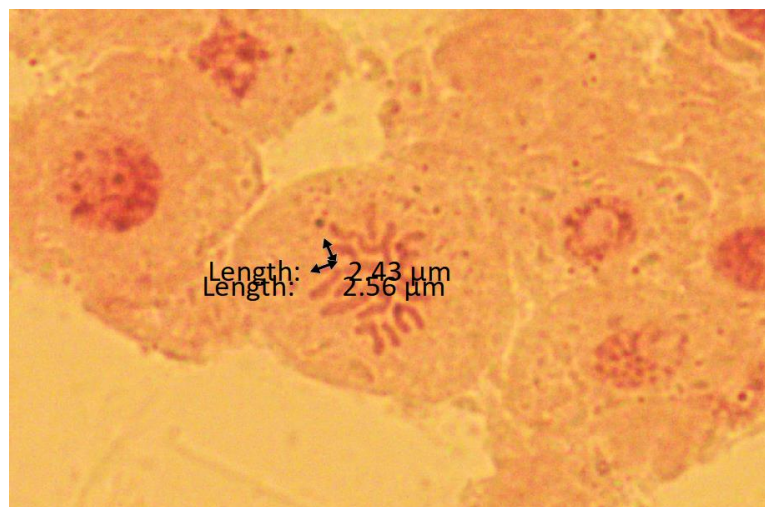
- a. Buka program Image Raster 3.0, kemudian tampilkan foto kromosom yang akan diukur dengan klik **OPEN FOLDER**. Kemudian, akan ada jendela yang mengarahkan untuk mencari folder tempat foto tersimpan. Tandai foto kromosom yang dimaksud, lalu klik **OPEN**.



- b. Untuk memulai pengukuran, klik Icon **Measure** di panel sebelah kiri, akan tampil menu **Profil Dock** di sebelah kanan.



- c. Pastikan profile lensa objektif sudah disesuaikan (4x, 10x, 40x dan 100x)
- d. Lakukan pengukuran dengan cara klik pada ujung kromosom, kemudian tarik ke arah sentromer kromosom dan nilai pengukuran otomatis keluar. Lakukan untuk panjang lengan keduanya.



	Length (μm)
1	2.43056
2	2.55787
3	2.63039

70%

- e. Setelah semua kromosom diukur, selanjutnya data pengukuran di-copy dan di-paste ke Microsoft Excel.

Lampiran 3. Tabel Analisis Karakter Kromosom

1. Jagung Varietas Pulut

a. Sampel Pulut 1

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.78	1.93	3.71	47.97844	1.08427	M
2	2.1	2.46	4.56	46.05263	1.171429	M
3	1.89	1.94	3.83	49.34726	1.026455	M
4	1.38	1.63	3.01	45.84718	1.181159	M
5	1.35	1.65	3	45	1.222222	M
6	2.12	2.4	4.52	46.90265	1.132075	M
7	1.67	1.77	3.44	48.54651	1.05988	M
8	2.17	2.26	4.43	48.9842	1.041475	M
9	1.77	1.87	3.64	48.62637	1.056497	M
10	1.95	2.11	4.06	48.02956	1.082051	M
11	1.63	1.9	3.53	46.17564	1.165644	M
12	1.66	1.99	3.65	45.47945	1.198795	M
13	2.21	2.38	4.59	48.14815	1.076923	M
14	1.66	1.91	3.57	46.4986	1.150602	M
15	1.67	1.68	3.35	49.85075	1.005988	M
16	1.98	2.12	4.1	48.29268	1.070707	M
17	1.49	1.52	3.01	49.50166	1.020134	M
18	1.49	2.12	3.61	41.27424	1.422819	M
19	1.64	1.75	3.39	48.37758	1.067073	M
20	1.64	1.78	3.42	47.95322	1.085366	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	13	2.21	2.38	4.59
	2	2.1	2.46	4.56
2	6	2.12	2.4	4.52
	8	2.17	2.26	4.43
3	16	1.98	2.12	4.1
	10	1.95	2.11	4.06
4	3	1.89	1.94	3.83
	1	1.78	1.93	3.71
5	12	1.66	1.99	3.65
	9	1.77	1.87	3.64
6	18	1.49	2.12	3.61
	14	1.66	1.91	3.57
7	11	1.63	1.9	3.53
	7	1.67	1.77	3.44
8	20	1.64	1.78	3.42
	19	1.64	1.75	3.39
9	15	1.67	1.68	3.35
	4	1.38	1.63	3.01
10	17	1.49	1.52	3.01
	5	1.35	1.65	3

b. Sampel Pulut 2

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.95	2.17	4.12	47.3301	1.112821	M
2	1.99	2.1	4.09	48.65526	1.055276	M
3	1.8	2.34	4.14	43.47826	1.3	M
4	1.96	2.06	4.02	48.75622	1.05102	M
5	1.78	2	3.78	47.08995	1.123596	M
6	2.1	2.55	4.65	45.16129	1.214286	M
7	1.59	1.67	3.26	48.77301	1.050314	M
8	2.27	2.31	4.58	49.56332	1.017621	M
9	1.71	1.93	3.64	46.97802	1.128655	M
10	1.89	1.98	3.87	48.83721	1.047619	M
11	1.77	2.06	3.83	46.2141	1.163842	M
12	1.86	1.9	3.76	49.46809	1.021505	M
13	1.96	2.44	4.4	44.54545	1.244898	M
14	2.03	2.15	4.18	48.56459	1.059113	M
15	1.93	2.11	4.04	47.77228	1.093264	M
16	2.28	2.34	4.62	49.35065	1.026316	M
17	1.63	1.97	3.6	45.27778	1.208589	M
18	1.88	2.18	4.06	46.30542	1.159574	M
19	2.19	2.25	4.44	49.32432	1.027397	M
20	1.64	2.08	3.72	44.08602	1.268293	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	6	2.1	2.55	4.65
	16	2.28	2.34	4.62
2	8	2.27	2.31	4.58
	19	2.19	2.25	4.44
3	13	1.96	2.44	4.4
	14	2.03	2.15	4.18
4	3	1.8	2.34	4.14
	1	1.95	2.17	4.12
5	2	1.99	2.1	4.09
	18	1.88	2.18	4.06
6	15	1.93	2.11	4.04
	4	1.96	2.06	4.02
7	10	1.89	1.98	3.87
	11	1.77	2.06	3.83
8	5	1.78	2	3.78
	12	1.86	1.9	3.76
9	20	1.64	2.08	3.72
	9	1.71	1.93	3.64
10	17	1.63	1.97	3.6
	7	1.59	1.67	3.26

