

Appendix 1 : Cylindrical Extrudate in Low Speed Fitted by Log-logistic

Non-linear Regression

The following new variables are being created:

Name	Label
PRED_	Predicted Values
RESID	Residuals

Iteration	Residual SS	K	P
1	.0117205512	3.64000000	.050000000
1.1	.0083433779	3.88366401	.060658455
2	.0083433779	3.88366401	.060658455
2.1	.0081501159	4.20364048	.059644775
3	.0081501159	4.20364048	.059644775
3.1	.0081479771	4.16884021	.059736874
4	.0081479771	4.16884021	.059736874
4.1	.0081479436	4.17383146	.059744707
5	.0081479436	4.17383146	.059744707
5.1	.0081479430	4.17313688	.059744471
6	.0081479430	4.17313688	.059744471
6.1	.0081479429	4.17323393	.059744530
7	.0081479429	4.17323393	.059744530
7.1	.0081479429	4.17322035	.059744522

Run stopped after 14 model evaluations and 7 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SSSCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

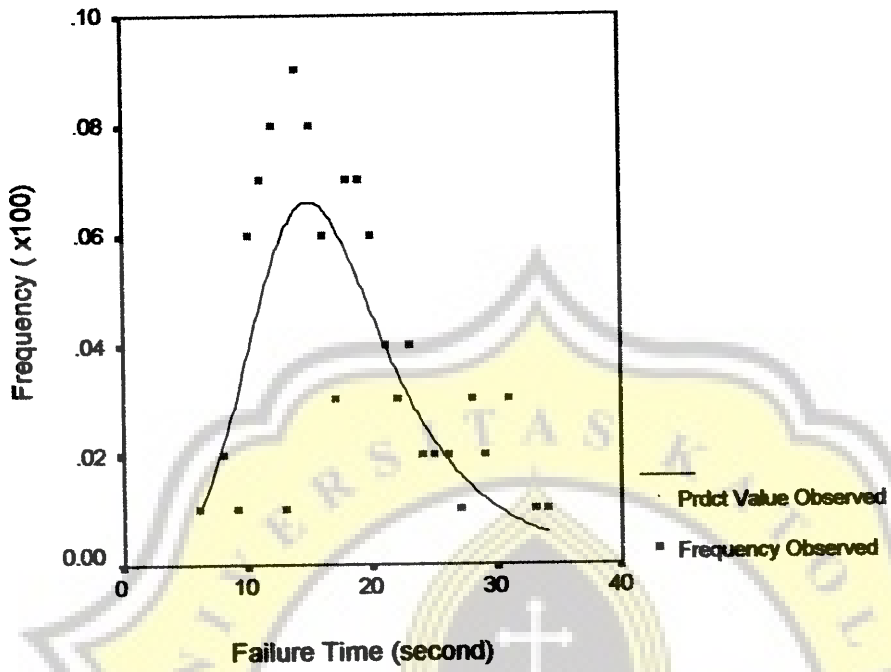
Source	DF	Sum of Squares	Mean Square
Regression	2	.04765	.02383
Residual	24	8.147943E-03	3.394976E-04
Uncorrected Total	26	.05580	
(Corrected Total)	25	.01734	

R squared = 1 - Residual SS / Corrected SS = .53007

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	4.173220346	.473150543	3.196685621	5.149755070
P	.059744522	.002848043	.053866451	.065622594

Asymptotic Correlation Matrix of the Parameter Estimates

Graph



Appendix 2 : Cylindrical Extrudate in Medium Speed Fitted by Log-logistic

Non-linear Regression

Name Label

PRED Predicted Values
RESID Residuals

Iteration	Residual SS	K	P
1	.0183761937	5.62000000	.060000000
1.1	.0181631214	5.59191116	.058471915
2	.0181631214	5.59191116	.058471915
2.1	.0181563093	5.65994179	.058596971
3	.0181563093	5.65994179	.058596971
3.1	.0181560464	5.67106665	.058571197
4	.0181560464	5.67106665	.058571197
4.1	.0181560331	5.67417533	.058570396
5	.0181560331	5.67417533	.058570396
5.1	.0181560324	5.67486053	.058569741
6	.0181560324	5.67486053	.058569741
6.1	.0181560324	5.67502484	.058569627
7	.0181560324	5.67502484	.058569627
7.1	.0181560324	5.67506314	.058569597
8	.0181560324	5.67506314	.058569597
8.1	.0181560324	5.67507212	.058569591

Run stopped after 16 model evaluations and 8 derivative evaluations.
Iterations have been stopped because the relative reduction between
successive
residual sums of squares is at most SSCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

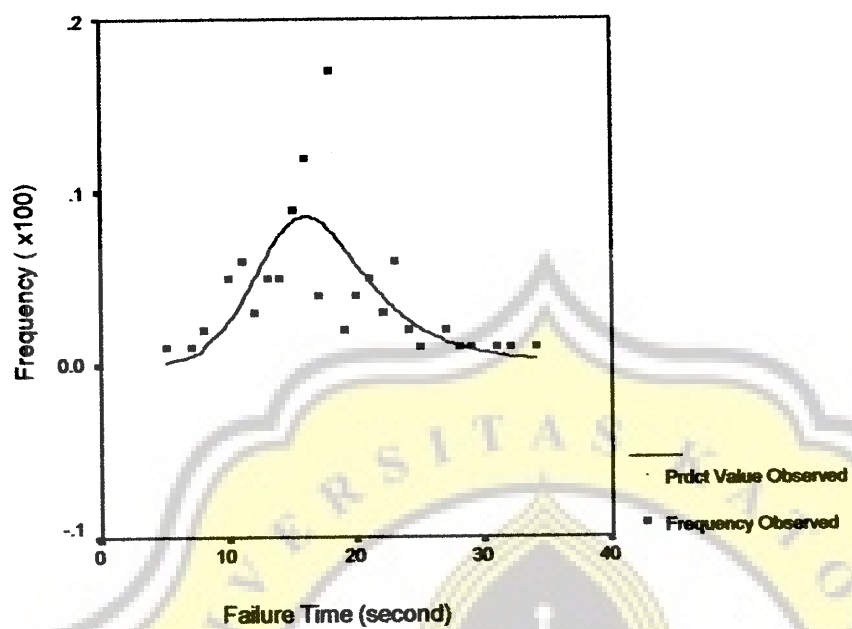
Source	DF	Sum of Squares	Mean Square
Regression	2	.05784	.02892
Residual	23	.01816	7.893927E-04
Uncorrected Total	25	.07600	
(Corrected Total)	24	.03600	

R squared = 1 - Residual SS / Corrected SS = .49567

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	5.675072124	.848973441	3.918836754	7.431307494
P	.058569591	.002754092	.052872316	.064266865

Asymptotic Correlation Matrix of the Parameter Estimates

Graph



Appendix 3 : Cylindrical Extrudate in High Speed Fitted by Log-logistic

Non-linear Regression

Name Label

PRED Predicted Values
RESID Residuals

Iteration	Residual SS	K	P
1	.0067659534	4.51000000	.060000000
1.1	.0058130050	4.62910922	.064406662
2	.0058130050	4.62910922	.064406662
2.1	.0057994542	4.70406094	.064183893
3	.0057994542	4.70406094	.064183893
3.1	.0057993769	4.71094531	.064184303
4	.0057993769	4.71094531	.064184303
4.1	.0057993766	4.71135381	.064183322
5	.0057993766	4.71135381	.064183322
5.1	.0057993766	4.71138509	.064183287
6	.0057993766	4.71138509	.064183287
6.1	.0057993766	4.71138719	.064183283

Run stopped after 12 model evaluations and 6 derivative evaluations.
Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SSSCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

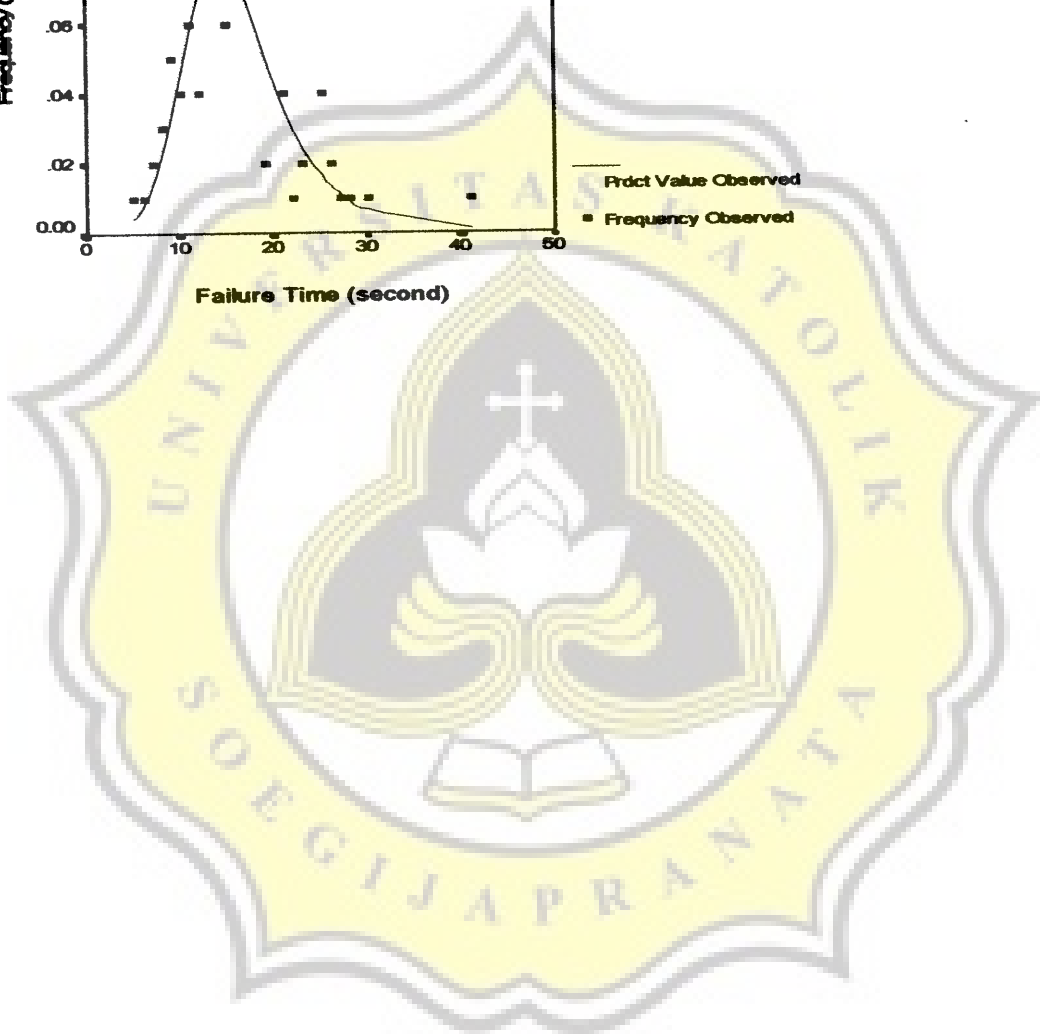
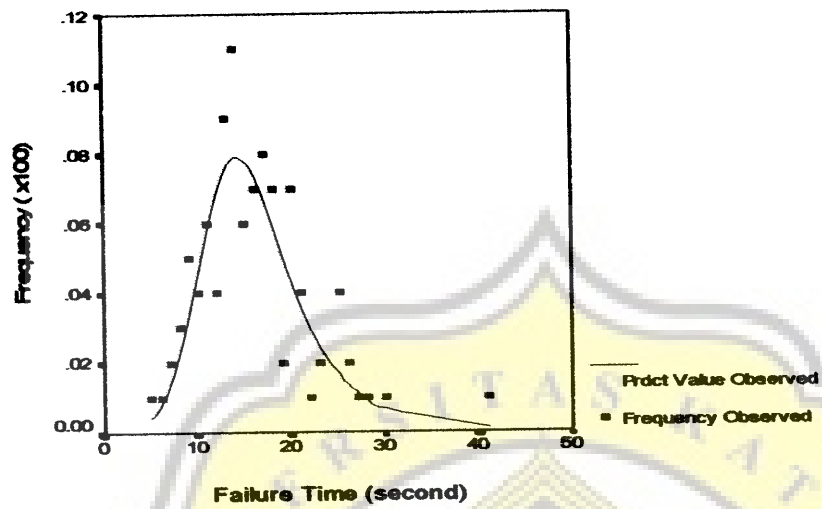
Source	DF	Sum of Squares	Mean Square
Regression	2	.05480	.02740
Residual	23	5.799377E-03	2.521468E-04
Uncorrected Total	25	.06060	
(Corrected Total)	24	.02060	

