

STRUCTURE OF WHEAT GRAIN

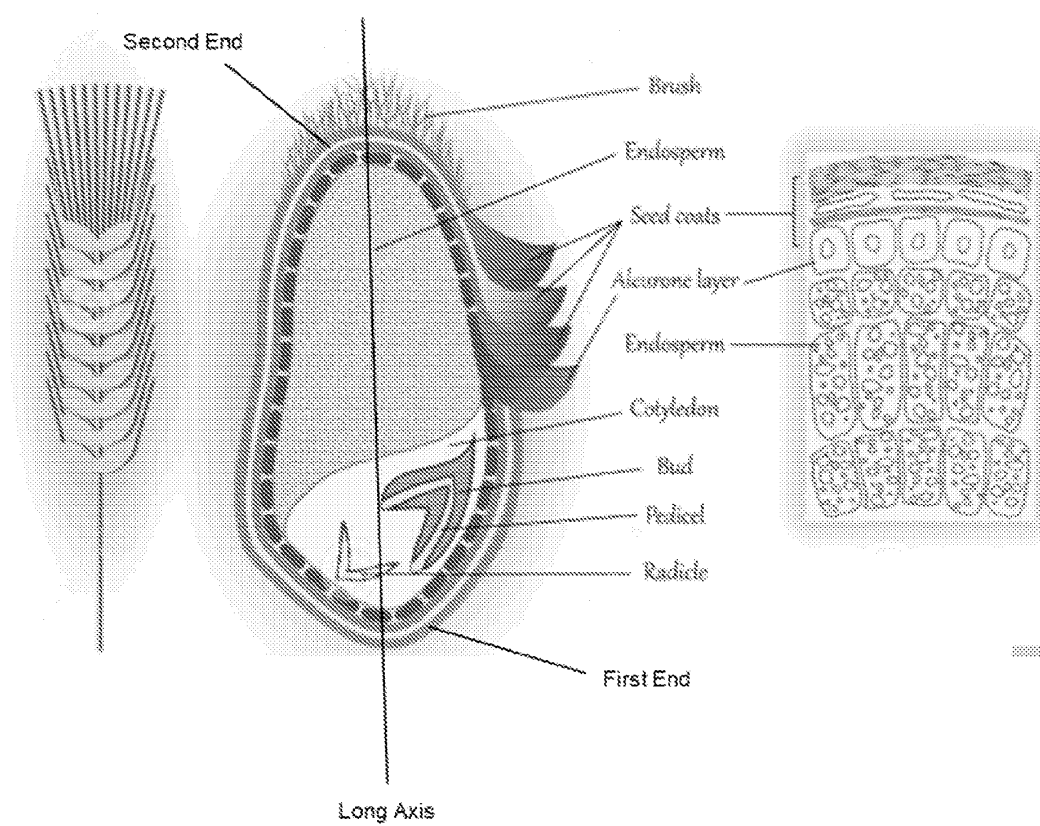
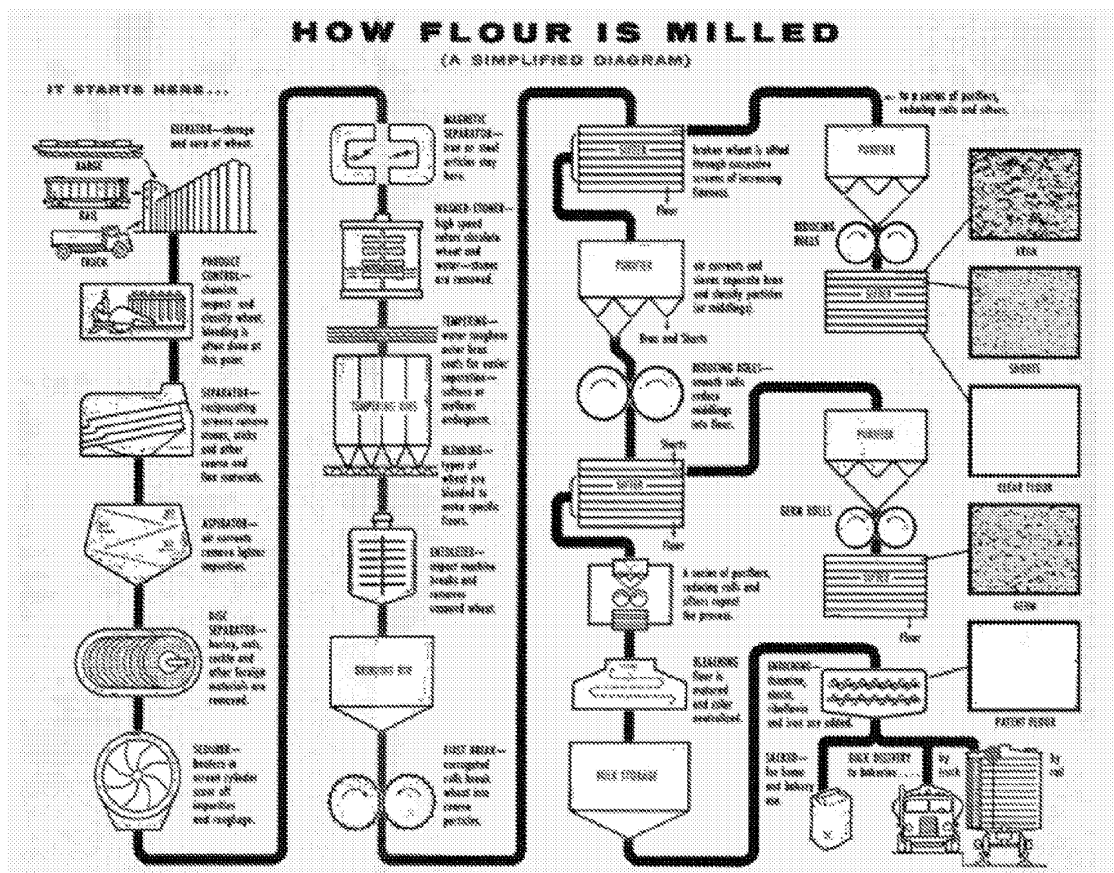
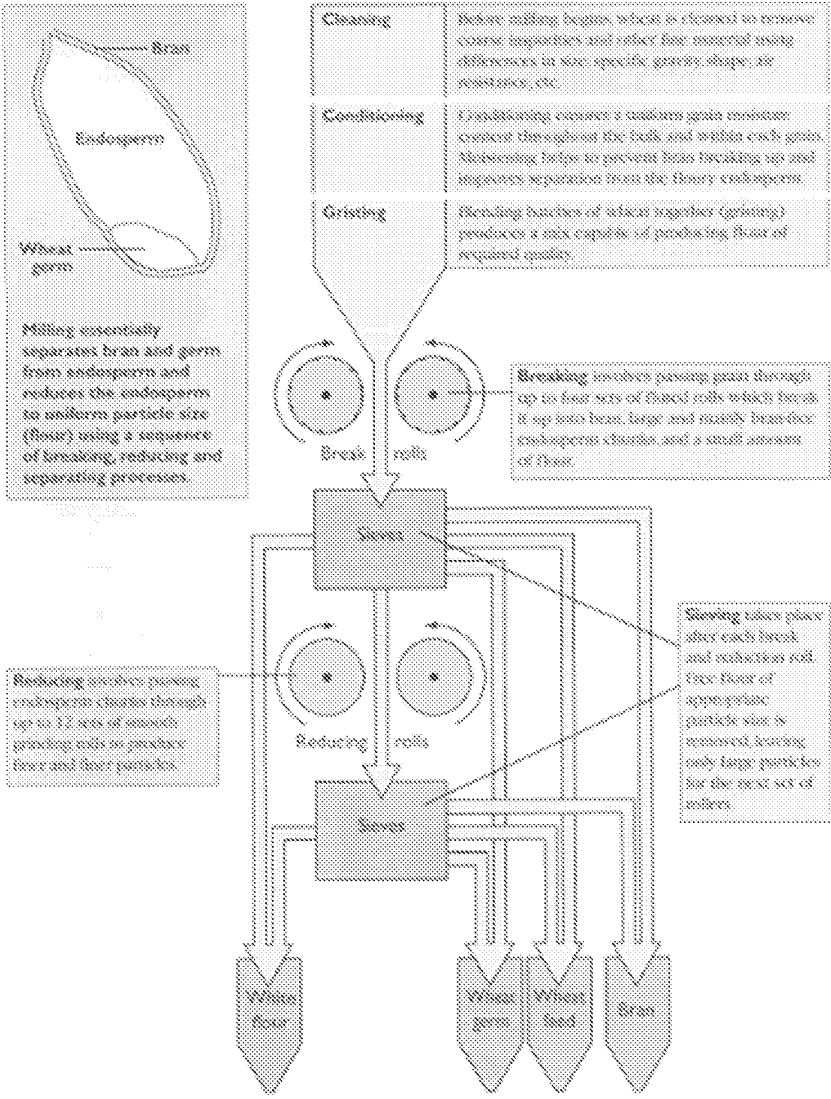