c. Sampel Pulut 3

No	p (µm)	q (µm)	p+q (µm)	IS	RLK	BK
1	2.16	2.43	4.59	47.05882	1.125	M
2	1.82	1.94	3.76	48.40426	1.065934	M
3	1.83	1.99	3.82	47.90576	1.087432	M
4	2.2	2.33	4.53	48.56512	1.059091	M
5	1.68	2.01	3.69	45.52846	1.196429	M
6	1.92	2.14	4.06	47.29064	1.114583	M
7	1.36	1.57	2.93	46.41638	1.154412	M
8	1.76	2	3.76	46.80851	1.136364	M
9	1.92	2.15	4.07	47.17445	1.119792	M
10	1.89	2.18	4.07	46.43735	1.153439	M
11	1.86	2.03	3.89	47.81491	1.091398	M
12	1.83	2.05	3.88	47.16495	1.120219	M
13	1.75	1.85	3.6	48.61111	1.057143	M
14	1.39	1.42	2.81	49.46619	1.021583	M
15	1.34	1.76	3.1	43.22581	1.313433	M
16	1.44	1.6	3.04	47.36842	1.111111	M
17	1.93	2.48	4.41	43.76417	1.284974	M
18	1.66	1.8	3.46	47.97688	1.084337	M
19	1.56	1.8	3.36	46.42857	1.153846	M
20	1.72	2.03	3.75	45.86667	1.180233	M

No Pasangan	No Kromosom	p (µm)	q (µm)	p+q (µm)
1	1	2.16	2.43	4.59
	4	2.2	2.33	4.53
2	17	1.93	2.48	4.41
	9	1.92	2.15	4.07
3	10	1.89	2.18	4.07
	6	1.92	2.14	4.06
4	11	1.86	2.03	3.89
	12	1.83	2.05	3.88
5	3	1.83	1.99	3.82
	2	1.82	1.94	3.76
6	8	1.76	2	3.76
	20	1.72	2.03	3.75
7	5	1.68	2.01	3.69
	13	1.75	1.85	3.6
8	18	1.66	1.8	3.46
	19	1.56	1.8	3.36
9	15	1.34	1.76	3.1
	16	1.44	1.6	3.04
10	7	1.36	1.57	2.93
	14	1.39	1.42	2.81

d. Sampel Pulut 4

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.99	2.19	4.18	47.60766	1.100503	M
2	1.7	2	3.7	45.94595	1.176471	M
3	1.8	2.33	4.13	43.58354	1.294444	M
4	1.92	2.23	4.15	46.26506	1.161458	M
5	2.04	2.27	4.31	47.33179	1.112745	M
6	1.9	2.05	3.95	48.10127	1.078947	M
7	1.8	1.83	3.63	49.58678	1.016667	M
8	1.78	1.98	3.76	47.34043	1.11236	M
9	2.07	2.08	4.15	49.87952	1.004831	M
10	1.58	1.64	3.22	49.06832	1.037975	M
11	2.24	2.32	4.56	49.12281	1.035714	M
12	1.74	2.03	3.77	46.15385	1.166667	M
13	2.09	2.22	4.31	48.49188	1.062201	M
14	2	2.07	4.07	49.14005	1.035	M
15	1.95	2.09	4.04	48.26733	1.071795	M
16	1.88	2.3	4.18	44.97608	1.223404	M
17	1.92	2.27	4.19	45.82339	1.182292	M
18	1.73	2.25	3.98	43.46734	1.300578	M
19	1.88	2.13	4.01	46.88279	1.132979	M
20	2.17	2.39	4.56	47.58772	1.101382	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	11	2.24	2.32	4.56
	20	2.17	2.39	4.56
2	5	2.04	2.27	4.31
	13	2.09	2.22	4.31
3	17	1.92	2.27	4.19
	1	1.99	2.19	4.18
4	16	1.88	2.3	4.18
	4	1.92	2.23	4.15
5	9	2.07	2.08	4.15
	3	1.8	2.33	4.13
6	14	2	2.07	4.07
	15	1.95	2.09	4.04
7	19	1.88	2.13	4.01
	18	1.73	2.25	3.98
8	6	1.9	2.05	3.95
	12	1.74	2.03	3.77
9	8	1.78	1.98	3.76
	2	1.7	2	3.7
10	7	1.8	1.83	3.63
	10	1.58	1.64	3.22

e. Sampel Pulut 5

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	2.14	2.27	4.41	48.5261	1.06075	M
2	1.56	2.1	3.66	42.623	1.34615	M
3	1.66	2.05	3.71	44.7439	1.23494	M
4	1.52	1.76	3.28	46.3415	1.15789	M
5	2.12	2.19	4.31	49.1879	1.03302	M
6	1.79	1.92	3.71	48.248	1.07263	M
7	1.79	1.99	3.78	47.3545	1.11173	M
8	1.82	1.83	3.65	49.863	1.00549	M
9	1.27	1.57	2.84	44.7183	1.23622	M
10	1.71	1.94	3.65	46.8493	1.1345	M
11	1.62	1.86	3.48	46.5517	1.14815	M
12	1.47	1.6	3.07	47.8827	1.08844	M
13	2.07	2.28	4.35	47.5862	1.10145	M
14	1.38	1.64	3.02	45.6954	1.18841	M
15	1.53	1.95	3.48	43.9655	1.27451	M
16	1.54	1.7	3.24	47.5309	1.1039	M
17	1.73	2.01	3.74	46.2567	1.16185	M
18	1.65	2.02	3.67	44.9591	1.22424	M
19	1.54	1.84	3.38	45.5621	1.19481	M
20	2.11	2.29	4.4	47.9545	1.08531	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	1	2.14	2.27	4.41
	20	2.11	2.29	4.4
2	13	2.07	2.28	4.35
	5	2.12	2.19	4.31
3	7	1.79	1.99	3.78
	17	1.73	2.01	3.74
4	3	1.66	2.05	3.71
	6	1.79	1.92	3.71
5	18	1.65	2.02	3.67
	2	1.56	2.1	3.66
6	8	1.82	1.83	3.65
	10	1.71	1.94	3.65
7	11	1.62	1.86	3.48
	15	1.53	1.95	3.48
8	19	1.54	1.84	3.38
	4	1.52	1.76	3.28
9	16	1.54	1.7	3.24
	12	1.47	1.6	3.07
10	14	1.38	1.64	3.02
	9	1.27	1.57	2.84