R squared = 1 - Residual SS / Corrected SS = .71848

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	4.711387194	.408321418	3.866709985	5.556064403
P	.064183283	.002132470	.059771933	.068594633

Asymptotic Correlation Matrix of the Parameter Estimates

Graph



Appendix 4 : Cylindrical Extrudate in Low Speed Fitted by Log-normal

Non-linear Regression

Name Label

PRED_ Predicted Values
RESID Residuals

Iteration	Residual SS	K	A
1	.0108432937	3.04000000	.620000000
1.1	.0107434684	3.08238017	.606439523
2	.0107434684	3.08238017	.606439523
2.1	.0107397826	3.06843053	.608283669
3	.0107397826	3.06843053	.608283669
3.1	.0107394662	3.07250999	.607758770
4	.0107394662	3.07250999	.607758770
4.1	.0107394394	3.07131924	.607904528
5	.0107394394	3.07131924	.607904528
5.1	.0107394371	3.07166705	.607861310
6	.0107394371	3.07166705	.607861310
6.1	.0107394369	3.07156549	.607873875
7	.0107394369	3.07156549	.607873875
7.1	.0107394368	3.07159515	.607870201
8	.0107394368	3.07159515	.607870201
8.1	.0107394368	3.07158649	.607871273
9	.0107394368	3.07158649	.607871273
9.1	.0107394368	3.07158902	.607870960

Run stopped after 18 model evaluations and 9 derivative evaluations.
Iterations have been stopped because the relative reduction between
successive
residual sums of squares is at most SSSCON = 1.000E-10

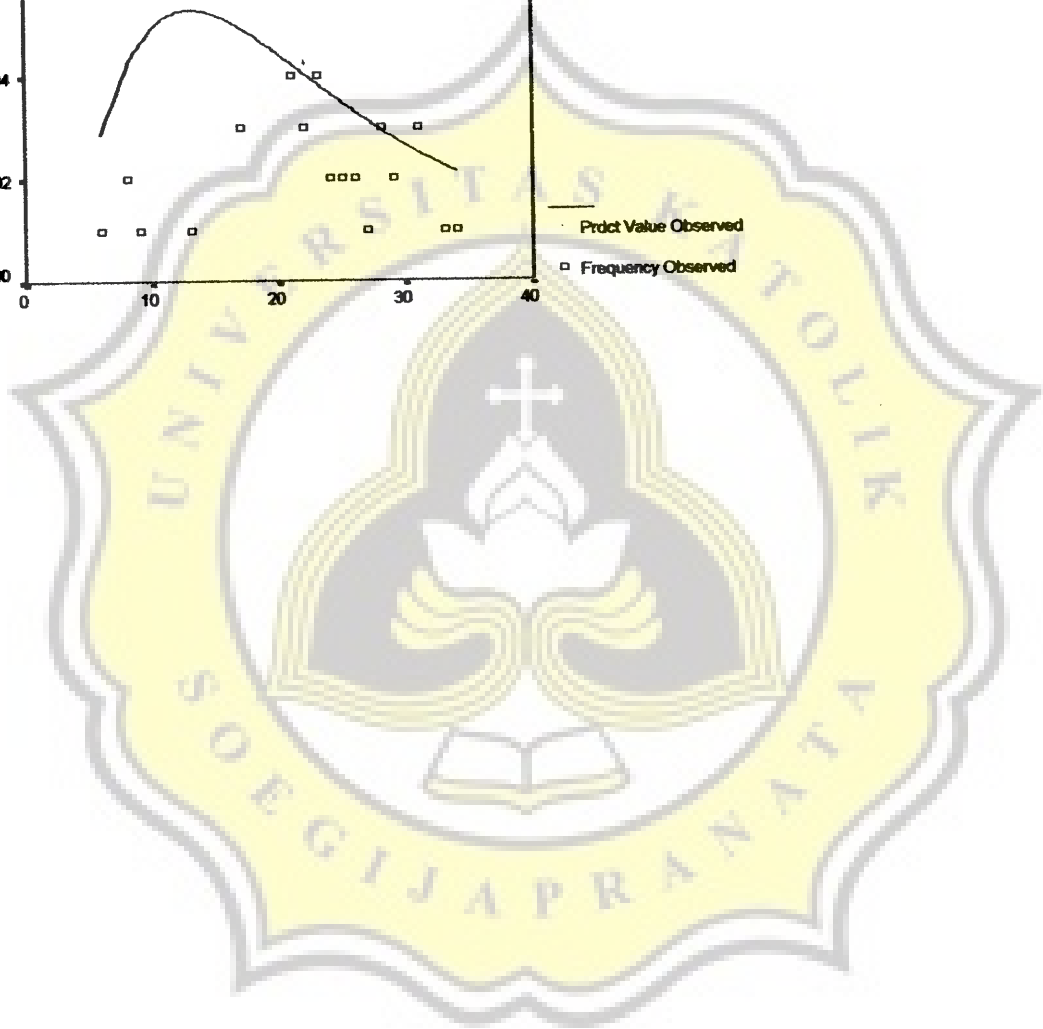
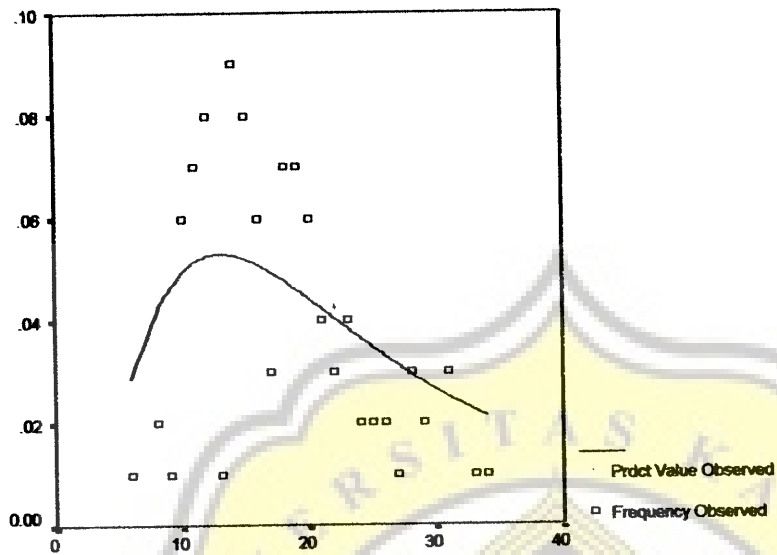
Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.04506	.02253
Residual	24	.01074	4.474765E-04
Uncorrected Total	26	.05580	
(Corrected Total)	25	.01734	

R squared = 1 - Residual SS / Corrected SS = .38060

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.071589018	.129272014	2.804784695	3.338393341
A	.607870960	.025767664	.554689116	.661052805

Graph



Appendix 5 : Cylindrical Extrudate in Medium Speed Fitted by Log-normal

Non-linear Regression

Iteration	Residual SS	K	A
1	5.833965441	3.25000000	.250000000
1.1	.9594744553	3.22980920	.327646437
2	.9594744553	3.22980920	.327646437
2.1	.1557534152	3.19073147	.419733313
3	.1557534152	3.19073147	.419733313
3.1	.0387248845	3.13320657	.511985188
4	.0387248845	3.13320657	.511985188
4.1	.0268788807	3.08934878	.573583028
5	.0268788807	3.08934878	.573583028
5.1	.0264425182	3.08717524	.590266626
6	.0264425182	3.08717524	.590266626
6.1	.0264411846	3.08789532	.591189892
7	.0264411846	3.08789532	.591189892
7.1	.0264411830	3.08759193	.591230655
8	.0264411830	3.08759193	.591230655
8.1	.0264411827	3.08772136	.591214659
9	.0264411827	3.08772136	.591214659
9.1	.0264411827	3.08766615	.591221478
10	.0264411827	3.08766615	.591221478
10.1	.0264411827	3.08768971	.591218568
11	.0264411827	3.08768971	.591218568
11.1	.0264411827	3.08767966	.591219810
12	.0264411827	3.08767966	.591219810
12.1	.0264411827	3.08768394	.591219280