FIG. 1



--PRIOR ART--

FIG. 2



--PRIOR ART--

FIG. 3



FIG. 4

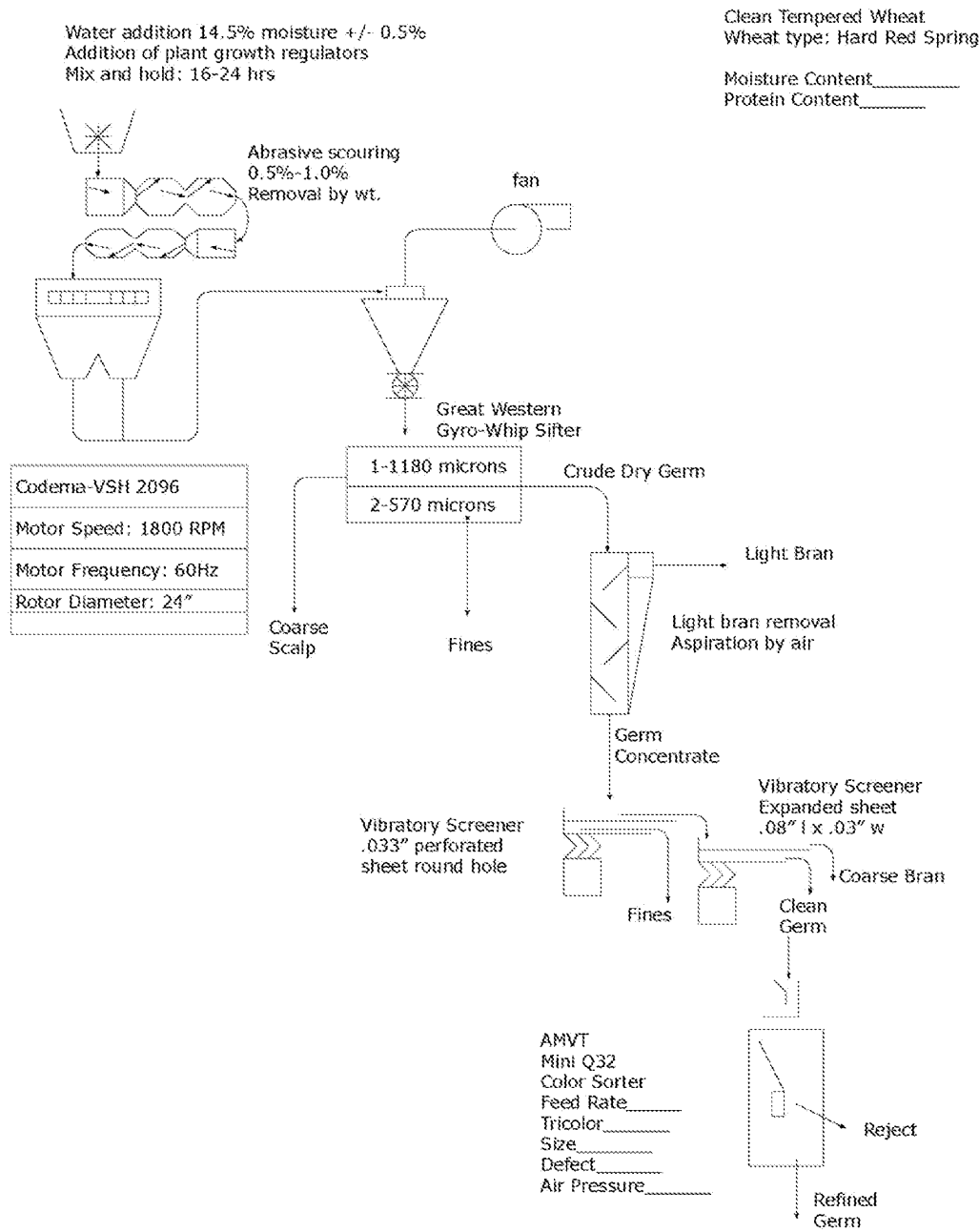


FIG. 5

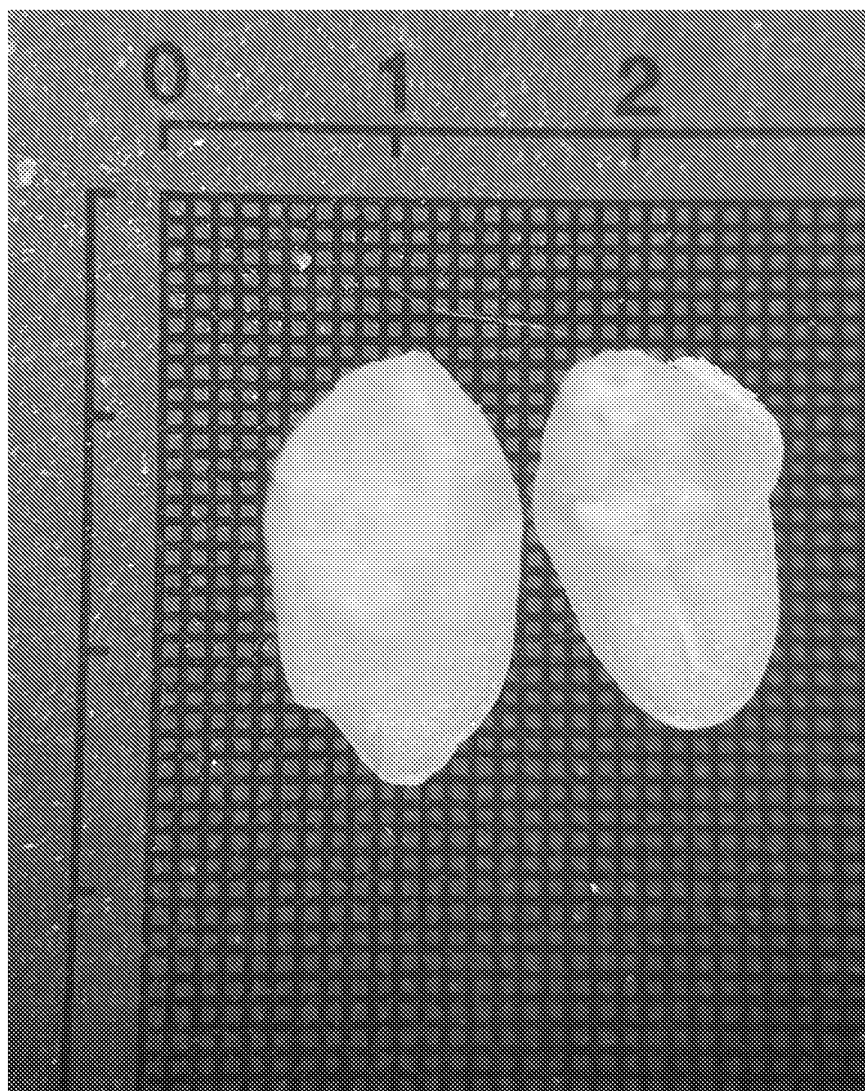


FIG. 6



FIG. 7

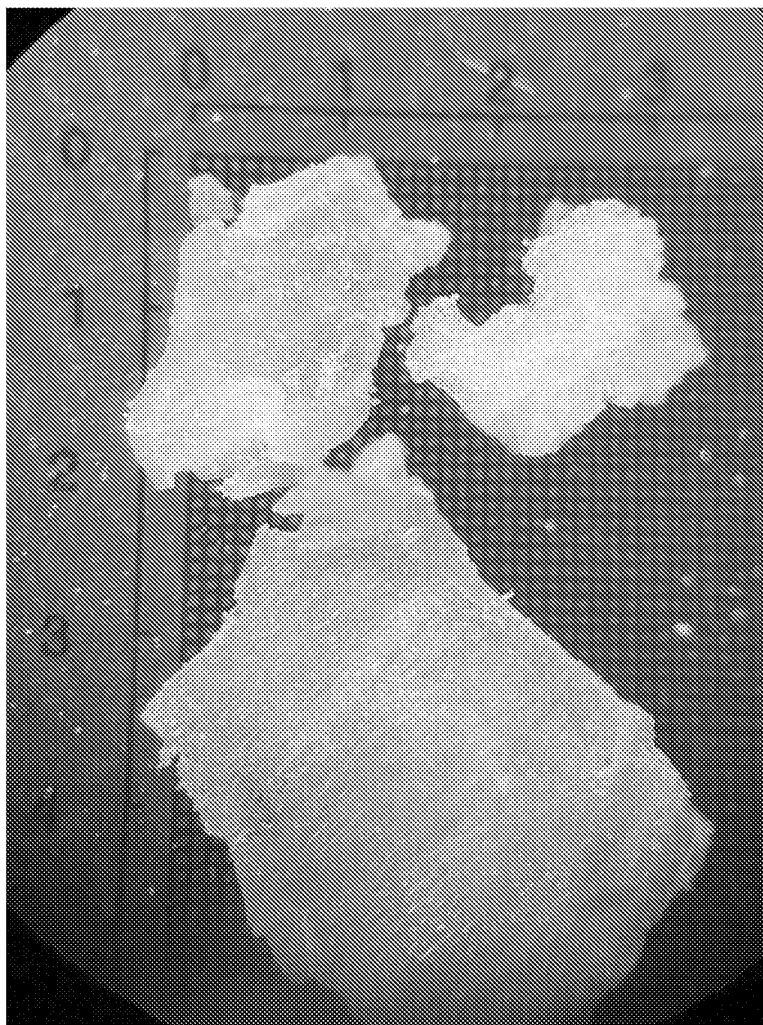


FIG. 8

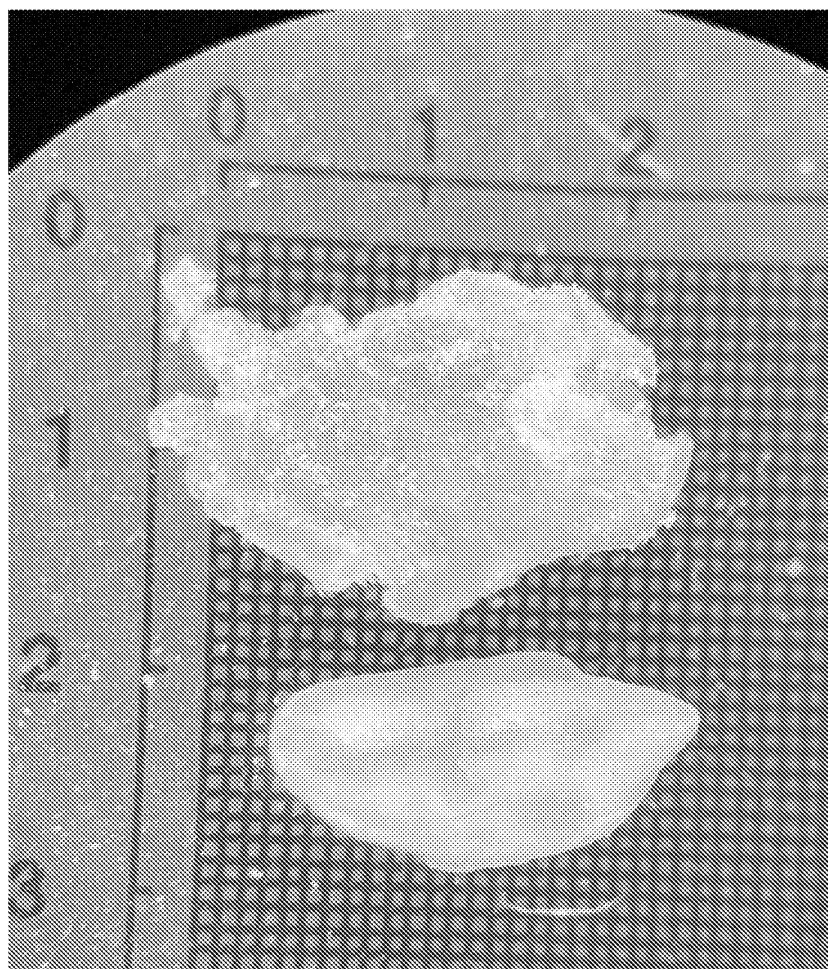


FIG. 9



FIG. 10

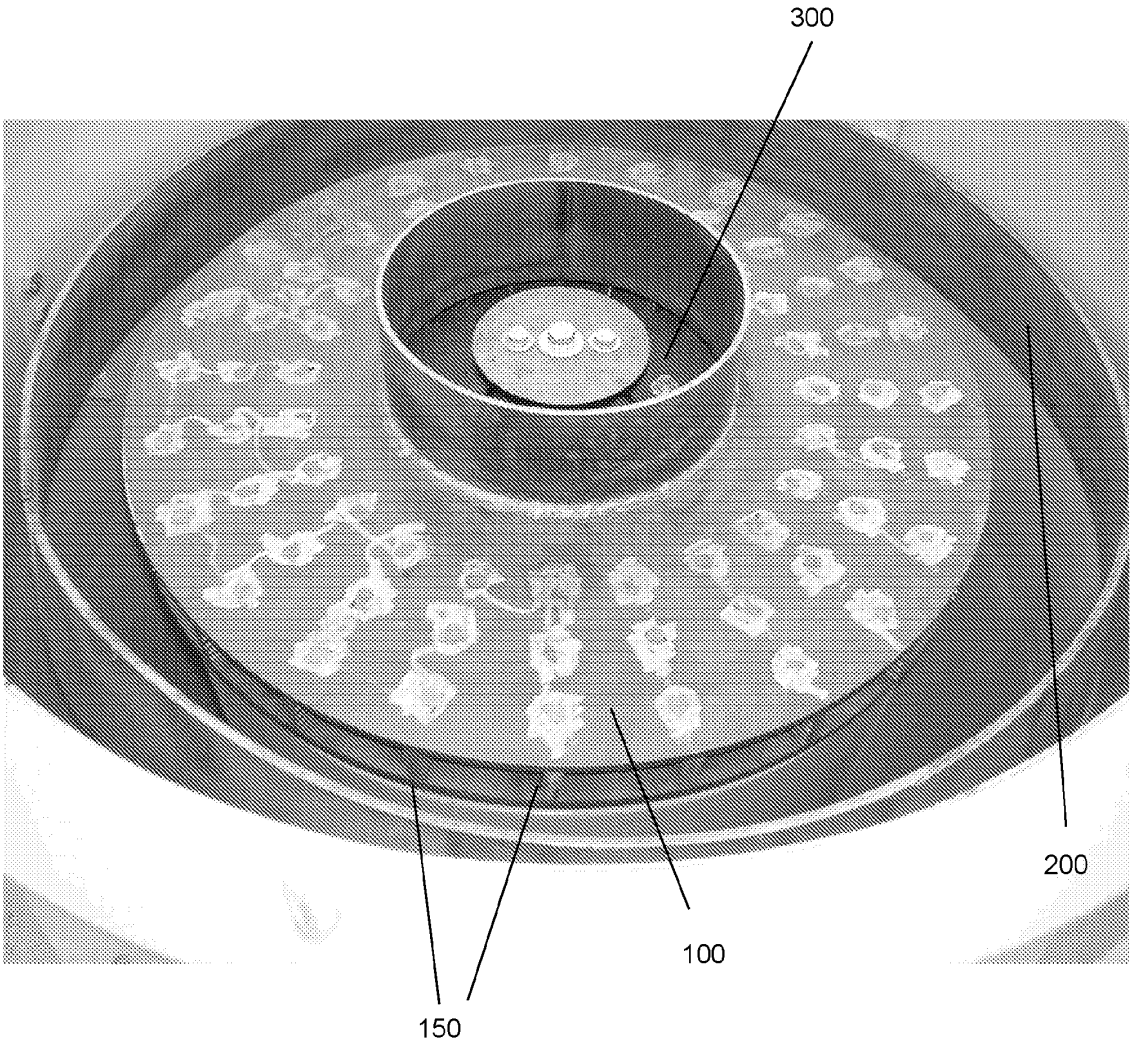


FIG. 11

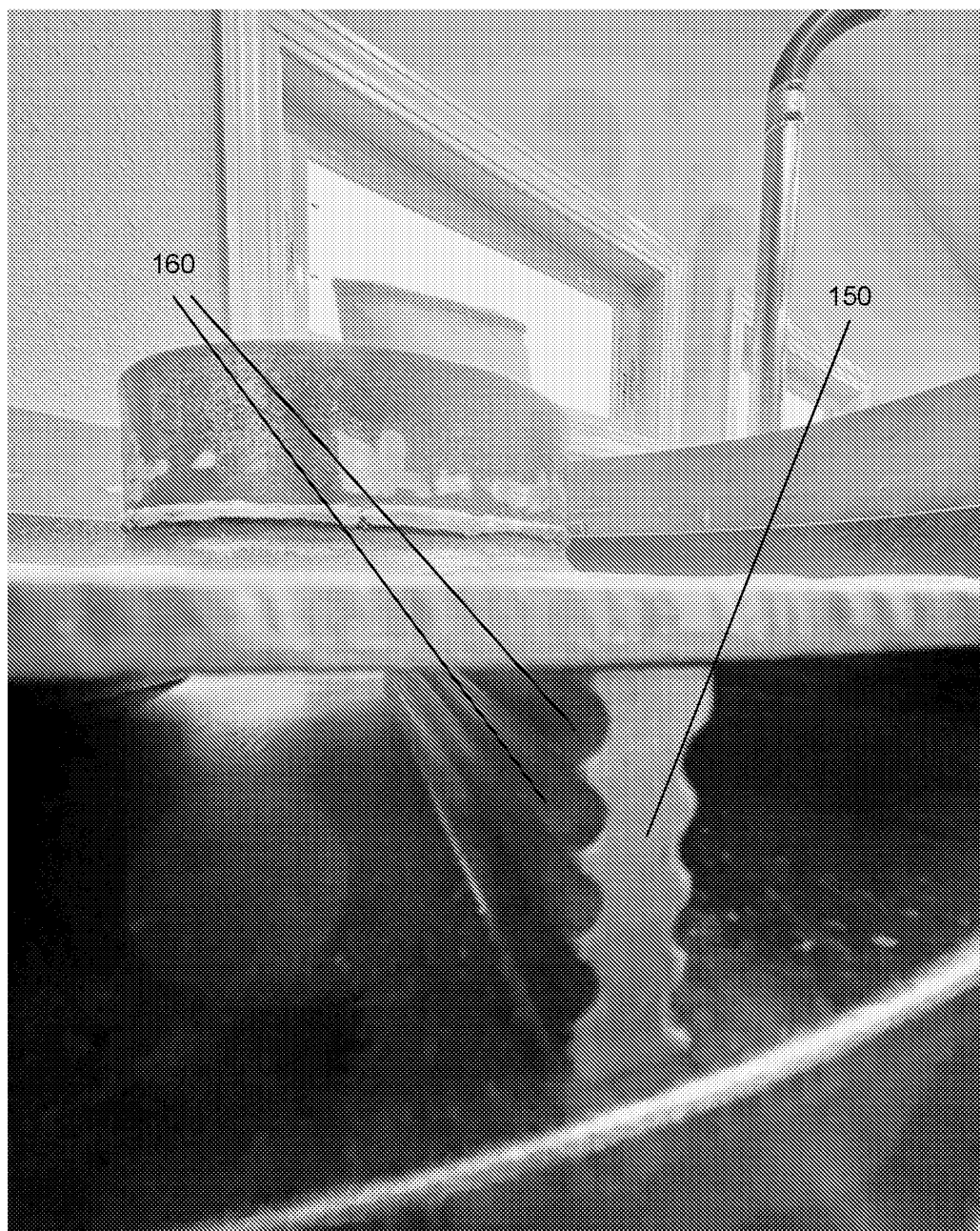


FIG. 12

Sample #	Codena Speed (Hz)	Codena Speed (RPM)	Codena Tip Speed (m/s)	Moisture (%)	#7 Overs (g)	#18 Overs (g)	#30 Overs (g)	Pan (g)	After Aspiration (g)	Brn (g)	Recovered (g)	Germ Fraction (%)
1	30.0	300	9.6	11.8	300.0	0.0	0.0	0.0	0.0	0.0	No Breakage	0.00%
2	30.0	600	19.1	11.9	300.0	0.0	0.0	0.0	0.0	0.0	No Breakage	0.00%
3	30.0	900	28.7	11.8	223.7	72.0	0.0	0.0	0.2	0.0	295.7	0.05%
4	40.0	1200	38.3	11.9	193.0	101.5	1.1	0.6	0.9	0.0	296.2	0.30%
5	40.0	1200	38.3	12.2	197.8	95.5	0.7	0.3	0.7	0.0	294.3	0.24%
6	40.0	1200	38.3	13.5	222.6	71.2	0.0	0.0	0.0	0.0	293.8	0.00%
7	40.0	1200	38.3	16.0	300.0	0.0	0.0	0.0	0.0	0.0	No Breakage	0.00%
8	50.0	1500	47.9	11.8	137.8	160.2	4.0	1.6	3.2	0.7	293.6	1.05%
9	50.0	1500	47.9	12.2	142.3	149.1	3.5	3.2	2.9	0.2	296.3	0.98%
10	50.0	1500	47.9	12.5	192.4	99.6	1.0	0.5	0.7	0.3	293.5	0.24%
11	50.0	1500	47.9	18.0	250.5	45.0	0.0	0.0	0.0	0.0	Minimal Germ	0.00%
12	60.0	1800	57.4	11.8	41.9	196.0	9.2	4.4	8.0	1.1	294.5	2.72%
13	60.0	1800	57.4	12.2	88.3	197.1	7.7	4.0	6.9	0.8	297.1	2.12%
14	60.0	1800	57.4	13.5	199.4	151.0	3.3	1.8	2.8	0.4	295.5	0.95%
27	60.0	1800	57.4	14.0	380.1	585.8	14.9	9.3	13.6	1.1	Not Scored	1.39%
28	60.0	1800	57.4	14.0	355.2	607.0	17.7	10.8	16.7	1.3	Scored	1.68%
15	60.0	1800	57.4	18.0	272.2	66.8	0.4	0.4	0.3	0.1	Minimal Germ	0.10%
16	75.0	2250	71.8	11.9	29.7	229.7	19.7	11.2	17.7	1.5	100% Broken	6.10%
17	75.0	2250	71.8	12.2	40.0	227.1	19.3	10.9	16.9	1.2	296.2	5.67%
18	75.0	2250	71.8	13.5	62.6	214.4	10.8	6.7	9.3	1.1	294.5	3.16%