f. Sampel pulut 6

No	p (µm)	q (µm)	p+q (µm)	IS	RLK	BK
1	2	2.13	4.13	48.42615	1.065	M
2	1.85	2.39	4.24	43.63208	1.291892	M
3	1.72	1.86	3.58	48.04469	1.081395	M
4	1.96	2.13	4.09	47.92176	1.086735	M
5	2.02	2.32	4.34	46.54378	1.148515	M
6	1.57	1.85	3.42	45.90643	1.178344	M
7	1.71	1.89	3.6	47.5	1.105263	M
8	1.83	1.97	3.8	48.15789	1.076503	M
9	1.66	1.83	3.49	47.56447	1.10241	M
10	1.81	2.01	3.82	47.3822	1.110497	M
11	1.85	2.09	3.94	46.95431	1.12973	M
12	1.91	1.95	3.86	49.48187	1.020942	M
13	1.76	1.8	3.56	49.4382	1.022727	M
14	1.73	1.88	3.61	47.92244	1.086705	M
15	1.84	2.14	3.98	46.23116	1.163043	M
16	1.89	1.95	3.84	49.21875	1.031746	M
17	2.1	2.35	4.45	47.19101	1.119048	M
18	1.87	1.9	3.77	49.60212	1.016043	M
19	1.62	2.08	3.7	43.78378	1.283951	M
20	1.89	2.07	3.96	47.72727	1.095238	M

No Pasangan	No Kromosom	p (µm)	q (µm)	p+q (µm)
1	17	2.1	2.35	4.45
	5	2.02	2.32	4.34
2	2	1.85	2.39	4.24
	1	2	2.13	4.13
3	4	1.96	2.13	4.09
	15	1.84	2.14	3.98
4	20	1.89	2.07	3.96
	11	1.85	2.09	3.94
5	12	1.91	1.95	3.86
	16	1.89	1.95	3.84
6	10	1.81	2.01	3.82
	8	1.83	1.97	3.8
7	18	1.87	1.9	3.77
	19	1.62	2.08	3.7
8	14	1.73	1.88	3.61
	7	1.71	1.89	3.6
9	3	1.72	1.86	3.58
	13	1.76	1.8	3.56
10	9	1.66	1.83	3.49
	6	1.57	1.85	3.42

g. Sampel Pulut 7

No	p (µm)	q (µm)	p+q (µm)	IS	RLK	BK
1	1.95	2	3.95	49.36709	1.025641	M
2	2.36	2.62	4.98	47.38956	1.110169	M
3	1.79	1.89	3.68	48.6413	1.055866	M
4	1.81	2.57	4.38	41.3242	1.41989	M
5	2.12	2.16	4.28	49.53271	1.018868	M
6	2.27	2.4	4.67	48.60814	1.057269	M
7	1.78	2.09	3.87	45.99483	1.174157	M
8	2.35	2.38	4.73	49.68288	1.012766	M
9	1.77	2.05	3.82	46.33508	1.158192	M
10	1.77	1.92	3.69	47.96748	1.084746	M
11	1.84	1.94	3.78	48.67725	1.054348	M
12	1.86	2	3.86	48.18653	1.075269	M
13	1.87	1.88	3.75	49.86667	1.005348	M
14	1.91	2.12	4.03	47.39454	1.109948	M
15	2.38	2.64	5.02	47.41036	1.109244	M
16	2	2.11	4.11	48.6618	1.055	M
17	1.93	1.98	3.91	49.36061	1.025907	M
18	1.64	1.77	3.41	48.09384	1.079268	M
19	1.8	1.84	3.64	49.45055	1.022222	M
20	1.81	1.97	3.78	47.8836	1.088398	M

No Pasangan	No Kromosom	p (µm)	q (µm)	p+q (µm)
1	15	2.38	2.64	5.02
	2	2.36	2.62	4.98
2	8	2.35	2.38	4.73
	6	2.27	2.4	4.67
3	4	1.81	2.57	4.38
	5	2.12	2.16	4.28
4	16	2	2.11	4.11
	14	1.91	2.12	4.03
5	1	1.95	2	3.95
	17	1.93	1.98	3.91
6	7	1.78	2.09	3.87
	12	1.86	2	3.86
7	9	1.77	2.05	3.82
	11	1.84	1.94	3.78
8	20	1.81	1.97	3.78
	13	1.87	1.88	3.75
9	10	1.77	1.92	3.69
	3	1.79	1.89	3.68
10	19	1.8	1.84	3.64
	18	1.64	1.77	3.41