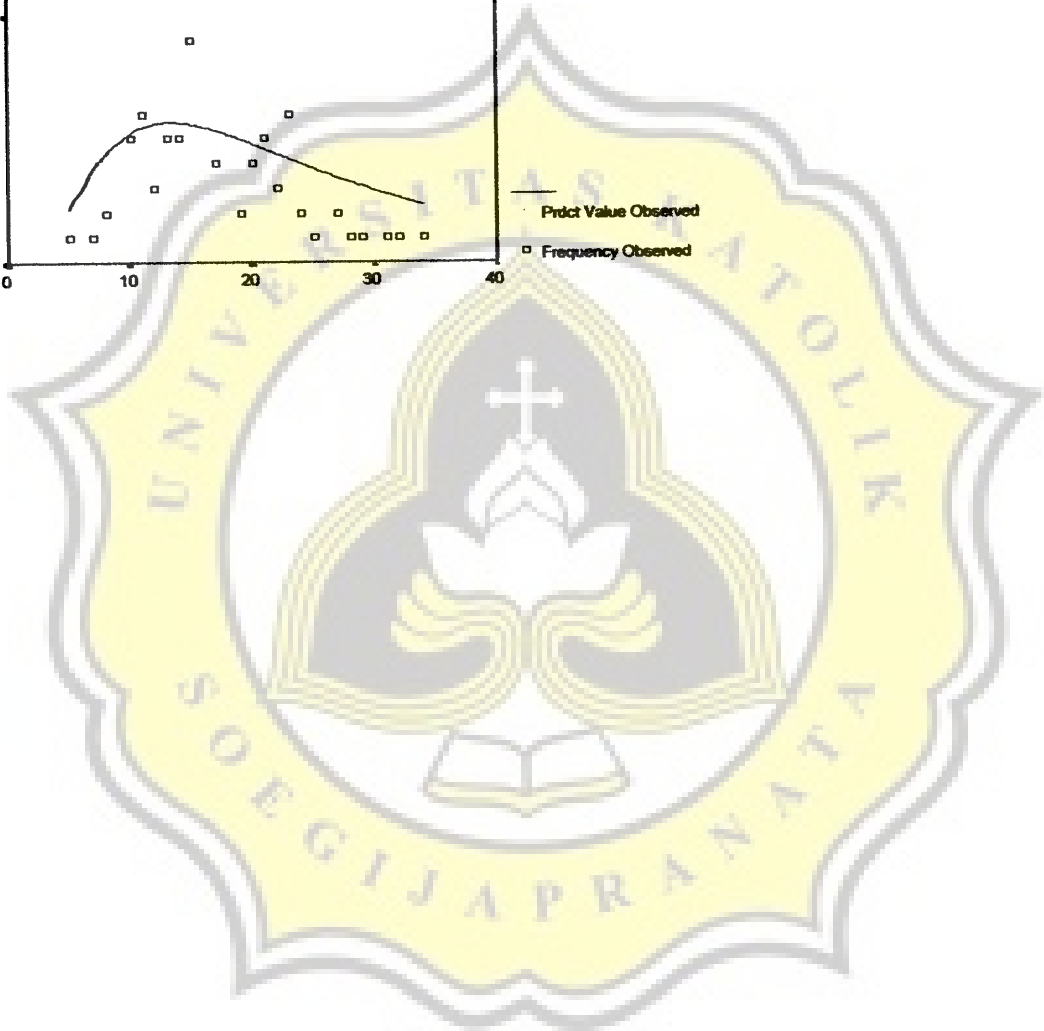
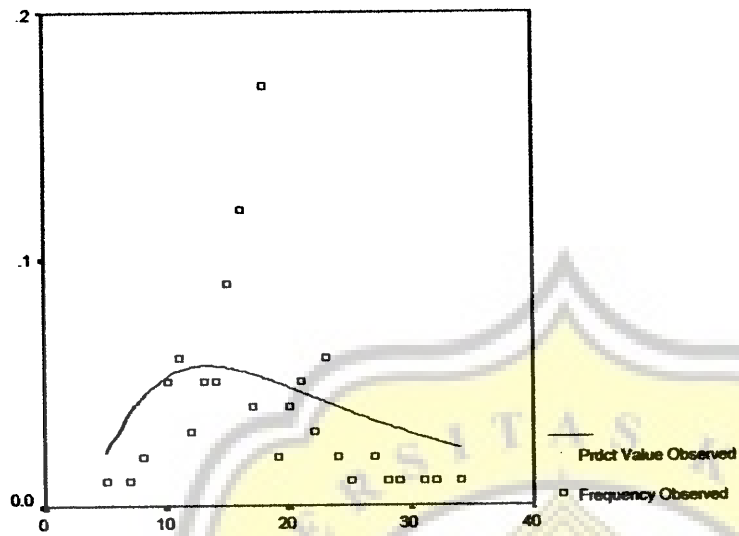
Run stopped after 24 model evaluations and 12 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most $SSCON = 1.000E-10$

Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.04956	.02478
Residual	23	.02644	1.149617E-03
Uncorrected Total	25	.07600	
(Corrected Total)	24	.03600	

R squared = $1 - \text{Residual SS} / \text{Corrected SS} = .26552$

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.087683943	.197632609	2.678849743	3.496518144
A	.591219280	.038689536	.511183878	.671254682

Graph

Appendix 6 : Cylindrical Extrudate in High Speed Fitted by Log-normal

Non-linear Regression

PRED_	Predicted Values			
RESID	Residuals			
Iteration	Residual	SS	K	A
1	.0115613080	3.02000000	.610000000	
1.1	.0114942398	3.06017874	.598464374	
2	.0114942398	3.06017874	.598464374	
2.1	.0114893531	3.04459324	.600787658	
3	.0114893531	3.04459324	.600787658	
3.1	.0114886874	3.05030606	.599927103	
4	.0114886874	3.05030606	.599927103	
4.1	.0114885996	3.04822542	.600230529	
5	.0114885996	3.04822542	.600230529	
5.1	.0114885879	3.04898485	.600118441	
6	.0114885879	3.04898485	.600118441	
6.1	.0114885863	3.04870792	.600159135	
7	.0114885863	3.04870792	.600159135	
7.1	.0114885861	3.04880893	.600144267	
8	.0114885861	3.04880893	.600144267	
8.1	.0114885861	3.04877209	.600149686	
9	.0114885861	3.04877209	.600149686	
9.1	.0114885861	3.04878553	.600147709	
10	.0114885861	3.04878553	.600147709	
10.1	.0114885861	3.04878063	.600148430	

Run stopped after 20 model evaluations and 10 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SCON = 1.000E-10

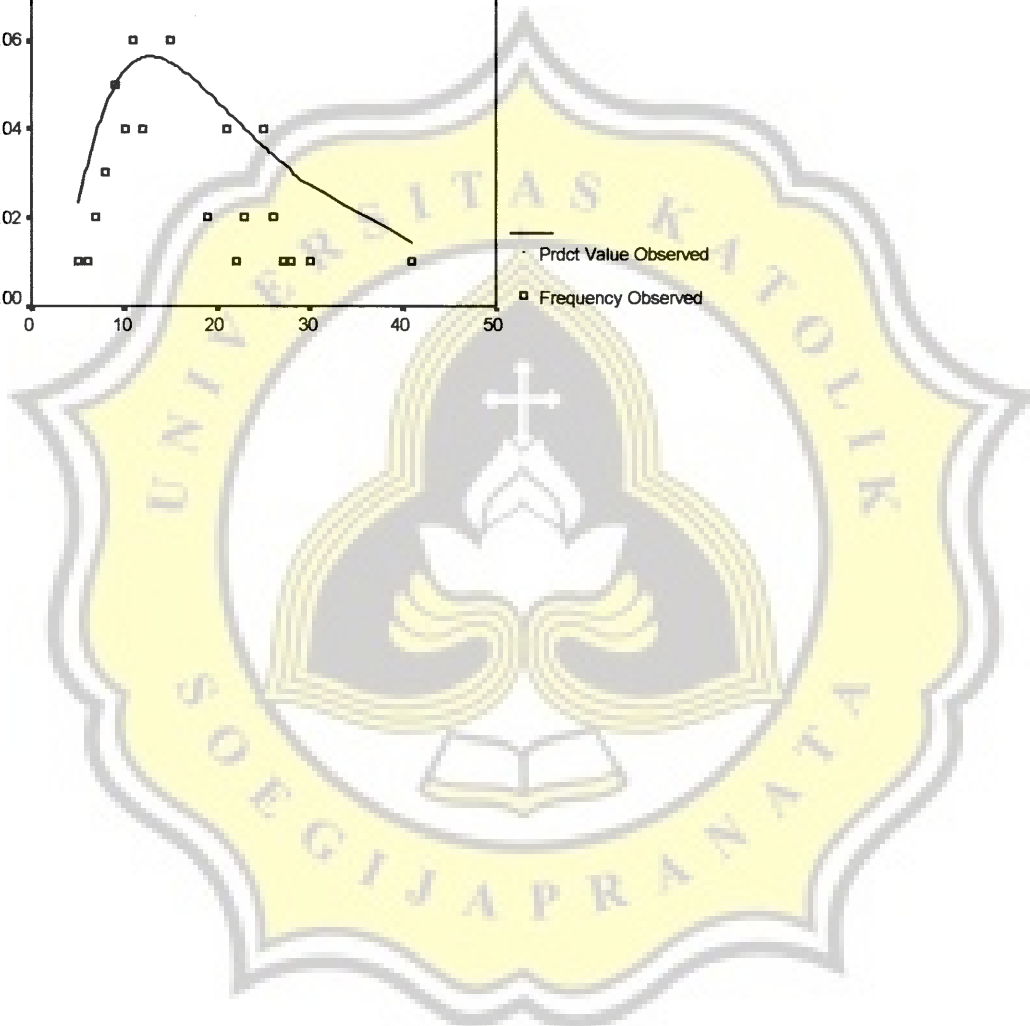
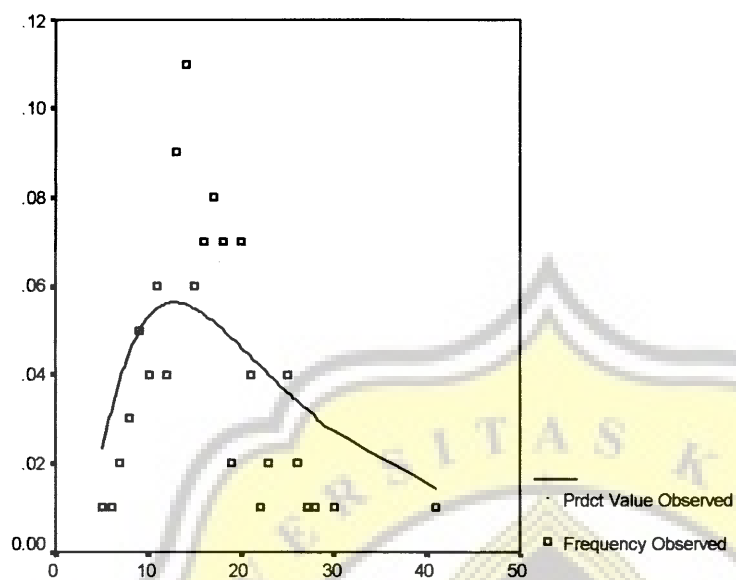
Nonlinear Regression Summary Statistics

Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.04911	.02456
Residual	23	.01149	4.995037E-04
Uncorrected Total	25	.06060	
(Corrected Total)	24	.02060	