19	75.0	2250	71.8	16.0	199.1	126.4	2.6	2.4	1.9	0.7	297.5	0.65%
20	90.0	2700	86.1	11.8	13.3	225.8	33.5	22.1	30.6	1.0	Pulverized	10.39%
21	90.0	2700	86.1	12.2	11.5	231.2	20.7	21.1	29.1	1.1	Pulverized	9.88%
22	90.0	2700	86.1	12.5	27.6	229.0	20.4	14.3	18.4	1.3	Pulverized	6.32%
23	90.0	2700	86.1	18.0	88.6	186.1	8.5	7.1	7.4	0.7	Pulverized	2.55%
24	100.0	3000	95.7	12.5	19.3	225.3	27.9	20.4	26.4	0.6	Pulverized	9.01%
25	100.0	3000	95.7	18.0	80.1	206.8	13.0	10.9	11.5	0.7	Pulverized	3.95%
26	110.0	3300	105.3	18.0	40.8	214.3	19.0	15.3	17.2	0.8	Pulverized	5.54%

FIG. 13

Sample #	Bran Yield	Endo Yield	Germ Yield	Bran Px	Endo Px	Germ px	Total Pixels	Bran % px	Endo % px	Germ % px
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.008%	0.009%	0.037%	127,762	132,872	575,317	835,961	15.28%	15.89%	68.822%
4	0.066%	0.021%	0.217%	311,375	97,418	1,024,509	1,433,302	21.72%	6.80%	71.479%
5	0.077%	0.015%	0.145%	533,861	106,929	1,007,692	1,648,482	32.39%	6.49%	61.128%
6	0.000%	0.000%	0.000%	137,145	73,531	995,936	1,206,612	11.37%	6.09%	82.540%
7	0.0	0.0	0.000%	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.350%	0.118%	0.622%	556,170	188,027	987,637	1,731,834	32.11%	10.86%	57.028%
9	0.352%	0.117%	0.510%	610,299	202,013	883,144	1,695,456	36.00%	11.91%	52.089%
10	0.044%	0.030%	0.164%	389,599	261,708	1,440,258	2,091,565	18.63%	12.51%	68.860%
11	0.0	0.0	0.000%	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12										
13										
14	0.256%	0.167%	0.524%	507,998	331,608	1,039,651	1,879,257	27.03%	17.65%	55.322%
27	0.24%	0.31%	0.85%	287,081	376,276	1,021,416	1,684,773	17.04%	22.33%	60.63%
28	0.16%	0.36%	1.16%	193,119	438,893	1,409,496	2,041,508	9.46%	21.50%	69.04%
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	1.040%	0.961%	1.156%	649,366	600,141	721,901	1,971,408	32.94%	30.44%	36.619%
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