h. Sampel Pulut 8

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	2.34	2.5	4.84	48.34711	1.068376	M
2	1.98	2.04	4.02	49.25373	1.030303	M
3	2.11	2.8	4.91	42.97352	1.327014	M
4	2.17	2.25	4.42	49.09502	1.036866	M
5	2.16	2.46	4.62	46.75325	1.138889	M
6	2.16	2.38	4.54	47.57709	1.101852	M
7	1.68	2	3.68	45.65217	1.190476	M
8	1.68	1.82	3.5	48	1.083333	M
9	2.22	2.46	4.68	47.4359	1.108108	M
10	1.91	1.98	3.89	49.10026	1.036649	M
11	2.25	2.32	4.57	49.23414	1.031111	M
12	1.77	1.87	3.64	48.62637	1.056497	M
13	2.22	2.26	4.48	49.55357	1.018018	M
14	2	2.12	4.12	48.54369	1.06	M
15	2.08	2.16	4.24	49.0566	1.038462	M
16	1.89	2.06	3.95	47.8481	1.089947	M
17	1.95	2.32	4.27	45.66745	1.189744	M
18	1.97	2	3.97	49.62217	1.015228	M
19	2.07	2.35	4.42	46.83258	1.135266	M
20	2	2.26	4.26	46.94836	1.13	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	3	2.11	2.8	4.91
	1	2.34	2.5	4.84
2	9	2.22	2.46	4.68
	5	2.16	2.46	4.62
3	11	2.25	2.32	4.57
	6	2.16	2.38	4.54
4	13	2.22	2.26	4.48
	4	2.17	2.25	4.42
5	19	2.07	2.35	4.42
	17	1.95	2.32	4.27
6	20	2	2.26	4.26
	15	2.08	2.16	4.24
7	14	2	2.12	4.12
	2	1.98	2.04	4.02
8	18	1.97	2	3.97
	16	1.89	2.06	3.95
9	10	1.91	1.98	3.89
	7	1.68	2	3.68
10	12	1.77	1.87	3.64
	8	1.68	1.82	3.5

i. Sampel Pulut 9

No	p (µm)	q (µm)	p+q (µm)	IS	RLK	BK
1	1.78	1.87	3.65	48.76712	1.050562	M
2	1.75	1.87	3.62	48.34254	1.068571	M
3	1.7	1.93	3.63	46.83196	1.135294	M
4	1.81	2.03	3.84	47.13542	1.121547	M
5	1.76	1.9	3.66	48.08743	1.079545	M
6	1.83	1.99	3.82	47.90576	1.087432	M
7	1.77	2.03	3.8	46.57895	1.146893	M
8	1.85	2.17	4.02	46.0199	1.172973	M
9	1.67	2.2	3.87	43.15245	1.317365	M
10	1.9	1.91	3.81	49.86877	1.005263	M
11	1.64	1.94	3.58	45.81006	1.182927	M
12	1.49	1.51	3	49.66667	1.013423	M
13	1.73	1.88	3.61	47.92244	1.086705	M
14	1.78	2.04	3.82	46.59686	1.146067	M
15	1.41	1.96	3.37	41.83976	1.390071	M
16	1.87	2.25	4.12	45.38835	1.203209	M
17	1.7	1.76	3.46	49.13295	1.035294	M
18	1.55	2.09	3.64	42.58242	1.348387	M
19	1.57	1.62	3.19	49.2163	1.031847	M
20	1.86	2.18	4.04	46.0396	1.172043	M

No Pasangan	No Kromosom	p (µm)	q (µm)	p+q (µm)
1	16	1.87	2.25	4.12
	20	1.86	2.18	4.04
2	8	1.85	2.17	4.02
	9	1.67	2.2	3.87
3	4	1.81	2.03	3.84
	6	1.83	1.99	3.82
4	14	1.78	2.04	3.82
	10	1.9	1.91	3.81
5	7	1.77	2.03	3.8
	5	1.76	1.9	3.66
6	1	1.78	1.87	3.65
	18	1.55	2.09	3.64
7	3	1.7	1.93	3.63
	2	1.75	1.87	3.62
8	13	1.73	1.88	3.61
	11	1.64	1.94	3.58
9	17	1.7	1.76	3.46
	15	1.41	1.96	3.37
10	19	1.57	1.62	3.19
	12	1.49	1.51	3

j. Sampel Pulut 10

No	p (µm)	q (µm)	p+q (µm)	IS	RLK	BK
1	1.95	2.18	4.13	47.2155	1.117949	M
2	1.68	1.82	3.5	48	1.083333	M
3	1.96	2.02	3.98	49.24623	1.030612	M
4	1.81	1.9	3.71	48.78706	1.049724	M
5	1.8	1.96	3.76	47.87234	1.088889	M
6	1.83	2.13	3.96	46.21212	1.163934	M
7	2.04	2.1	4.14	49.27536	1.029412	M
8	1.6	2.17	3.77	42.44032	1.35625	M
9	2	2.04	4.04	49.50495	1.02	M
10	1.84	1.92	3.76	48.93617	1.043478	M
11	1.83	1.99	3.82	47.90576	1.087432	M
12	1.83	2.34	4.17	43.88489	1.278689	M
13	2.07	2.23	4.3	48.13953	1.077295	M
14	1.63	1.88	3.51	46.43875	1.153374	M
15	2.02	2.22	4.24	47.64151	1.09901	M
16	1.6	2.15	3.75	42.66667	1.34375	M
17	2.06	2.09	4.15	49.63855	1.014563	M
18	1.92	2	3.92	48.97959	1.041667	M
19	2.04	2.35	4.39	46.46925	1.151961	M
20	1.82	2.05	3.87	47.02842	1.126374	M

No Pasangan	No Kromosom	p (µm)	q (µm)	p+q (µm)
1	19	2.04	2.35	4.39
	13	2.07	2.23	4.3
2	15	2.02	2.22	4.24
	12	1.83	2.34	4.17
3	17	2.06	2.09	4.15
	7	2.04	2.1	4.14
4	1	1.95	2.18	4.13
	9	2	2.04	4.04
5	3	1.96	2.02	3.98
	6	1.83	2.13	3.96
6	18	1.92	2	3.92
	20	1.82	2.05	3.87
7	11	1.83	1.99	3.82
	8	1.6	2.17	3.77
8	5	1.8	1.96	3.76
	10	1.84	1.92	3.76
9	16	1.6	2.15	3.75
	4	1.81	1.9	3.71
10	14	1.63	1.88	3.51
	2	1.68	1.82	3.5