R squared = 1 - Residual SS / Corrected SS = .44230

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.048780627	.124983629	2.790232291	3.307328963
A	.600148430	.027297281	.543679703	.656617158

Graph

Appendix 7 : Cylindrical Extrudate in Low Speed Fitted by Weibull

Non-linear Regression

Name Label

PRED_ Predicted Values
RESID_ Residuals

Iteration	Residual	SS	K	P
1	.0098146051	2.91000000	.050000000	
1.1	.0089269015	2.73249055	.053922725	
2	.0089269015	2.73249055	.053922725	
2.1	.0088095884	2.90416374	.054310436	
3	.0088095884	2.90416374	.054310436	
3.1	.0088053018	2.90660831	.054573555	
4	.0088053018	2.90660831	.054573555	
4.1	.0088050759	2.91291962	.054603312	
5	.0088050759	2.91291962	.054603312	
5.1	.0088050641	2.91347723	.054615707	
6	.0088050641	2.91347723	.054615707	
6.1	.0088050634	2.91375428	.054617797	
7	.0088050634	2.91375428	.054617797	
7.1	.0088050634	2.91379713	.054618425	
8	.0088050634	2.91379713	.054618425	
8.1	.0088050634	2.91381085	.054618553	
9	.0088050634	2.91381085	.054618553	
9.1	.0088050634	2.91381353	.054618586	

Run stopped after 18 model evaluations and 9 derivative evaluations.
Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SSSCON = 1.000E-10

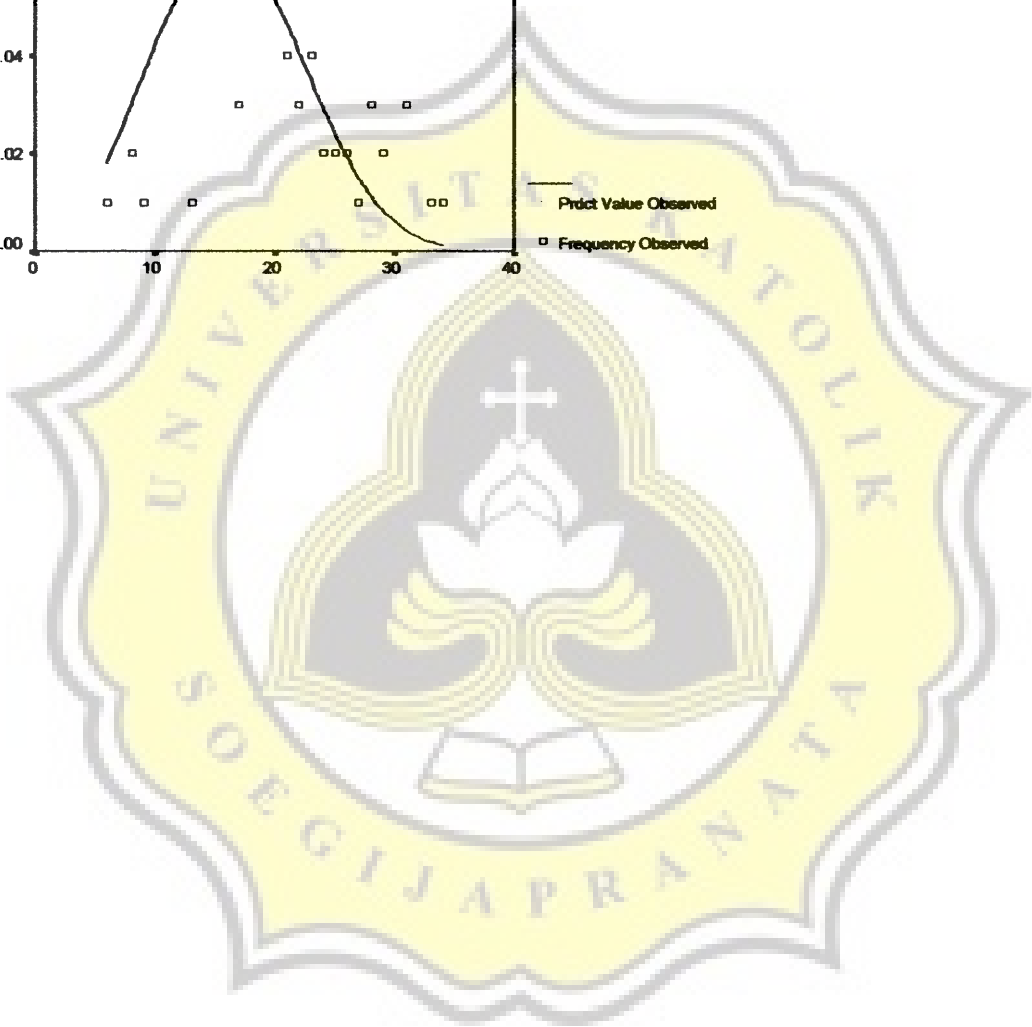
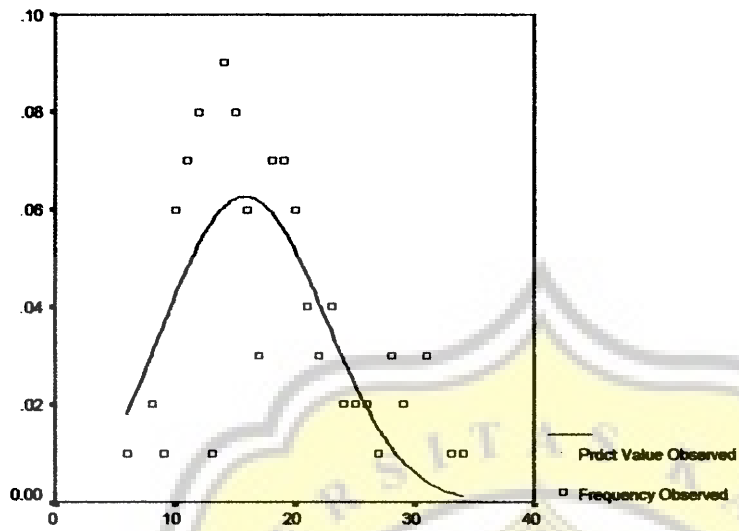
Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.04699	.02350
Residual	24	8.805063E-03	3.668776E-04
Uncorrected Total	26	.05580	
(Corrected Total)	25	.01734	

R squared = 1 - Residual SS / Corrected SS = .49217

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	2.913813532	.335288853	2.221811350	3.605815714
P	.054618586	.002622577	.049205853	.060031319

Graph



Appendix 8 : Cylindrical Extrudate in Medium Speed Fitted by Weibull

Non-linear Regression

Name Label

PRED_ Predicted Values

RESID Residuals

Iteration	Residual SS	K	P
1	.0215596164	3.45000000	.050000000
1.1	.0189124669	3.38549966	.055449667
2	.0189124669	3.38549966	.055449667
2.1	.0184331632	3.76479597	.055459276
3	.0184331632	3.76479597	.055459276
3.1	.0184069250	3.83176505	.055719685
4	.0184069250	3.83176505	.055719685
4.1	.0184052989	3.85067578	.055768679
5	.0184052989	3.85067578	.055768679
5.1	.0184051972	3.85513729	.055782696
6	.0184051972	3.85513729	.055782696
6.1	.0184051908	3.85626194	.055786199
7	.0184051908	3.85626194	.055786199
7.1	.0184051904	3.85654421	.055787084
8	.0184051904	3.85654421	.055787084
8.1	.0184051904	3.85661523	.055787307
9	.0184051904	3.85661523	.055787307
9.1	.0184051904	3.85663312	.055787363

Run stopped after 18 model evaluations and 9 derivative evaluations.
Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SCON = 1.000E-10

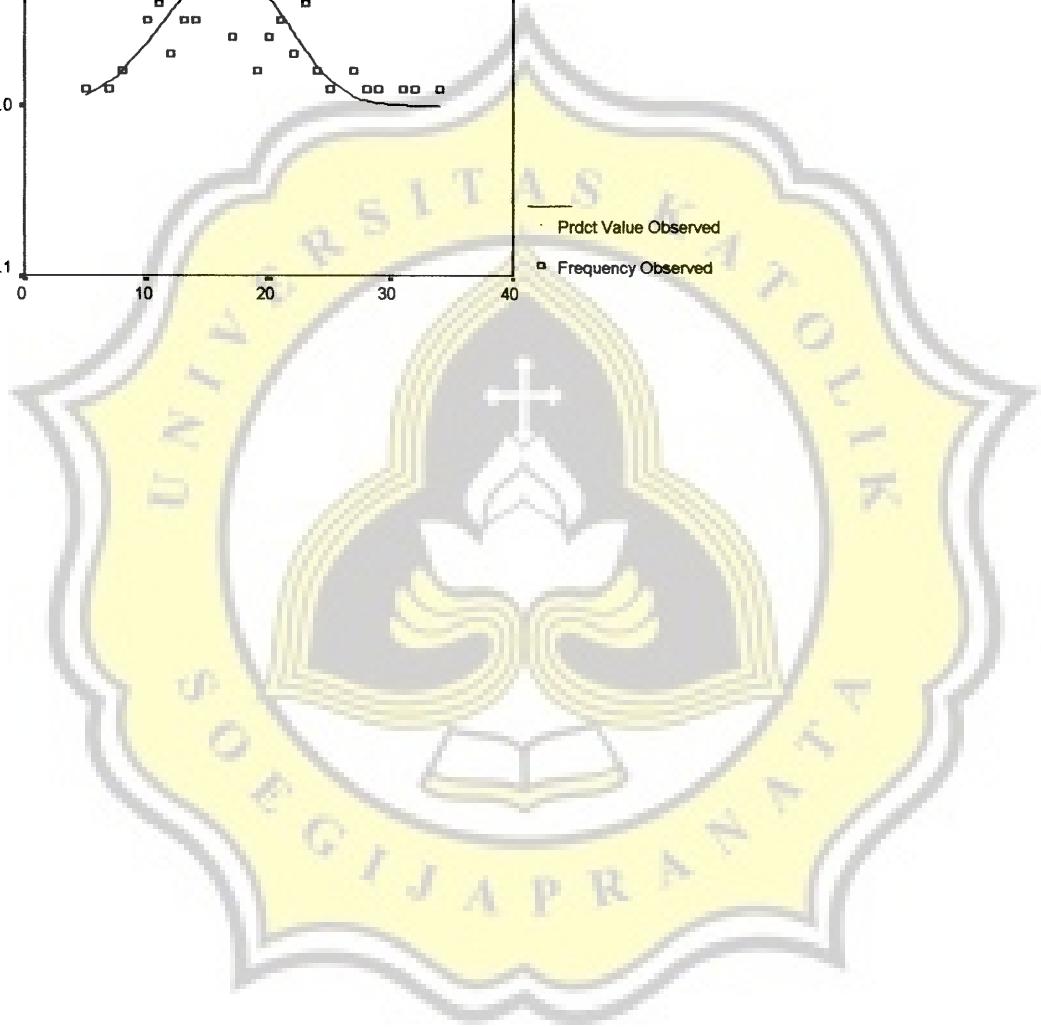
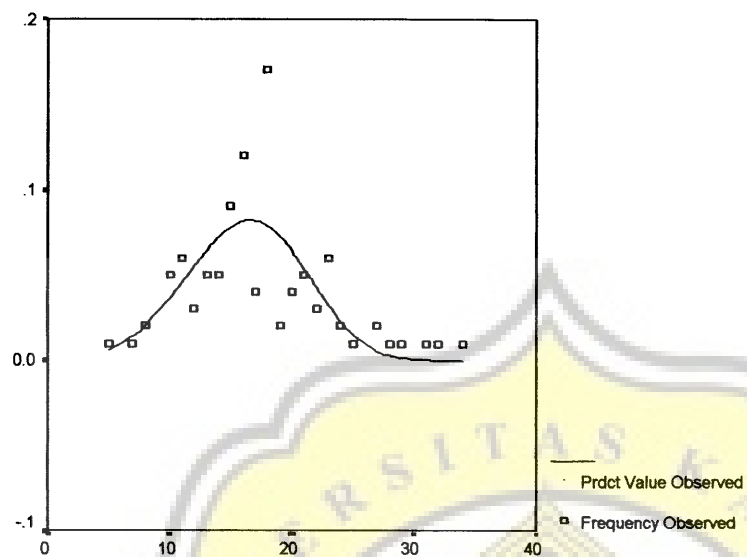
Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.05759	.02880
Residual	23	.01841	8.002257E-04
Uncorrected Total	25	.07600	
(Corrected Total)	24	.03600	