FIG. 14

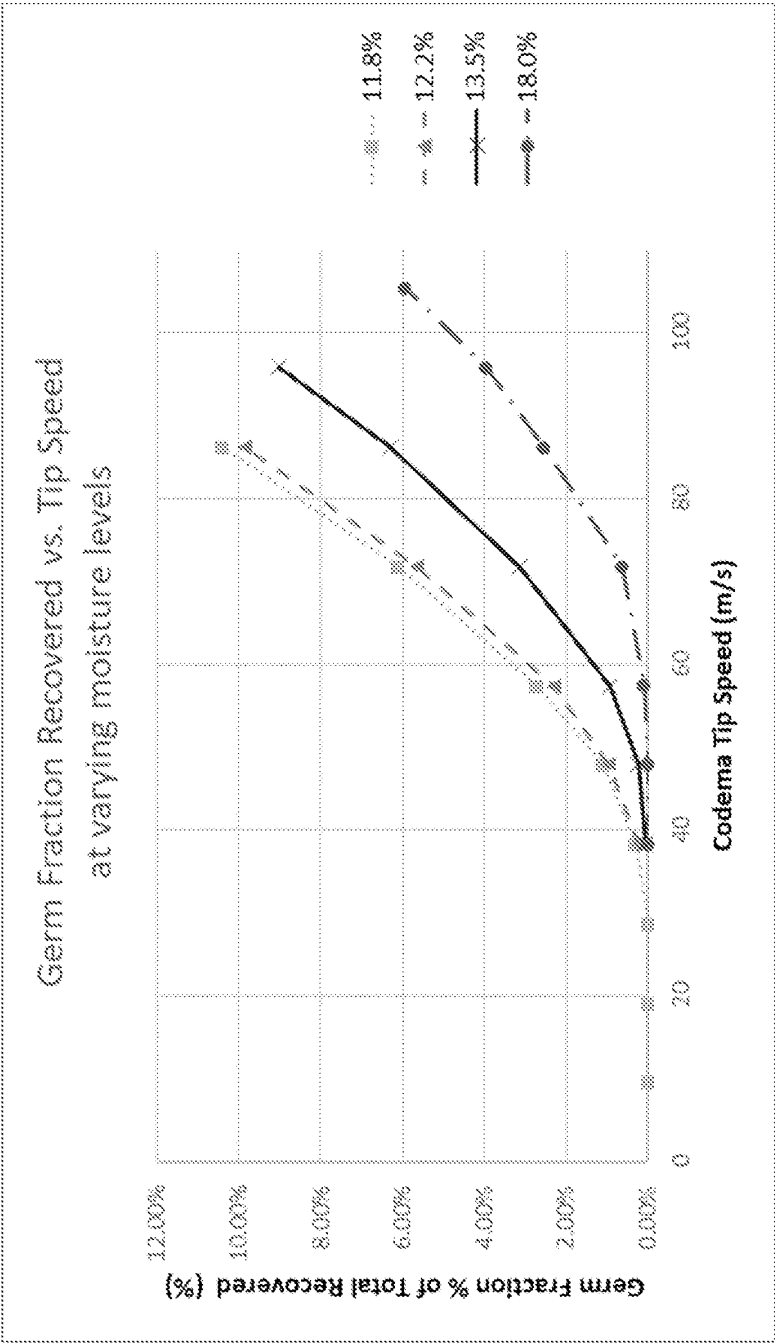


FIG. 15

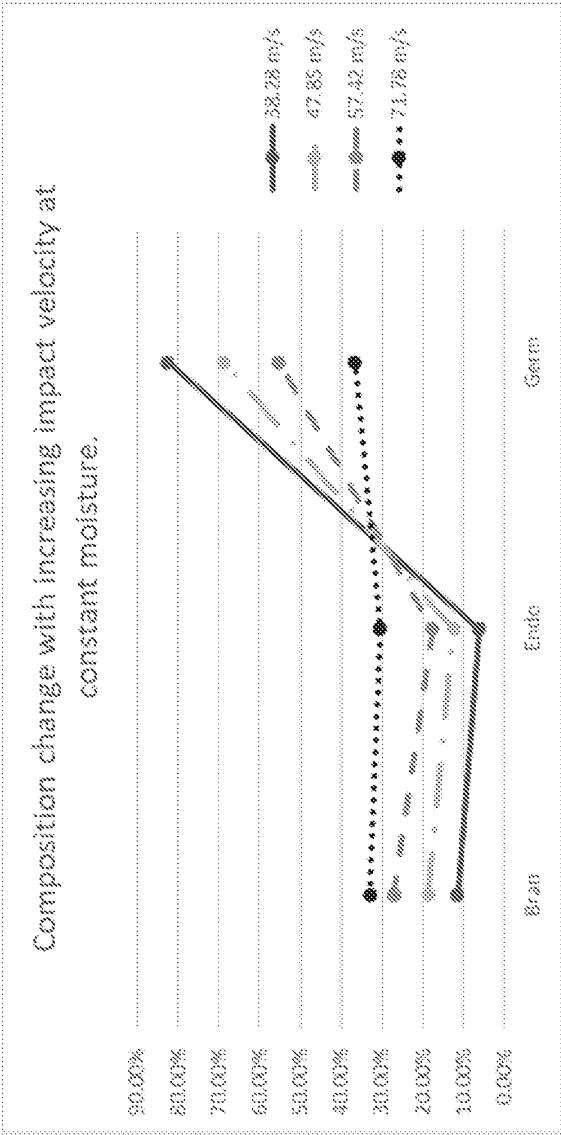


FIG. 16

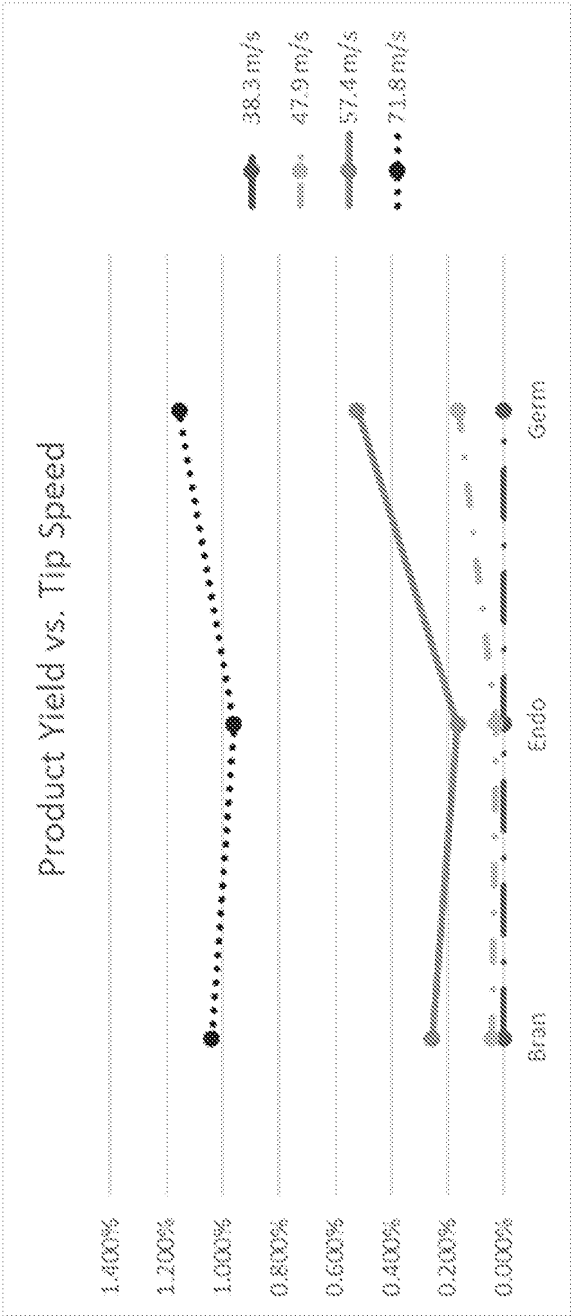


FIG. 17

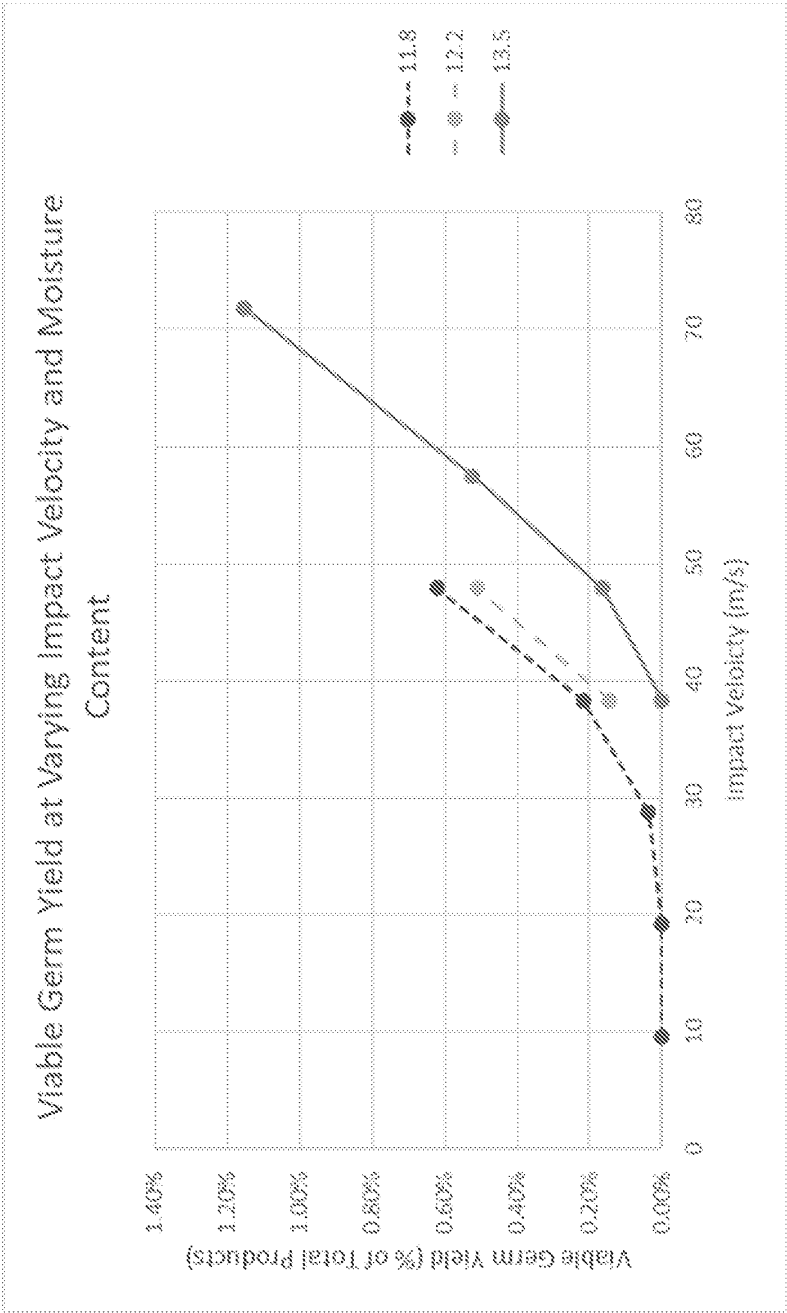
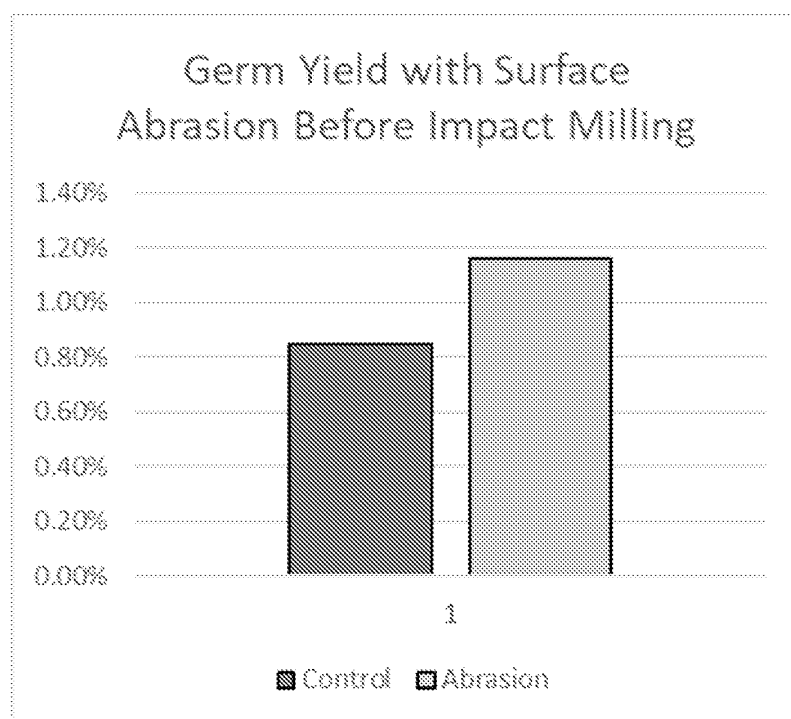