2. Jagung Varietas *Black aztec*

a. Sampel *Black aztec* 1

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.77	2.6	4.37	40.50343	1.468927	M
2	2.49	3.16	5.65	44.0708	1.269076	M
3	2.36	2.96	5.32	44.3609	1.254237	M
4	2.27	2.74	5.01	45.30938	1.207048	M
5	2.74	2.79	5.53	49.54792	1.018248	M
6	2.23	2.52	4.75	46.94737	1.130045	M
7	2.08	2.17	4.25	48.94118	1.043269	M
8	2.51	3.81	6.32	39.71519	1.517928	M
9	1.97	2.19	4.16	47.35577	1.111675	M
10	2.19	3.01	5.2	42.11538	1.374429	M
11	1.88	2.43	4.31	43.61949	1.292553	M
12	1.78	2.49	4.27	41.68618	1.398876	M
13	2.95	3.05	6	49.16667	1.033898	M
14	1.91	2.11	4.02	47.51244	1.104712	M
15	2.12	2.59	4.71	45.01062	1.221698	M
16	1.91	2.12	4.03	47.39454	1.109948	M
17	2.03	2.2	4.23	47.99054	1.083744	M
18	1.83	2.43	4.26	42.95775	1.327869	M
19	2.44	3.01	5.45	44.77064	1.233607	M
20	2.34	2.65	4.99	46.89379	1.132479	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	8	2.51	3.81	6.32
	13	2.95	3.05	6
2	2	2.49	3.16	5.65
	5	2.74	2.79	5.53
3	19	2.44	3.01	5.45
	3	2.36	2.96	5.32
4	10	2.19	3.01	5.2
	4	2.27	2.74	5.01
5	20	2.34	2.65	4.99
	6	2.23	2.52	4.75
6	15	2.12	2.59	4.71
	1	1.77	2.6	4.37
7	11	1.88	2.43	4.31
	12	1.78	2.49	4.27
8	18	1.83	2.43	4.26
	7	2.08	2.17	4.25
9	17	2.03	2.2	4.23
	9	1.97	2.19	4.16
10	16	1.91	2.12	4.03
	14	1.91	2.11	4.02

a. Sampel *Black aztec 2*

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.79	2.31	4.1	43.65854	1.290503	M
2	2.42	2.85	5.27	45.9203	1.177686	M
3	2.34	2.59	4.93	47.4645	1.106838	M
4	2.38	2.79	5.17	46.03482	1.172269	M
5	2.51	3.34	5.85	42.90598	1.330677	M
6	1.82	1.88	3.7	49.18919	1.032967	M
7	1.83	2.15	3.98	45.9799	1.174863	M
8	2.62	2.87	5.49	47.72313	1.09542	M
9	2.08	2.32	4.4	47.27273	1.115385	M
10	2.5	3.09	5.59	44.72272	1.236	M
11	2.03	3.03	5.06	40.11858	1.492611	M
12	2.24	3.63	5.87	38.16014	1.620536	M
13	1.78	2.05	3.83	46.4752	1.151685	M
14	2.1	2.2	4.3	48.83721	1.047619	M
15	2.25	2.54	4.79	46.97286	1.128889	M
16	2.25	3.02	5.27	42.6945	1.342222	M
17	3.01	3.6	6.61	45.53707	1.196013	M
18	2.39	2.47	4.86	49.17695	1.033473	M
19	1.83	2.49	4.32	42.36111	1.360656	M
20	2.14	2.39	4.53	47.24062	1.116822	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	17	3.01	3.6	6.61
	12	2.24	3.63	5.87
2	5	2.51	3.34	5.85
	10	2.5	3.09	5.59
3	8	2.62	2.87	5.49
	2	2.42	2.85	5.27
4	16	2.25	3.02	5.27
	4	2.38	2.79	5.17
5	11	2.03	3.03	5.06
	3	2.34	2.59	4.93
6	18	2.39	2.47	4.86
	15	2.25	2.54	4.79
7	20	2.14	2.39	4.53
	9	2.08	2.32	4.4
8	19	1.83	2.49	4.32
	14	2.1	2.2	4.3
9	1	1.79	2.31	4.1
	7	1.83	2.15	3.98
10	13	1.78	2.05	3.83
	6	1.82	1.88	3.7

b. Sampel *Black aztec 3*

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.73	2.25	3.98	43.46734	1.300578	M
2	2.23	2.79	5.02	44.42231	1.251121	M
3	1.55	2.17	3.72	41.66667	1.4	M
4	1.84	2.18	4.02	45.77114	1.184783	M
5	2.15	2.19	4.34	49.53917	1.018605	M
6	1.68	1.8	3.48	48.27586	1.071429	M
7	1.7	1.94	3.64	46.7033	1.141176	M
8	1.78	2.72	4.5	39.55556	1.52809	M
9	1.47	1.55	3.02	48.6755	1.054422	M
10	1.7	2.75	4.45	38.20225	1.617647	M
11	1.67	2.23	3.9	42.82051	1.335329	M
12	1.42	1.69	3.11	45.65916	1.190141	M
13	1.54	1.65	3.19	48.27586	1.071429	M
14	1.37	1.67	3.04	45.06579	1.218978	M
15	1.39	1.97	3.36	41.36905	1.417266	M
16	1.89	2.96	4.85	38.96907	1.566138	M
17	1.94	2.23	4.17	46.52278	1.149485	M
18	1.55	1.91	3.46	44.79769	1.232258	M
19	1.69	1.79	3.48	48.56322	1.059172	M
20	2.23	2.26	4.49	49.66592	1.013453	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	2	2.23	2.79	5.02
	16	1.89	2.96	4.85
2	8	1.78	2.72	4.5
	20	2.23	2.26	4.49
3	10	1.7	2.75	4.45
	5	2.15	2.19	4.34
4	17	1.94	2.23	4.17
	4	1.84	2.18	4.02
5	1	1.73	2.25	3.98
	11	1.67	2.23	3.9
6	3	1.55	2.17	3.72
	7	1.7	1.94	3.64
7	6	1.68	1.8	3.48
	19	1.69	1.79	3.48
8	18	1.55	1.91	3.46
	15	1.39	1.97	3.36
9	13	1.54	1.65	3.19
	12	1.42	1.69	3.11
10	14	1.37	1.67	3.04
	9	1.47	1.55	3.02