R squared = 1 - Residual SS / Corrected SS = .48874

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.856633117	.561355817	2.695380134	5.017886100
P	.055787363	.002600842	.050407112	.061167615

Graph



Appendix 9 : Cylindrical Extrudate in High Speed Fitted by Weibull

Non-linear Regression

Name Label

PRED_ Predicted Values
RESID Residuals

Iteration	Residual SS	K	P
1	.0064693902	3.29000000	.060000000
1.1	.0064592828	3.29186353	.059636845
2	.0064592828	3.29186353	.059636845
2.1	.0064587915	3.28273251	.059599285
3	.0064587915	3.28273251	.059599285
3.1	.0064587551	3.28116650	.059582524
4	.0064587551	3.28116650	.059582524
4.1	.0064587523	3.28062026	.059578522
5	.0064587523	3.28062026	.059578522
5.1	.0064587521	3.28047957	.059577334
6	.0064587521	3.28047957	.059577334
6.1	.0064587521	3.28043909	.059577010
7	.0064587521	3.28043909	.059577010
7.1	.0064587521	3.28042794	.059576919
8	.0064587521	3.28042794	.059576919
8.1	.0064587521	3.28042482	.059576894

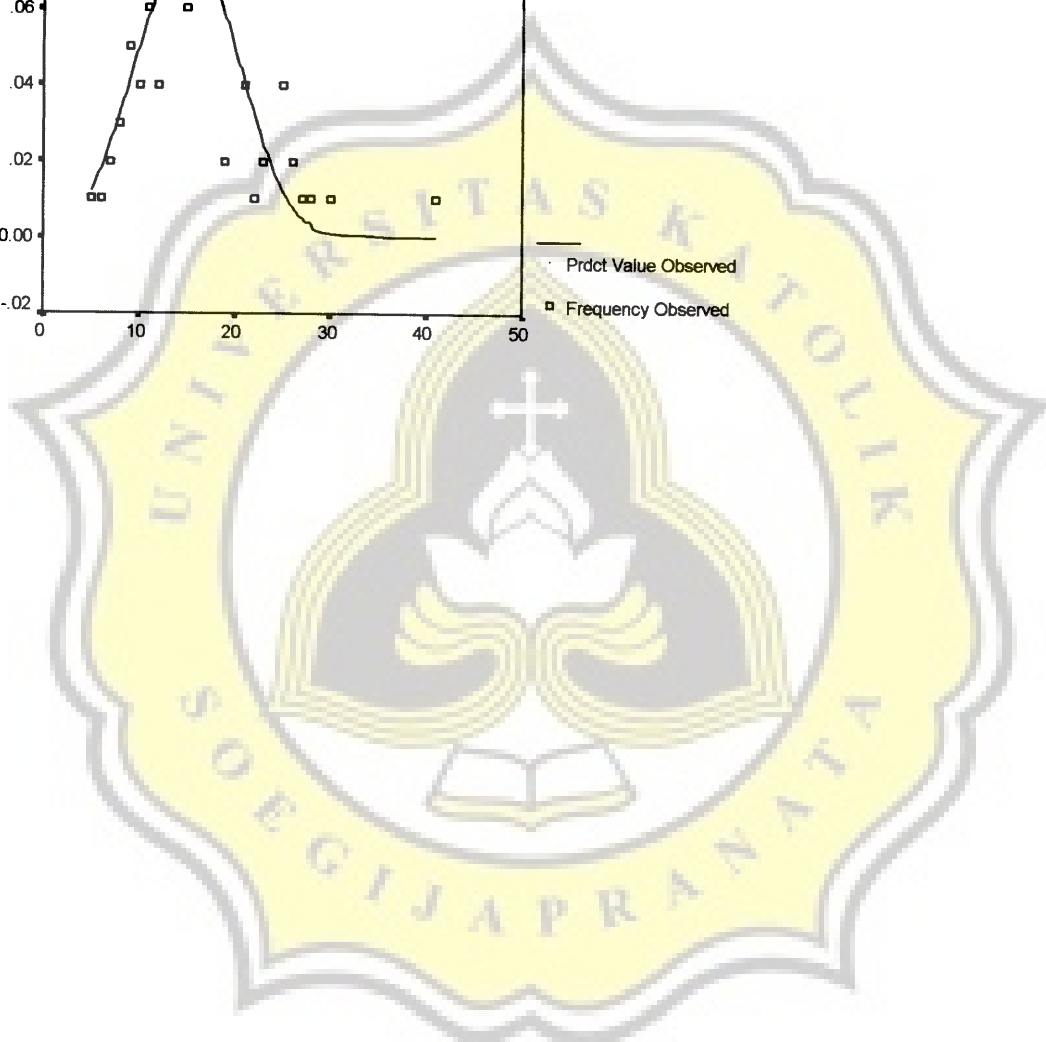
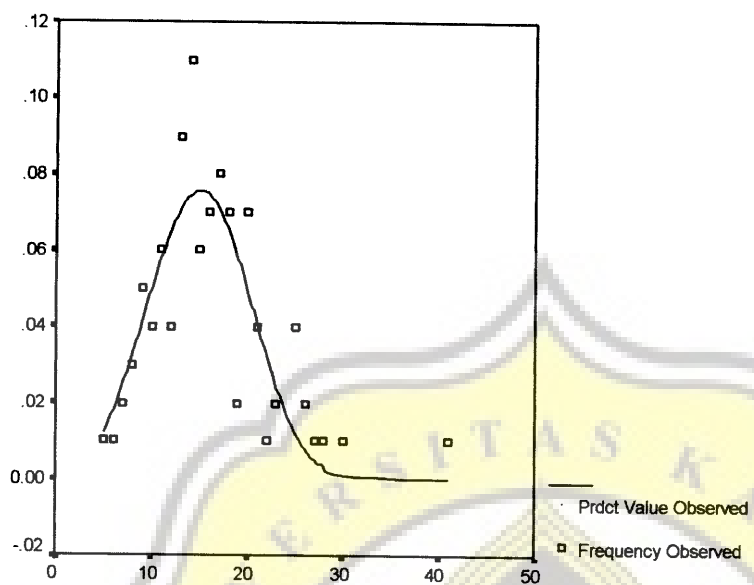
Run stopped after 16 model evaluations and 8 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SSSCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.05414	.02707
Residual	23	6.458752E-03	2.808153E-04
Uncorrected Total	25	.06060	
(Corrected Total)	24	.02060	

R squared = 1 - Residual SS / Corrected SS = .68647

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.280424821	.285086760	2.690677926	3.870171717
P	.059576894	.002015214	.055408106	.063745682

Graph

Appendix 10 : Spherical Extrudate in Low Speed Fitted by Log-normal

Non-linear Regression

Name Label

PRED_ Predicted Values
RESID Residuals

Iteration	Residual SS	K	A
1	.3082984525	2.45000000	.400000000
1.1	.0526273605	2.69194603	.529525885
2	.0526273605	2.69194603	.529525885
2.1	.0109132067	3.16591888	.658704212
3	.0109132067	3.16591888	.658704212
3.1	.0068604110	3.77934963	.642828729
4	.0068604110	3.77934963	.642828729
4.1	.0056888510	3.76786435	.580574838
5	.0056888510	3.76786435	.580574838
5.1	.0056211769	3.77096981	.590014320
6	.0056211769	3.77096981	.590014320
6.1	.0056211066	3.77096744	.590355281
7	.0056211066	3.77096744	.590355281
7.1	.0056211066	3.77096757	.590355657

Run stopped after 14 model evaluations and 7 derivative evaluations.
Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

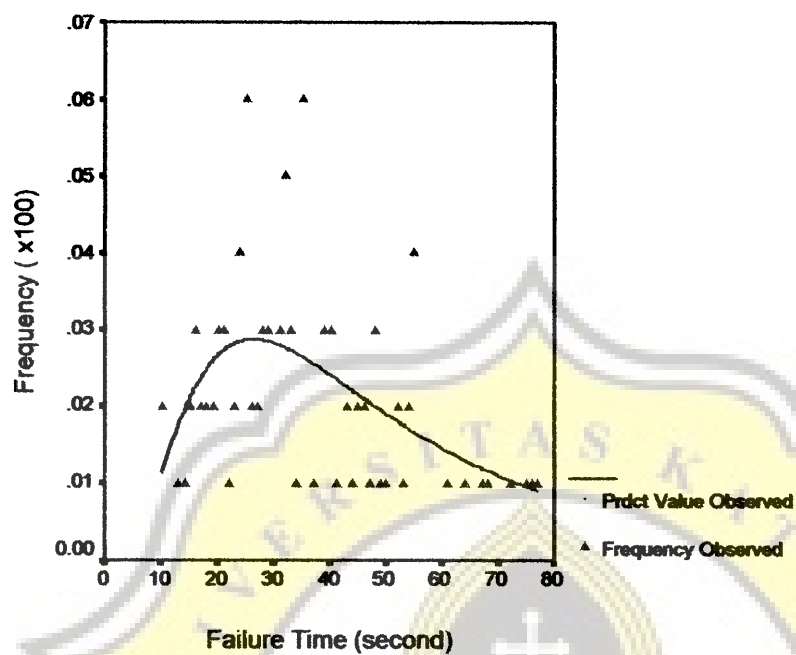
Source	DF	Sum of Squares	Mean Square
Regression	2	.02338	.01169
Residual	45	5.621107E-03	1.249135E-04
Uncorrected Total	47	.02900	
(Corrected Total)	46	7.723404E-03	