FIG. 18

**FIG. 19**

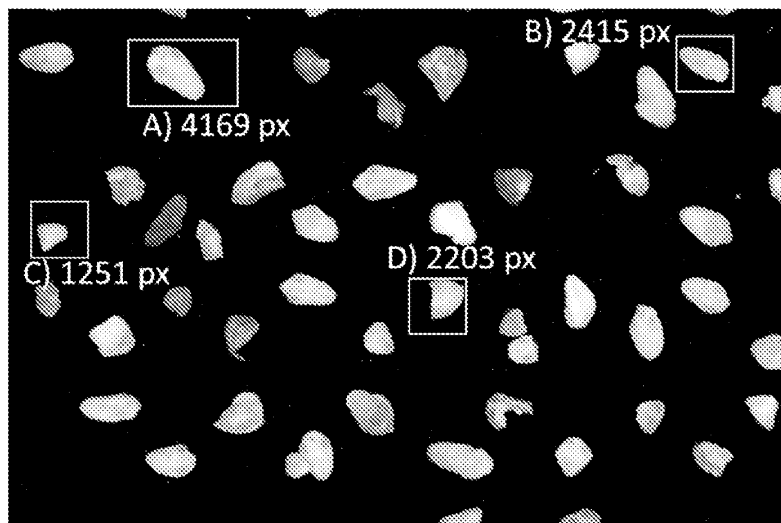


FIG. 20

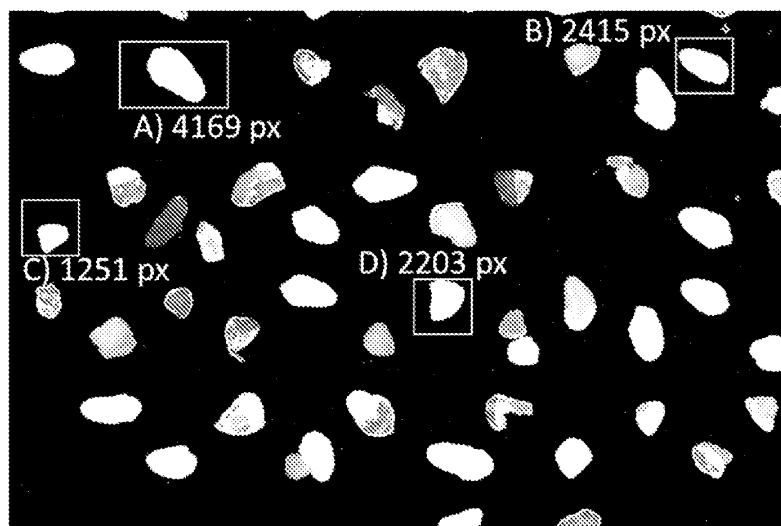


FIG. 21

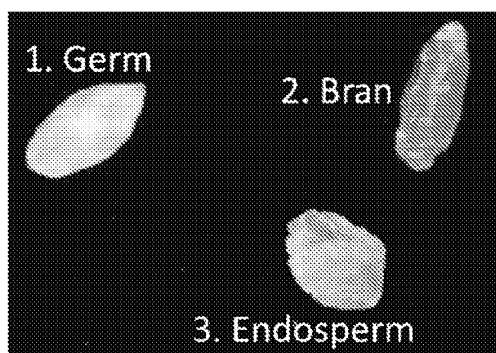


FIG. 22

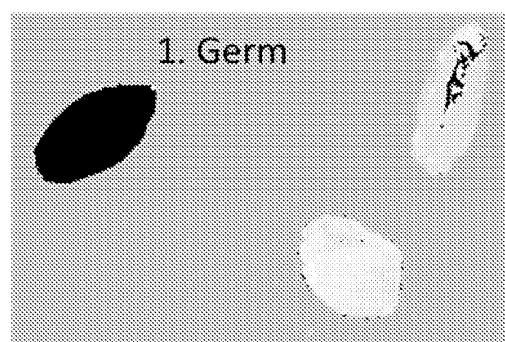


FIG. 23

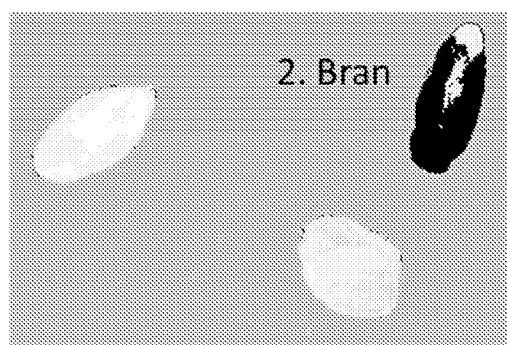


FIG. 24

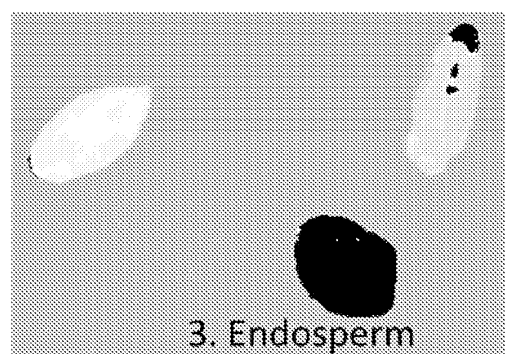
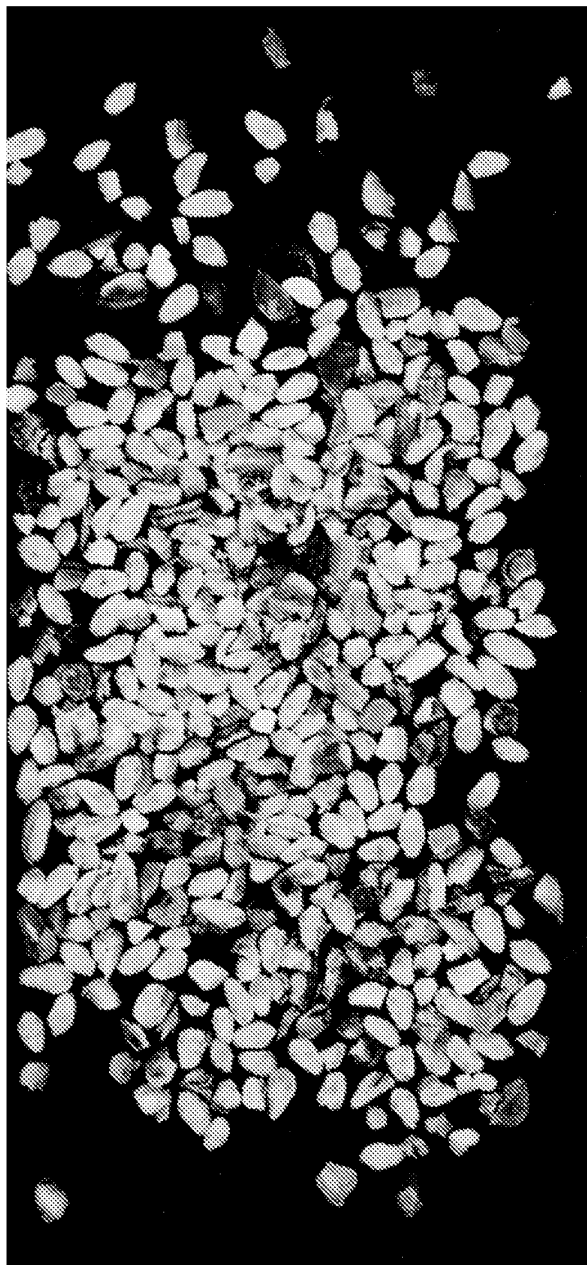