c. Sampel *Black aztec 4*

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.83	2.04	3.87	47.28682	1.114754	M
2	1.98	2.3	4.28	46.26168	1.161616	M
3	2.05	2.09	4.14	49.51691	1.019512	M
4	2.05	2.97	5.02	40.83665	1.44878	M
5	2.15	3	5.15	41.74757	1.395349	M
6	1.83	1.93	3.76	48.67021	1.054645	M
7	2.34	2.93	5.27	44.40228	1.252137	M
8	1.81	2.23	4.04	44.80198	1.232044	M
9	1.87	1.93	3.8	49.21053	1.032086	M
10	1.84	2.42	4.26	43.19249	1.315217	M
11	1.66	2.05	3.71	44.74394	1.23494	M
12	2.06	2.43	4.49	45.87973	1.179612	M
13	1.8	2.03	3.83	46.99739	1.127778	M
14	1.68	1.93	3.61	46.5374	1.14881	M
15	1.57	2.4	3.97	39.5466	1.528662	M
16	1.9	1.92	3.82	49.73822	1.010526	M
17	1.85	2.06	3.91	47.31458	1.113514	M
18	1.7	1.92	3.62	46.96133	1.129412	M
19	1.81	1.91	3.72	48.65591	1.055249	M
20	1.67	2.07	3.74	44.65241	1.239521	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	7	2.34	2.93	5.27
	5	2.15	3	5.15
2	4	2.05	2.97	5.02
	12	2.06	2.43	4.49
3	2	1.98	2.3	4.28
	10	1.84	2.42	4.26
4	3	2.05	2.09	4.14
	8	1.81	2.23	4.04
5	15	1.57	2.4	3.97
	17	1.85	2.06	3.91
6	1	1.83	2.04	3.87
	13	1.8	2.03	3.83
7	16	1.9	1.92	3.82
	9	1.87	1.93	3.8
8	6	1.83	1.93	3.76
	20	1.67	2.07	3.74
9	19	1.81	1.91	3.72
	11	1.66	2.05	3.71
10	18	1.7	1.92	3.62
	14	1.68	1.93	3.61

d. Sampel *Black aztec 5*

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.89	2.04	3.93	48.0916	1.079365	M
2	2.07	2.34	4.41	46.93878	1.130435	M
3	2.1	2.18	4.28	49.06542	1.038095	M
4	2.15	2.2	4.35	49.42529	1.023256	M
5	1.75	2.31	4.06	43.10345	1.32	M
6	1.9	2	3.9	48.71795	1.052632	M
7	1.67	1.88	3.55	47.04225	1.125749	M
8	1.92	2.23	4.15	46.26506	1.161458	M
9	1.91	1.95	3.86	49.48187	1.020942	M
10	1.62	2.49	4.11	39.41606	1.537037	M
11	1.37	1.78	3.15	43.49206	1.29927	M
12	1.69	2.14	3.83	44.12533	1.266272	M
13	2.07	2.19	4.26	48.59155	1.057971	M
14	1.87	1.98	3.85	48.57143	1.058824	M
15	1.6	1.78	3.38	47.33728	1.1125	M
16	1.87	2.3	4.17	44.84412	1.229947	M
17	1.64	1.66	3.3	49.69697	1.012195	M
18	1.62	2.04	3.66	44.2623	1.259259	M
19	1.8	1.91	3.71	48.51752	1.061111	M
20	1.95	2.13	4.08	47.79412	1.092308	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	2	2.07	2.34	4.41
	4	2.15	2.2	4.35
2	3	2.1	2.18	4.28
	13	2.07	2.19	4.26
3	16	1.87	2.3	4.17
	8	1.92	2.23	4.15
4	10	1.62	2.49	4.11
	20	1.95	2.13	4.08
5	5	1.75	2.31	4.06
	1	1.89	2.04	3.93
6	6	1.9	2	3.9
	9	1.91	1.95	3.86
7	14	1.87	1.98	3.85
	12	1.69	2.14	3.83
8	19	1.8	1.91	3.71
	18	1.62	2.04	3.66
9	7	1.67	1.88	3.55
	15	1.6	1.78	3.38
10	17	1.64	1.66	3.3
	11	1.37	1.78	3.15

e. Sampel *Black aztec 6*

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.45	1.64	3.09	46.92557	1.131034	M
2	1.88	2.22	4.1	45.85366	1.180851	M
3	1.53	1.94	3.47	44.09222	1.267974	M
4	2.31	2.38	4.69	49.25373	1.030303	M
5	1.64	1.97	3.61	45.42936	1.20122	M
6	1.73	1.88	3.61	47.92244	1.086705	M
7	1.79	1.89	3.68	48.6413	1.055866	M
8	1.84	2.84	4.68	39.31624	1.543478	M
9	1.64	1.98	3.62	45.30387	1.207317	M
10	1.83	2.45	4.28	42.75701	1.338798	M
11	1.62	2.1	3.72	43.54839	1.296296	M
12	1.84	2.58	4.42	41.62896	1.402174	M
13	2.02	2.05	4.07	49.63145	1.014851	M
14	1.6	1.62	3.22	49.68944	1.0125	M
15	2.37	2.6	4.97	47.68612	1.097046	M
16	1.57	2.15	3.72	42.2043	1.369427	M
17	1.94	2.27	4.21	46.08076	1.170103	M
18	1.69	1.84	3.53	47.87535	1.088757	M
19	1.51	1.98	3.49	43.26648	1.311258	M
20	2.03	2.14	4.17	48.68106	1.054187	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	15	2.37	2.6	4.97
	4	2.31	2.38	4.69
2	8	1.84	2.84	4.68
	12	1.84	2.58	4.42
3	10	1.83	2.45	4.28
	17	1.94	2.27	4.21
4	20	2.03	2.14	4.17
	2	1.88	2.22	4.1
5	13	2.02	2.05	4.07
	11	1.62	2.1	3.72
6	16	1.57	2.15	3.72
	7	1.79	1.89	3.68
7	9	1.64	1.98	3.62
	5	1.64	1.97	3.61
8	6	1.73	1.88	3.61
	18	1.69	1.84	3.53
9	19	1.51	1.98	3.49
	3	1.53	1.94	3.47
10	14	1.6	1.62	3.22
	1	1.45	1.64	3.09