R squared = 1 - Residual SS / Corrected SS = .27220

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.770967568	.089706868	3.590288662	3.951646475
P	.590355657	.019263444	.551557089	.629154226

Asymptotic Correlation Matrix of the Parameter Estimates

Graph



Appendix 11 : Spherical Extrudate in Medium Speed Fitted by Log-normal

Non-linear Regression

Name	Label
PRED_	Predicted Values
RESID	Residuals

Iteration	Residual SS	K	A
1	.0073275869	3.11000000	.650000000
1.1	.0070410199	3.17711038	.623350480
2	.0070410199	3.17711038	.623350480
2.1	.0070362870	3.16258919	.625949990
3	.0070362870	3.16258919	.625949990
3.1	.0070362083	3.16454774	.625675295
4	.0070362083	3.16454774	.625675295
4.1	.0070362068	3.16427655	.625710068
5	.0070362068	3.16427655	.625710068
5.1	.0070362068	3.16431407	.625705190
6	.0070362068	3.16431407	.625705190
6.1	.0070362068	3.16430887	.625705864

Run stopped after 12 model evaluations and 6 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SSSCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

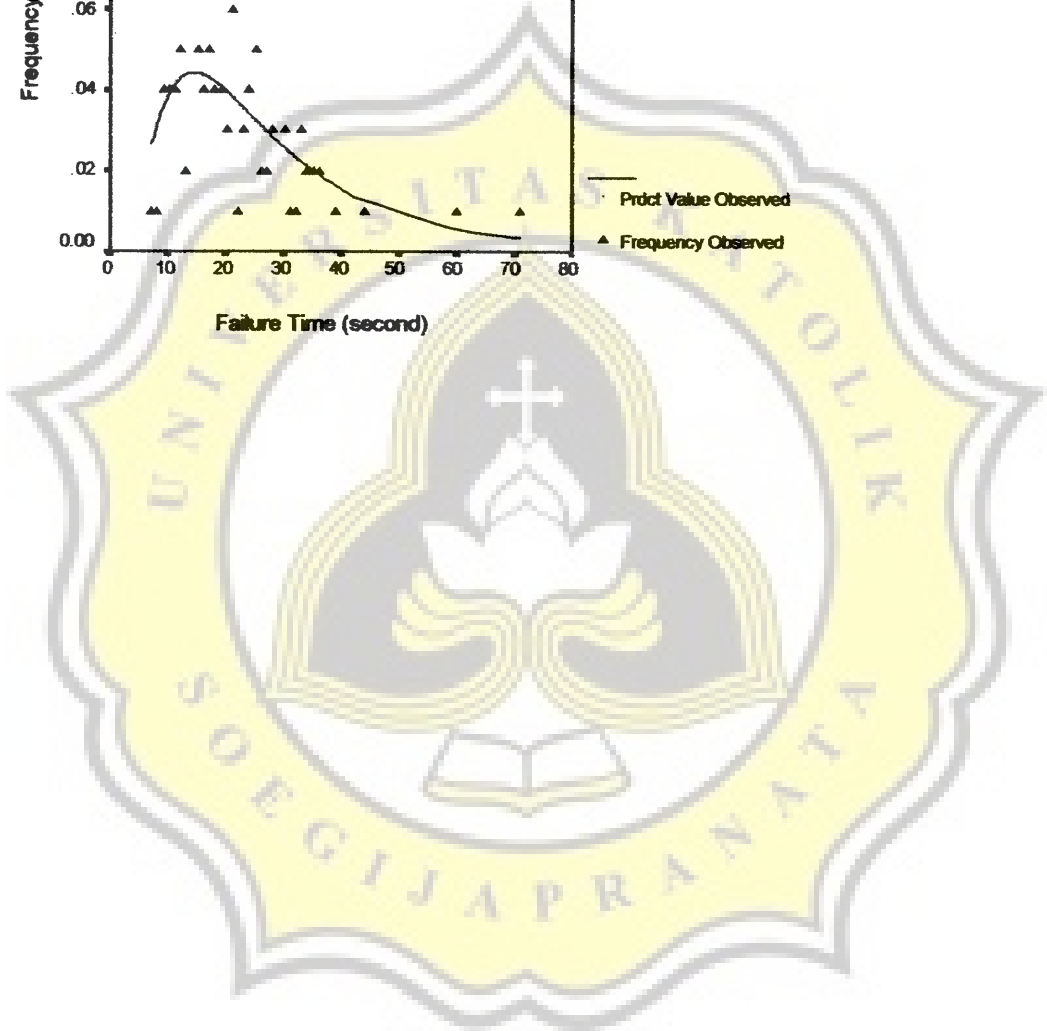
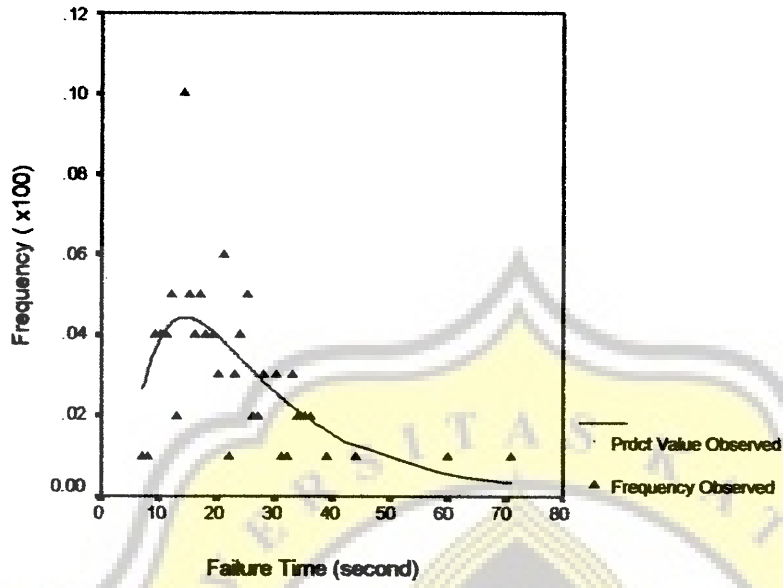
Source	DF	Sum of Squares	Mean Square
Regression	2	.03556	.01778
Residual	31	7.036207E-03	2.269744E-04
Uncorrected Total	33	.04260	
(Corrected Total)	32	.01230	

R squared = 1 - Residual SS / Corrected SS = .42781

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.164308875	.097878254	2.964684859	3.363932891
P	.625705864	.020953438	.582971045	.668440682

Asymptotic Correlation Matrix of the Parameter Estimates

Graph



Appendix 12 : Spherical Extrudate in High Speed Fitted by Log-normal

Non-linear Regression

Name	Label
PRED_	Predicted Values
RESID	Residuals

Iteration	Residual	SS	K	A
1	.0078446432	2.79000000	.630000000	
1.1	.0072755448	2.72899383	.656384514	
2	.0072755448	2.72899383	.656384514	
2.1	.0072706165	2.71826734	.658596469	
3	.0072706165	2.71826734	.658596469	
3.1	.0072705862	2.71734994	.658693939	
4	.0072705862	2.71734994	.658693939	
4.1	.0072705860	2.71727473	.658702658	
5	.0072705860	2.71727473	.658702658	
5.1	.0072705860	2.71726856	.658703381	
6	.0072705860	2.71726856	.658703381	
6.1	.0072705860	2.71726805	.658703441	

Run stopped after 12 model evaluations and 6 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SSSCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

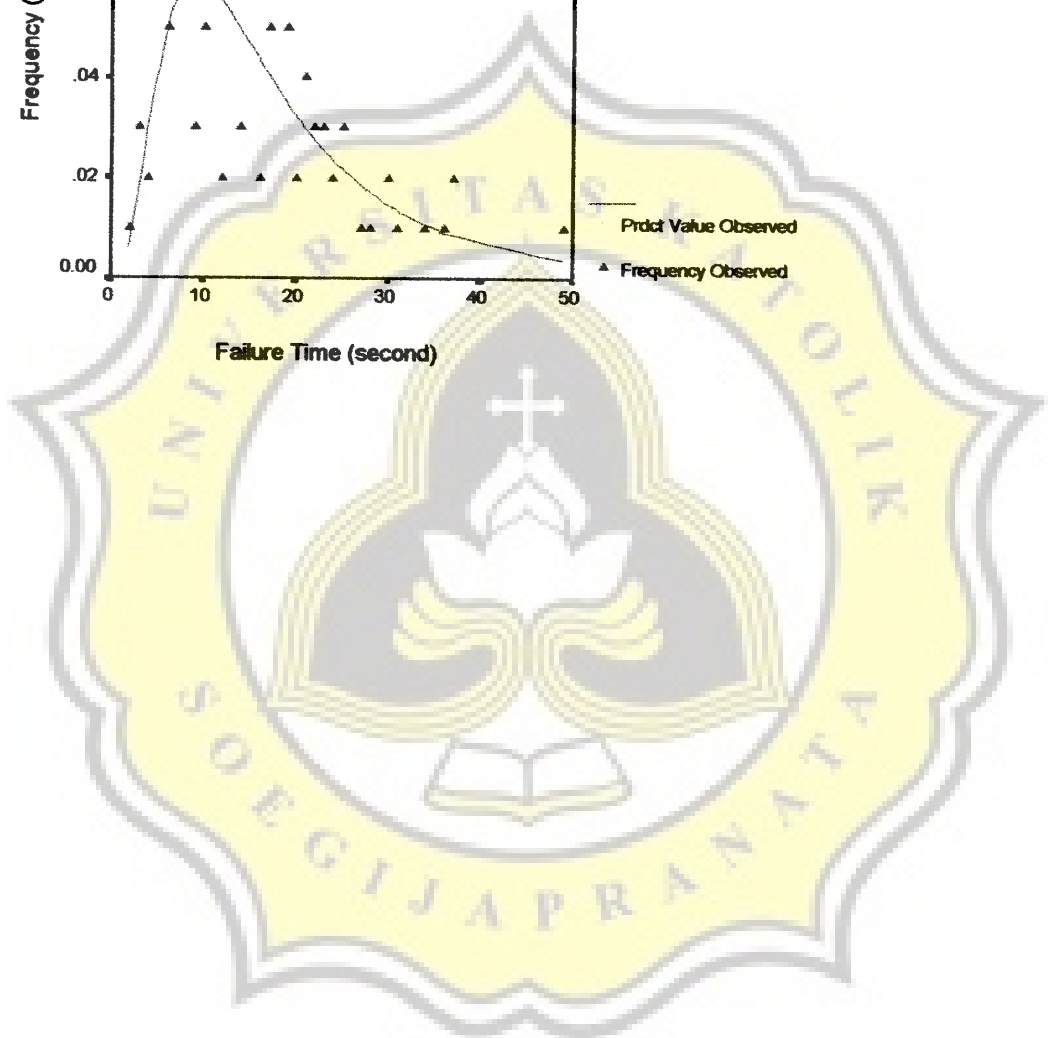
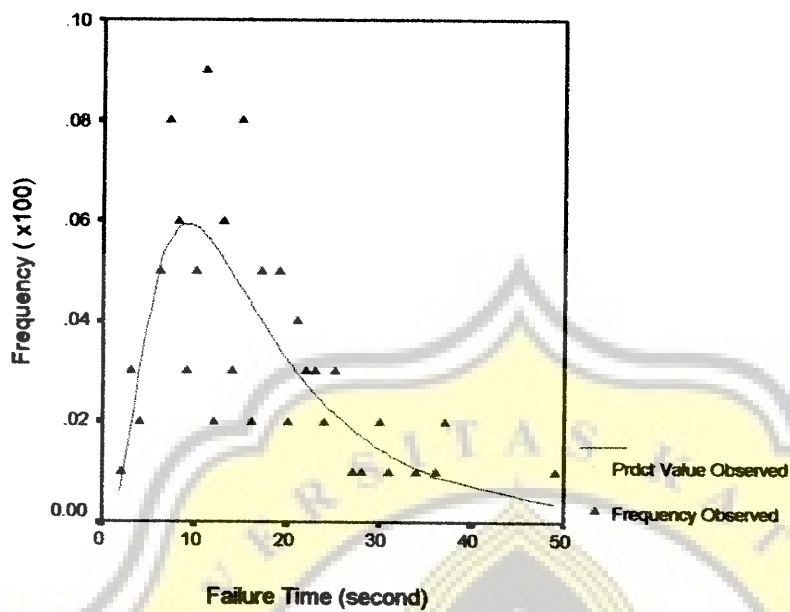
Source	DF	Sum of Squares	Mean Square
Regression	2	.04133	.02066
Residual	28	7.270586E-03	2.596638E-04
Uncorrected Total	30	.04860	
(Corrected Total)	29	.01527	