FIG. 25



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FIG. 26

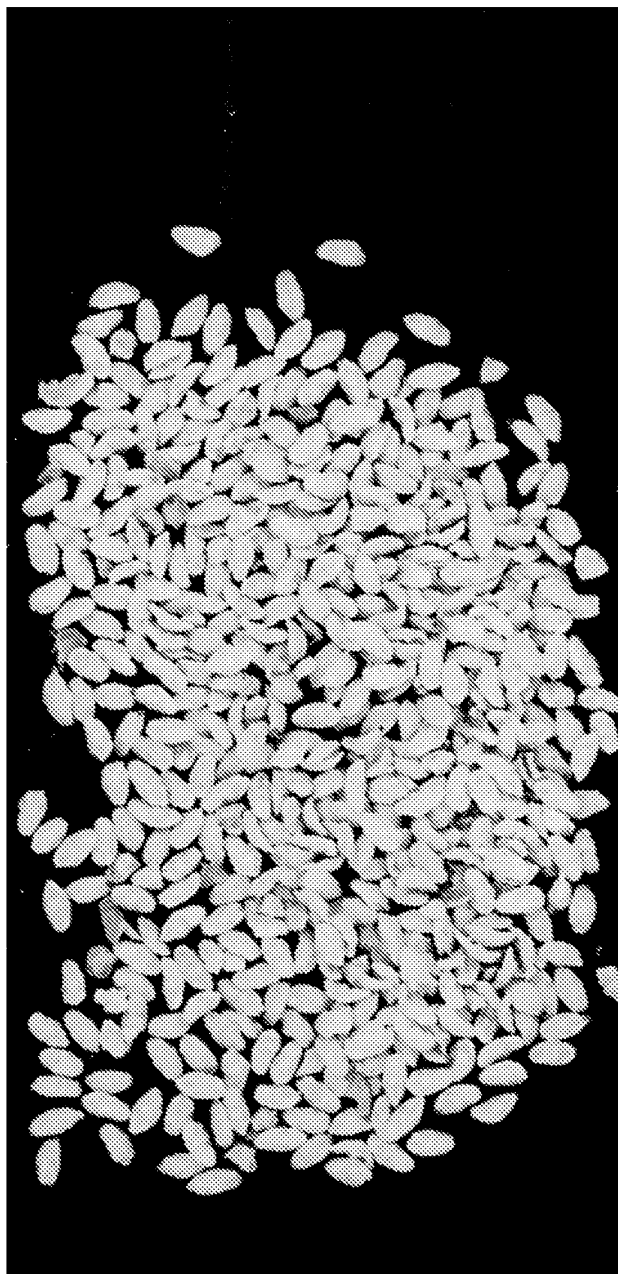


FIG. 27

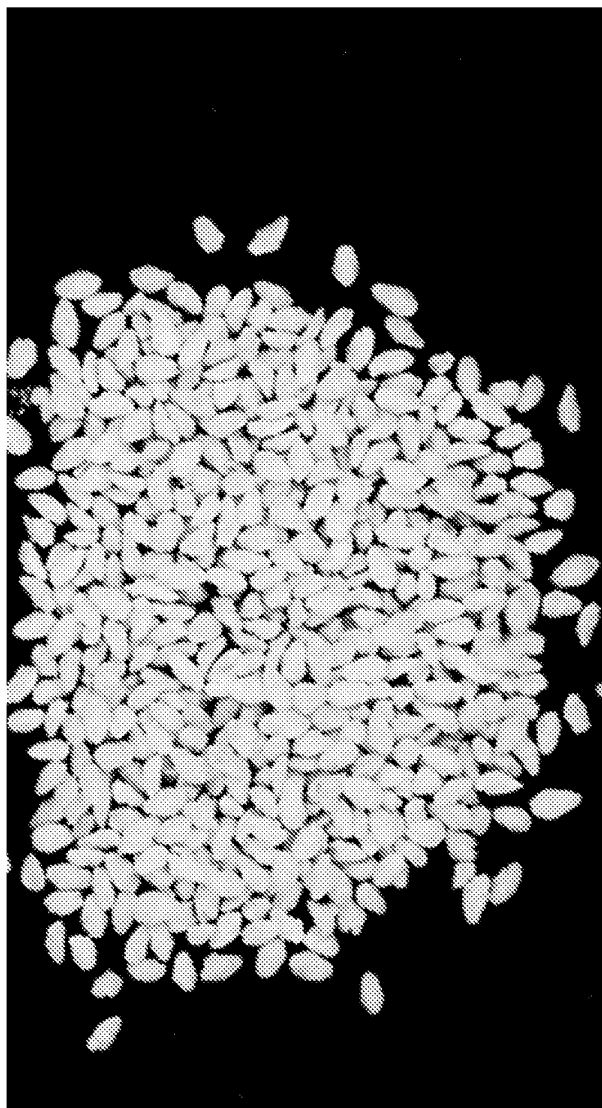


FIG. 28

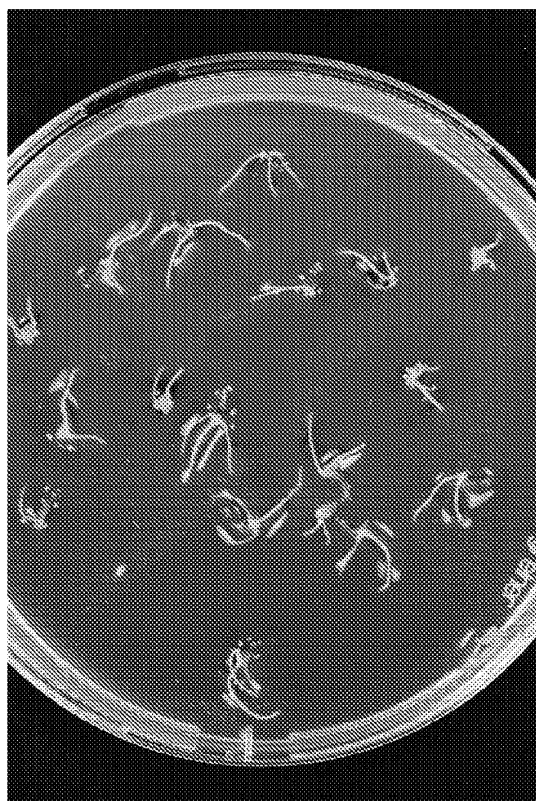