f. Sampel *Black aztec 7*

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.59	2.14	3.73	42.62735	1.345912	M
2	2.25	2.28	4.53	49.66887	1.013333	M
3	1.98	2.15	4.13	47.94189	1.085859	M
4	2.15	2.4	4.55	47.25275	1.116279	M
5	2.53	2.65	5.18	48.8417	1.047431	M
6	1.59	1.73	3.32	47.89157	1.08805	M
7	2.55	3.09	5.64	45.21277	1.211765	M
8	2	2.72	4.72	42.37288	1.36	M
9	1.93	2	3.93	49.10941	1.036269	M
10	2.38	2.78	5.16	46.12403	1.168067	M
11	2.44	2.49	4.93	49.4929	1.020492	M
12	2.12	2.51	4.63	45.78834	1.183962	M
13	2.23	2.49	4.72	47.24576	1.116592	M
14	1.91	2.37	4.28	44.62617	1.240838	M
15	1.9	2.23	4.13	46.00484	1.173684	M
16	2.24	2.34	4.58	48.9083	1.044643	M
17	2.26	2.32	4.58	49.34498	1.026549	M
18	1.79	2.16	3.95	45.31646	1.206704	M
19	1.99	2.02	4.01	49.62594	1.015075	M
20	1.73	2.05	3.78	45.7672	1.184971	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	7	2.55	3.09	5.64
	5	2.53	2.65	5.18
2	10	2.38	2.78	5.16
	11	2.44	2.49	4.93
3	8	2	2.72	4.72
	13	2.23	2.49	4.72
4	12	2.12	2.51	4.63
	16	2.24	2.34	4.58
5	17	2.26	2.32	4.58
	4	2.15	2.4	4.55
6	2	2.25	2.28	4.53
	14	1.91	2.37	4.28
7	3	1.98	2.15	4.13
	15	1.9	2.23	4.13
8	19	1.99	2.02	4.01
	18	1.79	2.16	3.95
9	9	1.93	2	3.93
	20	1.73	2.05	3.78
10	1	1.59	2.14	3.73
	6	1.59	1.73	3.32

g. Sampel *Black aztec 8*

No	p (µm)	q (µm)	p+q (µm)	IS	RLK	BK
1	1.78	2.03	3.81	46.71916	1.140449	M
2	2.07	2.1	4.17	49.64029	1.014493	M
3	1.85	2.26	4.11	45.01217	1.221622	M
4	2.06	2.26	4.32	47.68519	1.097087	M
5	2.1	2.28	4.38	47.94521	1.085714	M
6	1.79	2.04	3.83	46.73629	1.139665	M
7	2.12	2.72	4.84	43.80165	1.283019	M
8	2.23	3.15	5.38	41.44981	1.412556	M
9	1.93	2.14	4.07	47.42015	1.108808	M
10	2.1	2.72	4.82	43.56846	1.295238	M
11	1.95	2.41	4.36	44.72477	1.235897	M
12	1.72	2.42	4.14	41.54589	1.406977	M
13	1.95	2.57	4.52	43.14159	1.317949	M
14	1.56	2.23	3.79	41.16095	1.429487	M
15	1.79	2.23	4.02	44.52736	1.24581	M
16	2.39	2.9	5.29	45.17958	1.213389	M
17	2.03	2.16	4.19	48.44869	1.064039	M
18	1.85	2.36	4.21	43.94299	1.275676	M
19	1.82	1.84	3.66	49.72678	1.010989	M
20	1.89	2.22	4.11	45.9854	1.174603	M

No Pasangan	No Kromosom	p (µm)	q (µm)	p+q (µm)
1	8	2.23	3.15	5.38
	16	2.39	2.9	5.29
2	7	2.12	2.72	4.84
	10	2.1	2.72	4.82
3	13	1.95	2.57	4.52
	5	2.1	2.28	4.38
4	11	1.95	2.41	4.36
	4	2.06	2.26	4.32
5	18	1.85	2.36	4.21
	17	2.03	2.16	4.19
6	2	2.07	2.1	4.17
	12	1.72	2.42	4.14
7	20	1.89	2.22	4.11
	3	1.85	2.26	4.11
8	9	1.93	2.14	4.07
	15	1.79	2.23	4.02
9	6	1.79	2.04	3.83
	1	1.78	2.03	3.81
10	14	1.56	2.23	3.79
	19	1.82	1.84	3.66

h. Sampel *Black aztec* 9

No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	2.05	2.62	4.67	43.89722	1.278049	M
2	2.25	2.65	4.9	45.91837	1.177778	M
3	2.25	2.56	4.81	46.77755	1.137778	M
4	2.37	2.5	4.87	48.6653	1.054852	M
5	1.63	2.17	3.8	42.89474	1.331288	M
6	2.02	2.46	4.48	45.08929	1.217822	M
7	1.92	2.54	4.46	43.04933	1.322917	M
8	2.27	3.02	5.29	42.91115	1.330396	M
9	1.88	1.98	3.86	48.70466	1.053191	M
10	2.16	2.96	5.12	42.1875	1.37037	M
11	2.13	2.64	4.77	44.65409	1.239437	M
12	3.23	3.46	6.69	48.28102	1.071207	M
13	2.59	3.42	6.01	43.09484	1.320463	M
14	2.32	2.68	5	46.4	1.155172	M
15	2.6	3.14	5.74	45.29617	1.207692	M
16	2.83	2.94	5.77	49.04679	1.038869	M
17	1.85	2.68	4.53	40.83885	1.448649	M
18	1.7	2.15	3.85	44.15584	1.264706	M
19	1.69	1.99	3.68	45.92391	1.177515	M
20	2.53	2.77	5.3	47.73585	1.094862	M