R squared = 1 - Residual SS / Corrected SS = .52376

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	2.717268050	.088493722	2.535996877	2.898539223
P	.658703441	.020267340	.617187677	.700219205

Asymptotic Correlation Matrix of the Parameter Estimates

Graph



Appendix 13 : Spherical Extrudate in Low Speed Fitted by Log-logistic

Non-linear Regression

The following new variables are being created:

Name	Label
PRED_	Predicted Values
RESID	Residuals

Iteration	Residual SS	K	P
1	.0067540696	3.66000000	.030000000
1.1	.0067412650	3.67250024	.030490308
2	.0067412650	3.67250024	.030490308
2.1	.0067412058	3.66323259	.030492400
3	.0067412058	3.66323259	.030492400
3.1	.0067412045	3.66444813	.030495768
4	.0067412045	3.66444813	.030495768
4.1	.0067412045	3.66421526	.030495369
5	.0067412045	3.66421526	.030495369
5.1	.0067412045	3.66425489	.030495448
6	.0067412045	3.66425489	.030495448
6.1	.0067412045	3.66424798	.030495435

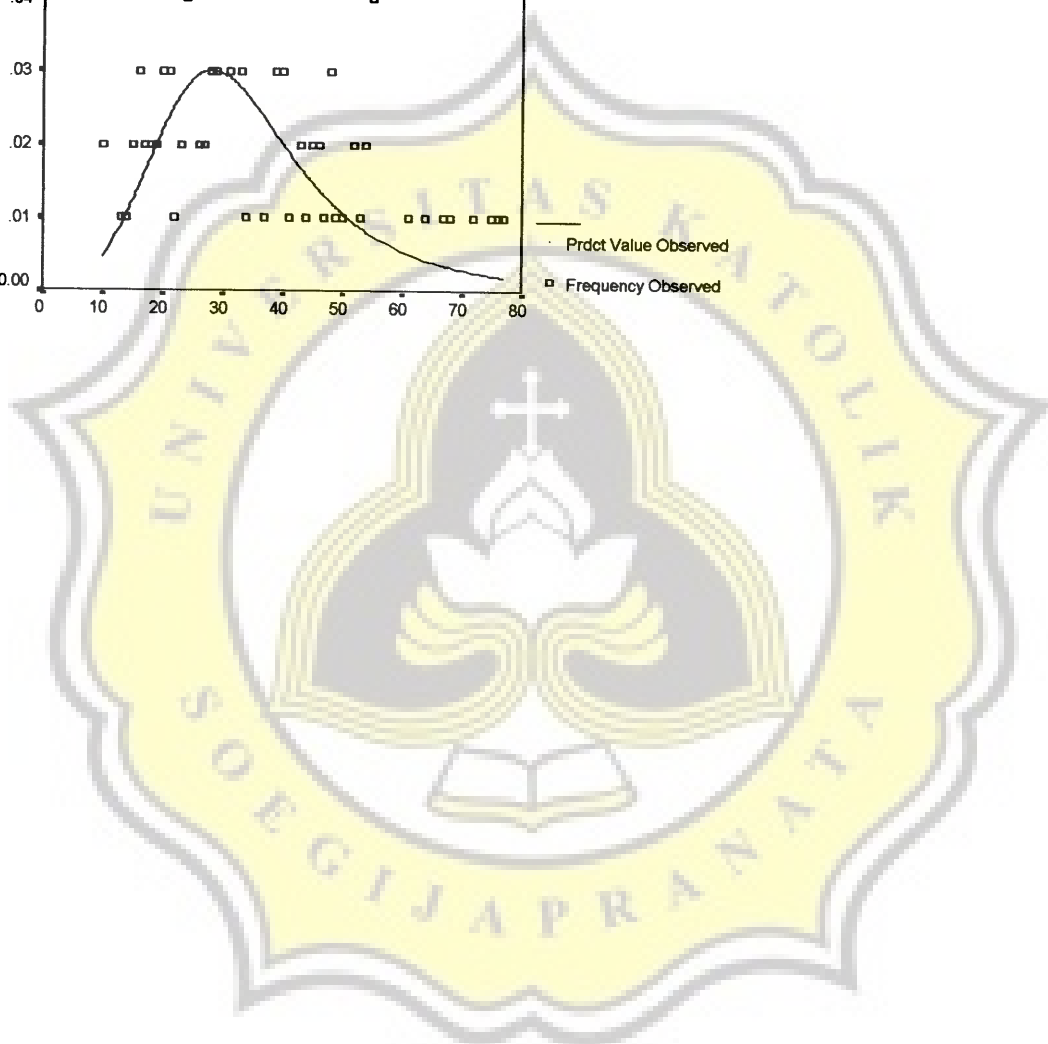
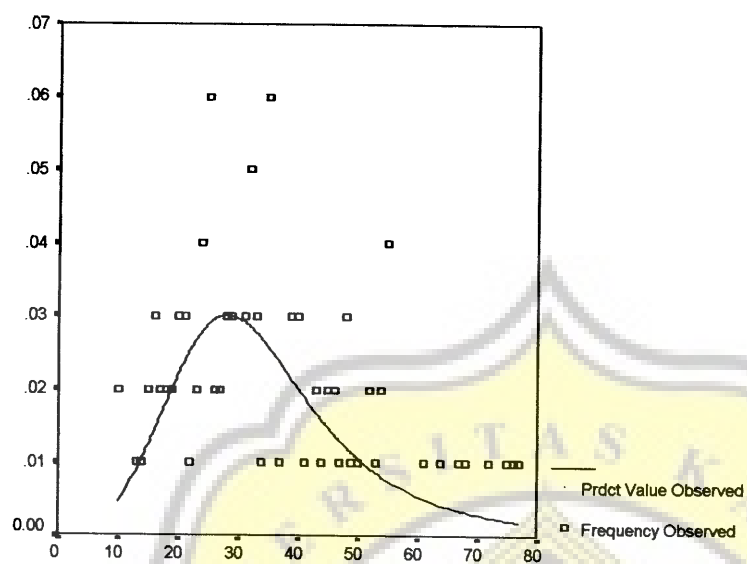
Run stopped after 12 model evaluations and 6 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SSSCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.02226	.01113
Residual	45	6.741204E-03	1.498045E-04
Uncorrected Total	47	.02900	
(Corrected Total)	46	7.723404E-03	

R squared = 1 - Residual SS / Corrected SS = .12717

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	3.664247976	.446525373	2.764899708	4.563596243
P	.030495435	.001689471	.027092665	.033898204

Graph

Appendix 14 : Spherical Extrudate in Medium Speed Fitted by Log-logistic

Non-linear Regression

Name Label

PRED_ Predicted Values
RESID_ Residuals

Iteration	Residual	SS	P	K
1	.0081332090	.060000000	3.26000000	
1.1	.0071565529	.053151656	3.33510403	
2	.0071565529	.053151656	3.33510403	
2.1	.0071531921	.053483190	3.35766614	
3	.0071531921	.053483190	3.35766614	
3.1	.0071531697	.053509802	3.35619498	
4	.0071531697	.053509802	3.35619498	
4.1	.0071531693	.053510916	3.35677623	
5	.0071531693	.053510916	3.35677623	
5.1	.0071531692	.053511210	3.35666209	
6	.0071531692	.053511210	3.35666209	
6.1	.0071531692	.053511184	3.35668952	
7	.0071531692	.053511184	3.35668952	
7.1	.0071531692	.053511193	3.35668343	

Run stopped after 14 model evaluations and 7 derivative evaluations.
Iterations have been stopped because the relative reduction between
successive residual sums of squares is at most SSSCON = 1.000E-10