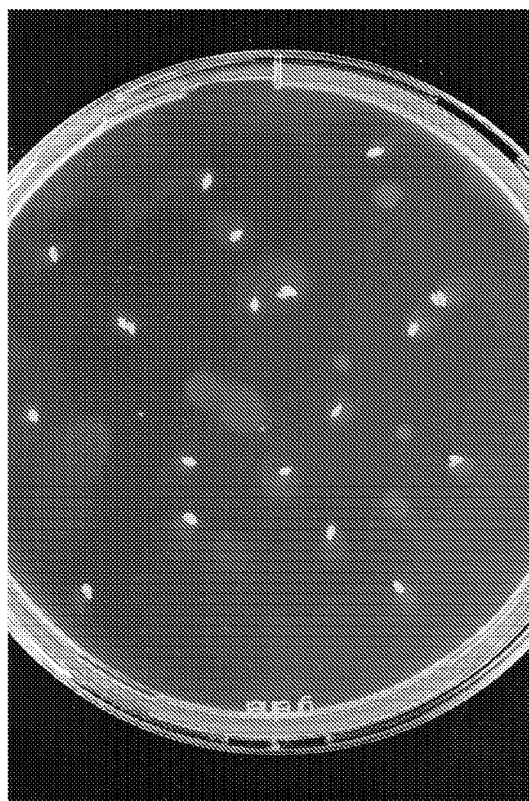


FIG. 29



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FIG. 30

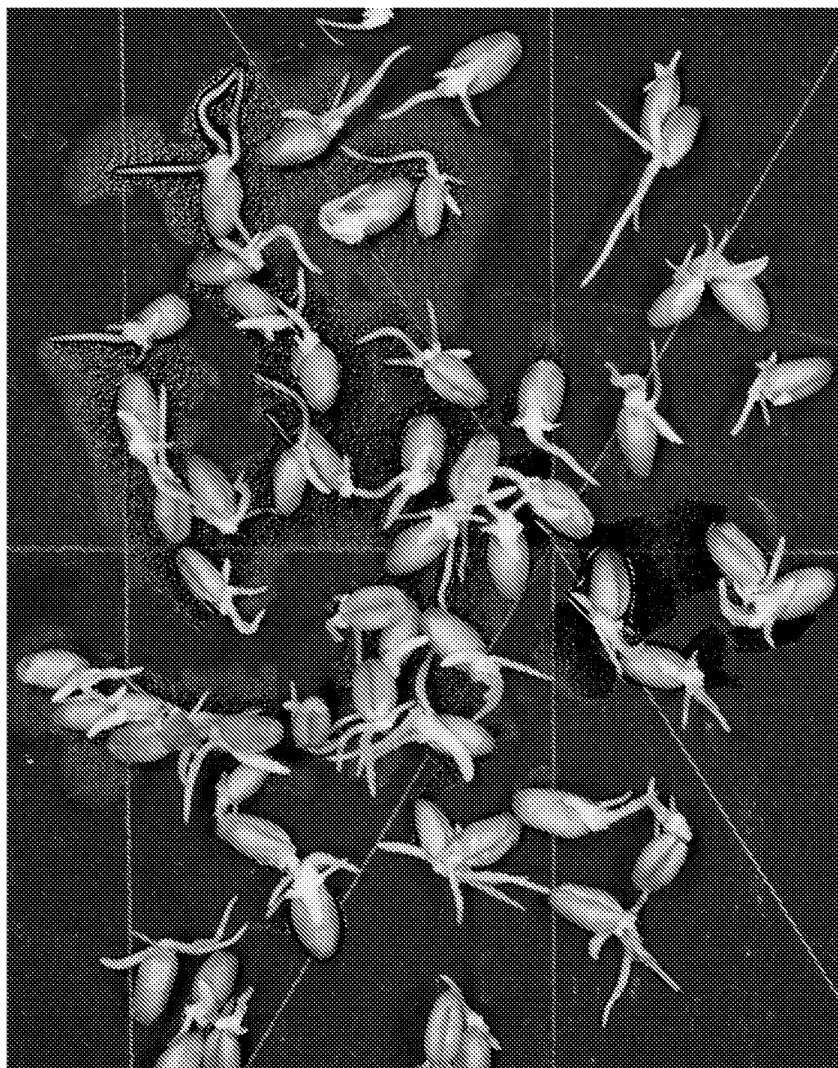
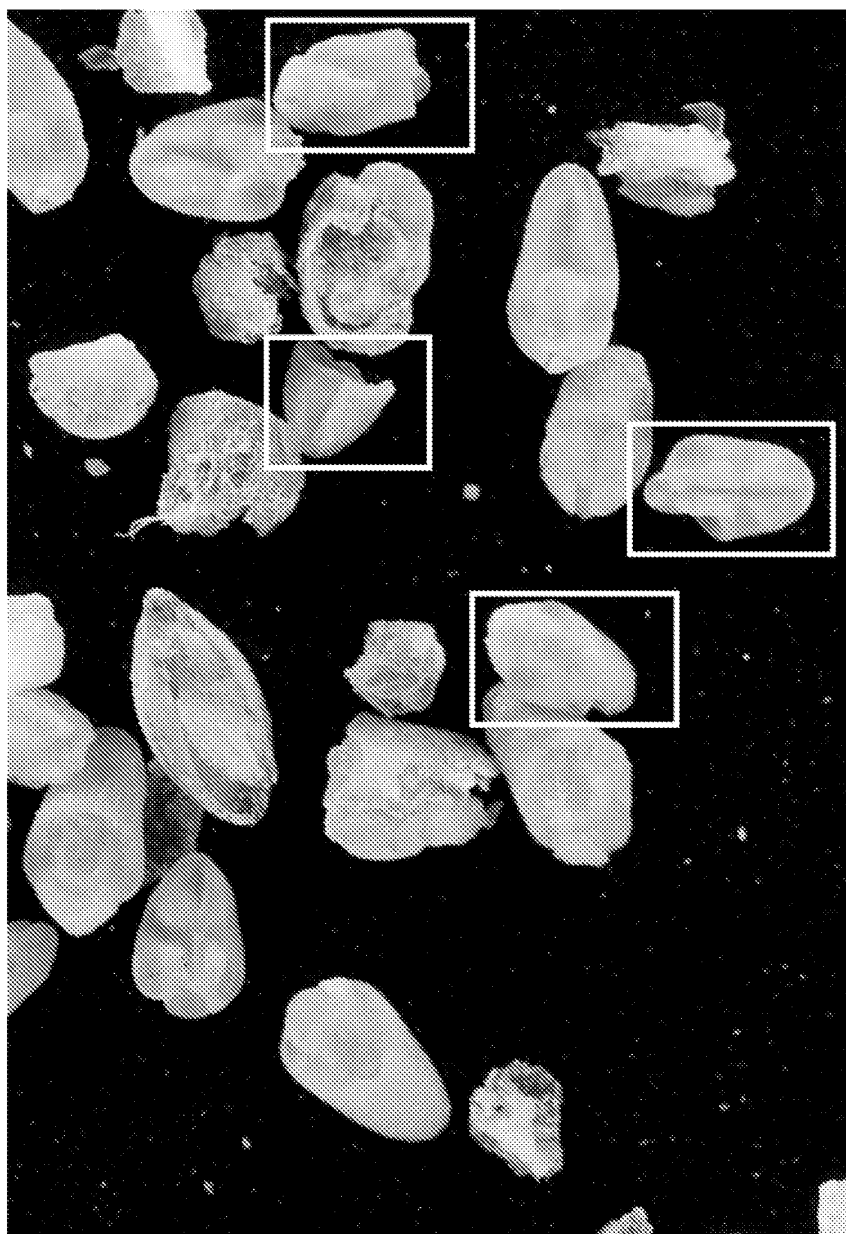
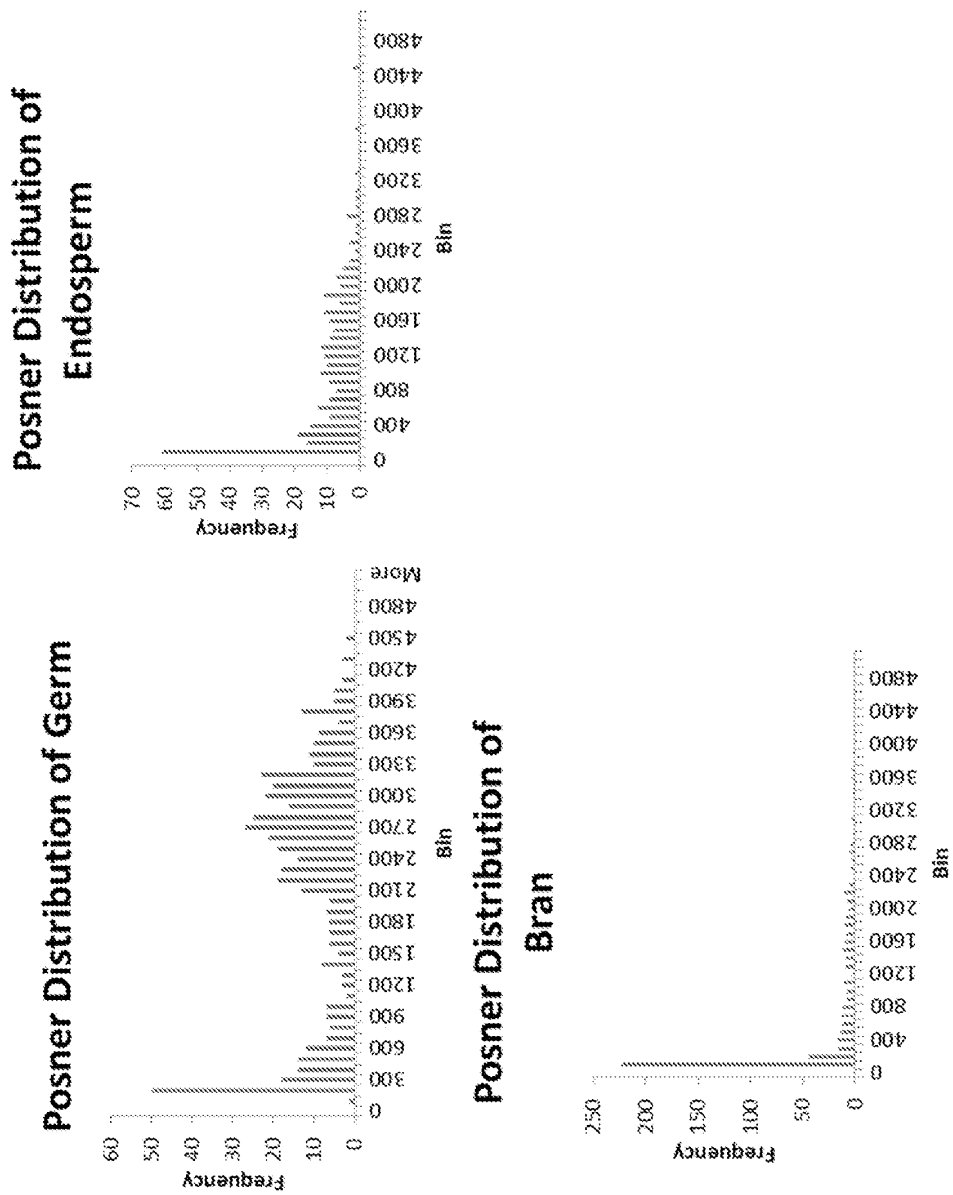