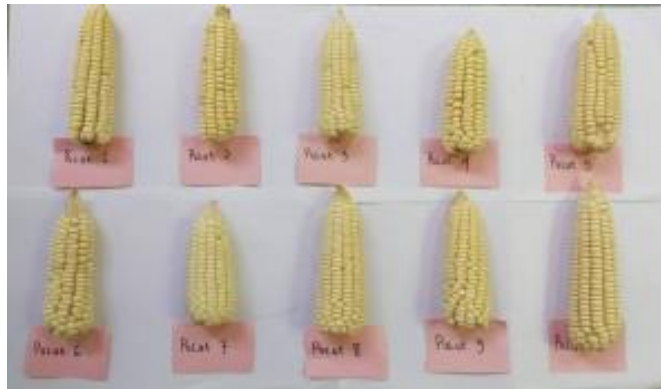
No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	12	3.23	3.46	6.69
	13	2.59	3.42	6.01
2	16	2.83	2.94	5.77
	15	2.6	3.14	5.74
3	20	2.53	2.77	5.3
	8	2.27	3.02	5.29
4	10	2.16	2.96	5.12
	14	2.32	2.68	5
5	2	2.25	2.65	4.9
	4	2.37	2.5	4.87
6	3	2.25	2.56	4.81
	11	2.13	2.64	4.77
7	1	2.05	2.62	4.67
	17	1.85	2.68	4.53
8	6	2.02	2.46	4.48
	7	1.92	2.54	4.46
9	9	1.88	1.98	3.86
	18	1.7	2.15	3.85
10	5	1.63	2.17	3.8
	19	1.69	1.99	3.68

i. Sampel *Black aztec* 10

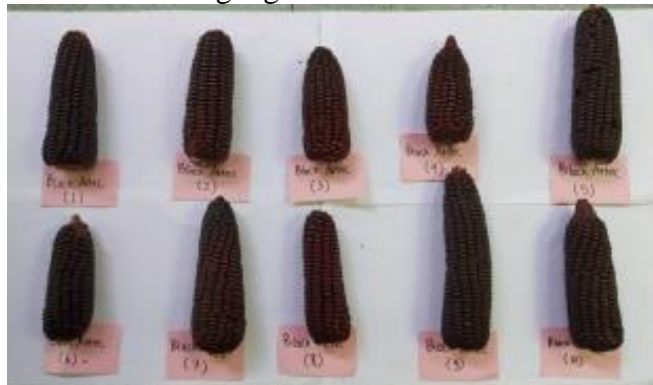
No	p (μm)	q (μm)	p+q (μm)	IS	RLK	BK
1	1.54	1.81	3.35	45.97015	1.175325	M
2	1.43	2.12	3.55	40.28169	1.482517	M
3	1.91	2.08	3.99	47.86967	1.089005	M
4	2.06	2.3	4.36	47.24771	1.116505	M
5	1.7	1.83	3.53	48.15864	1.076471	M
6	1.41	1.95	3.36	41.96429	1.382979	M
7	1.85	2.3	4.15	44.57831	1.243243	M
8	2.25	2.61	4.86	46.2963	1.16	M
9	1.8	1.94	3.74	48.12834	1.077778	M
10	1.92	2.02	3.94	48.73096	1.052083	M
11	1.76	1.85	3.61	48.75346	1.051136	M
12	1.89	2.26	4.15	45.54217	1.195767	M
13	2.3	2.4	4.7	48.93617	1.043478	M
14	1.74	2.05	3.79	45.91029	1.178161	M
15	2.09	2.31	4.4	47.5	1.105263	M
16	1.96	2.01	3.97	49.37028	1.02551	M
17	1.63	2.44	4.07	40.04914	1.496933	M
18	1.71	2.25	3.96	43.18182	1.315789	M
19	1.93	1.99	3.92	49.23469	1.031088	M
20	1.83	1.98	3.81	48.0315	1.081967	M

No Pasangan	No Kromosom	p (μm)	q (μm)	p+q (μm)
1	8	2.25	2.61	4.86
	13	2.3	2.4	4.7
2	15	2.09	2.31	4.4
	4	2.06	2.3	4.36
3	7	1.85	2.3	4.15
	12	1.89	2.26	4.15
4	17	1.63	2.44	4.07
	3	1.91	2.08	3.99
5	16	1.96	2.01	3.97
	18	1.71	2.25	3.96
6	10	1.92	2.02	3.94
	19	1.93	1.99	3.92
7	20	1.83	1.98	3.81
	14	1.74	2.05	3.79
8	9	1.8	1.94	3.74
	11	1.76	1.85	3.61
9	2	1.43	2.12	3.55
	5	1.7	1.83	3.53
10	6	1.41	1.95	3.36
	1	1.54	1.81	3.35

Lampiran 4. Dokumentasi Penelitian



Jagung Varietas Pulut



Jagung Varietas *Black aztec*



Perkecambahan benih jagung



Pengenceran Aceto-orcein 3%



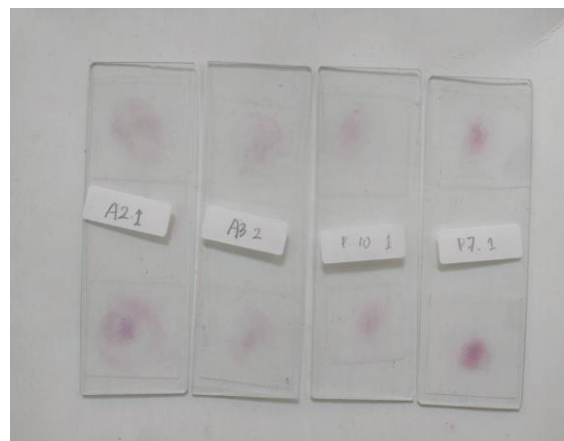
Fixasi akar tanaman jagung dengan asam asetat glasial (AAG) 45%



Maserasi akar tanaman jagung dengan HCL 1 N



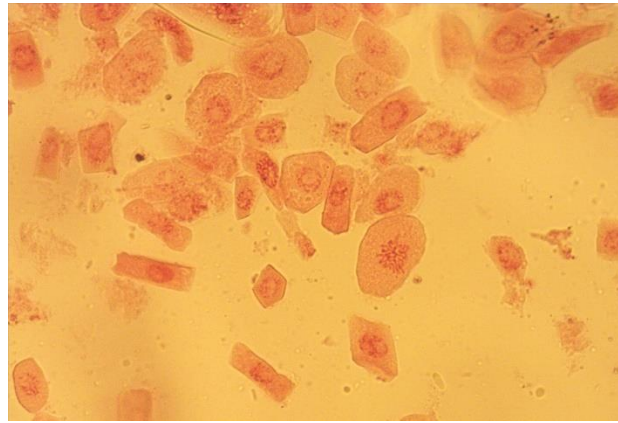
Pewarnaan akar tanaman jagung dengan aceto-orcein 3%



Preparasi akar tanaman jagung



Pengamatan Mikroskopis



Hasil pengamatan mikroskopis