FIG. 31



--PRIOR ART--

FIG. 32



--PRIOR ART--

FIG. 33

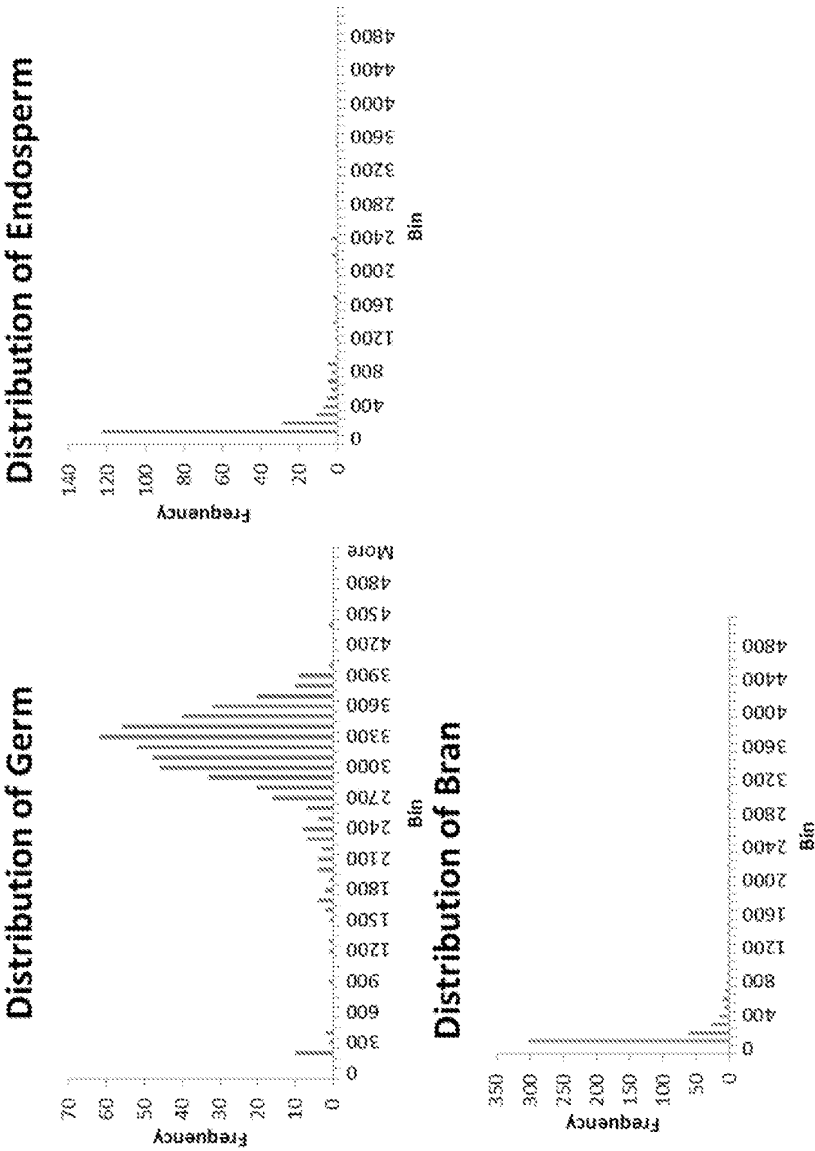


FIG. 34

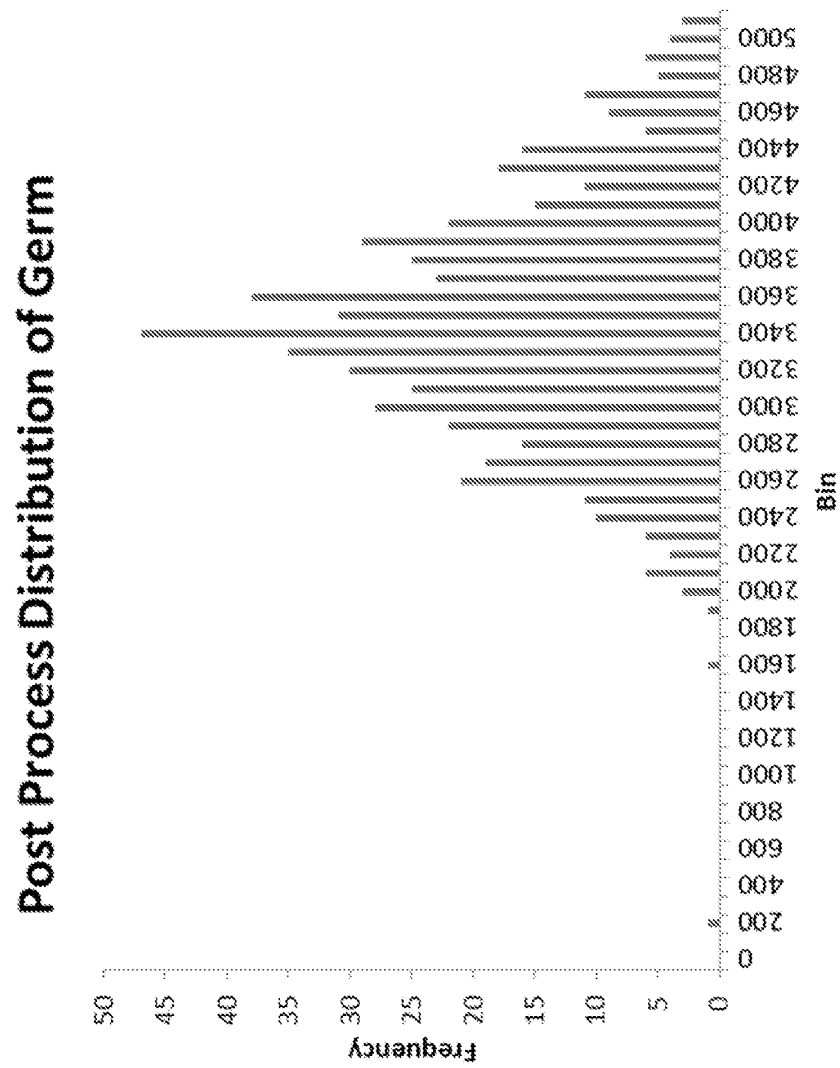


FIG. 35