Nonlinear Regression Summary Statistics

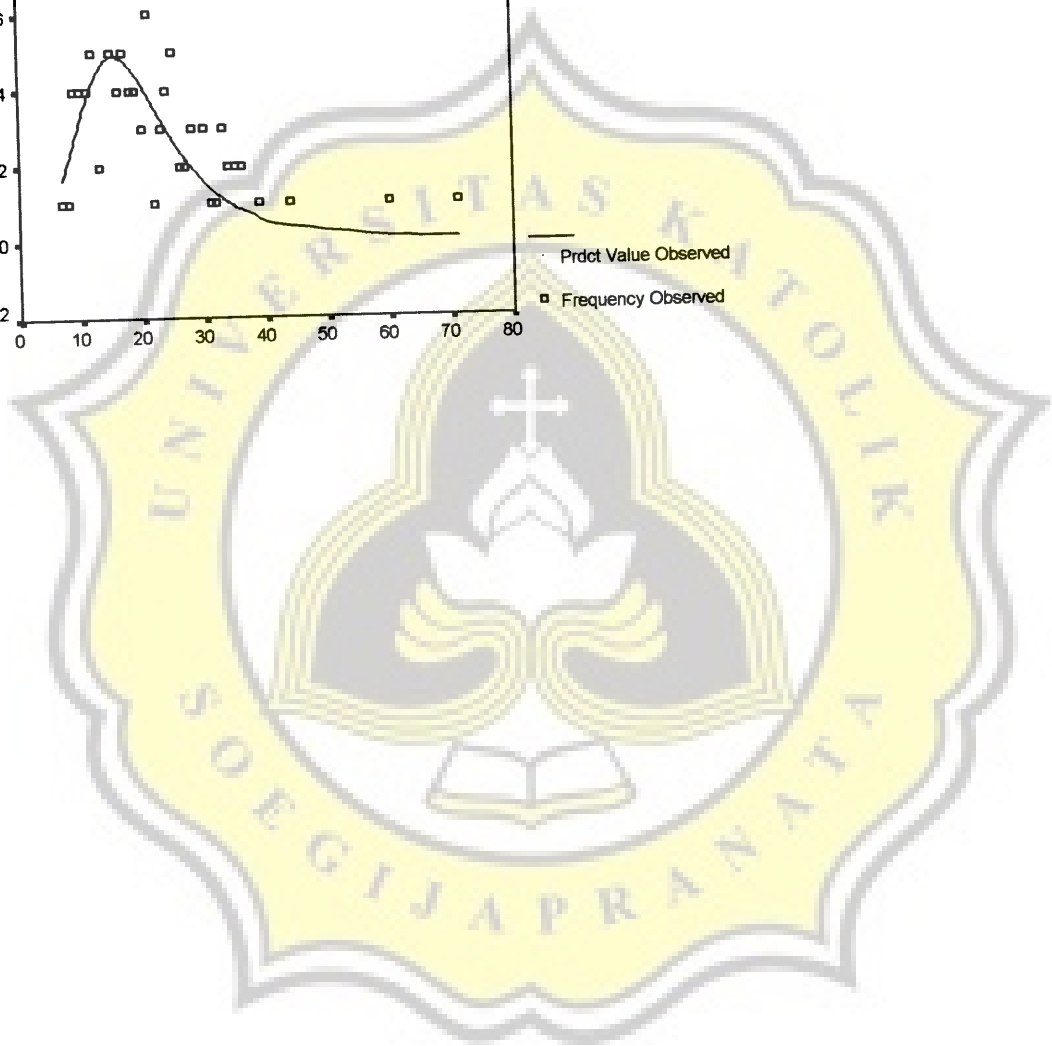
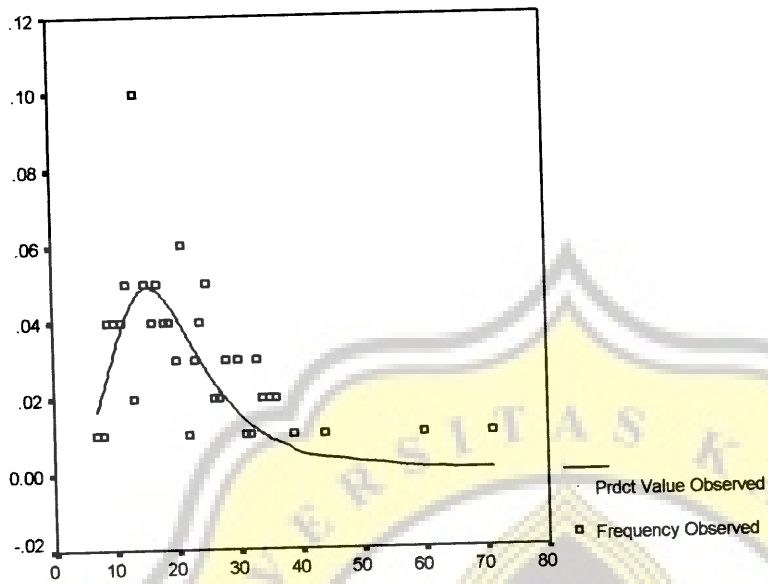
Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.03545	.01772
Residual	31	7.153169E-03	2.307474E-04
Uncorrected Total	33	.04260	
(Corrected Total)	32	.01230	

R squared = 1 - Residual SS / Corrected SS = .41830

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
P	.053511193	.003062188	.047265819	.059756568
K	3.356683432	.369584048	2.602911797	4.110455067

Graph



Appendix 15 : Spherical Extrudate in High Speed Fitted by Log-logistic

Non-linear Regression

Name Label

PRED_ Predicted Values
RESID Residuals

Iteration	Residual SS	K	P
1	.0085537848	2.55000000	.070000000
1.1	.0084439882	2.58018309	.073637633
2	.0084439882	2.58018309	.073637633
2.1	.0084429116	2.56106355	.073663584
3	.0084429116	2.56106355	.073663584
3.1	.0084428679	2.56451255	.073717505
4	.0084428679	2.56451255	.073717505
4.1	.0084428656	2.56359838	.073709453
5	.0084428656	2.56359838	.073709453
5.1	.0084428654	2.56380885	.073711735
6	.0084428654	2.56380885	.073711735
6.1	.0084428654	2.56375818	.073711219
7	.0084428654	2.56375818	.073711219
7.1	.0084428654	2.56377022	.073711345

Run stopped after 14 model evaluations and 7 derivative evaluations.
Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SCON = 1.000E-10

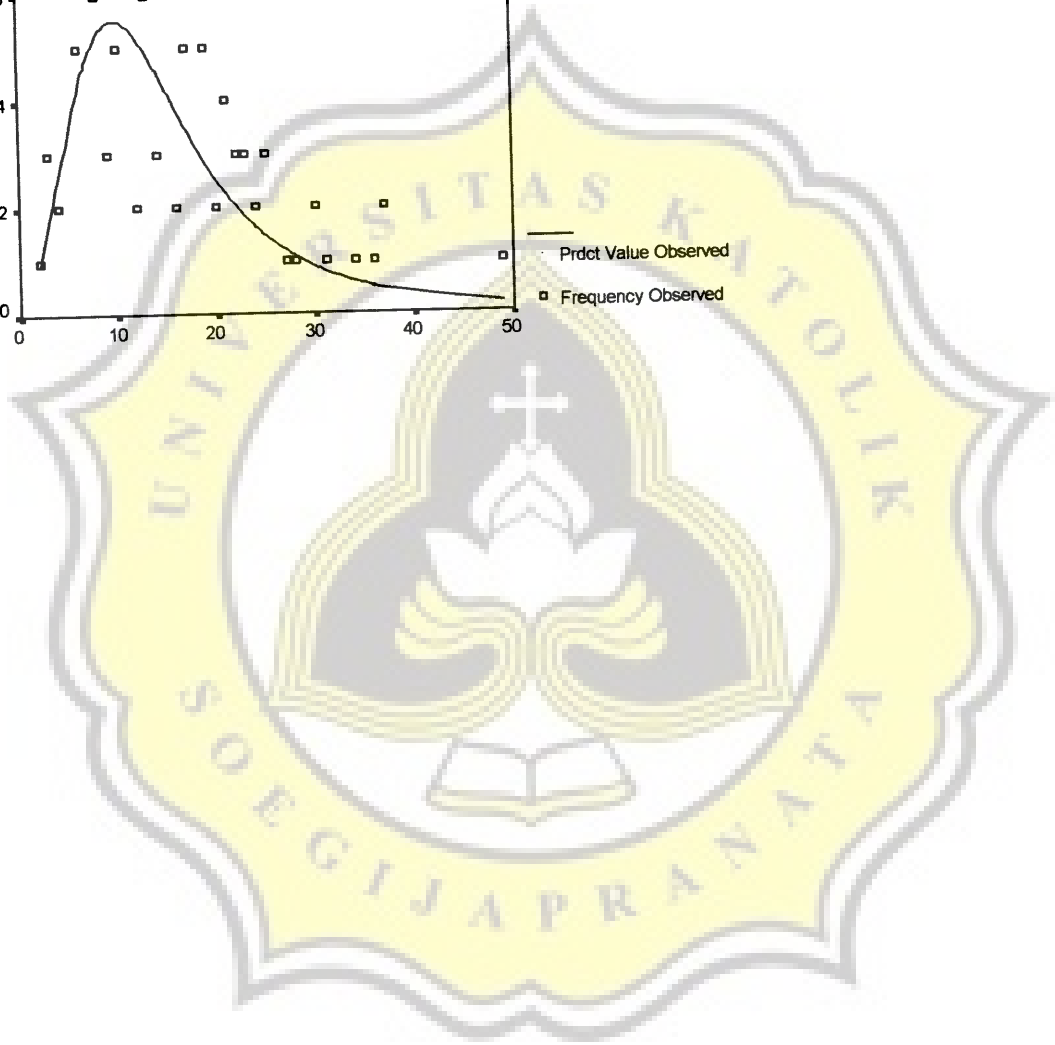
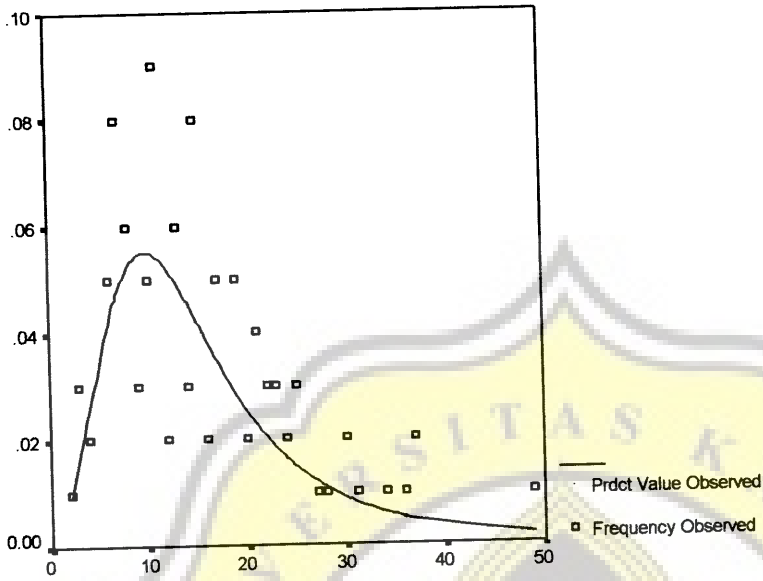
Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.04016	.02008
Residual	28	8.442865E-03	3.015309E-04
Uncorrected Total	30	.04860	
(Corrected Total)	29	.01527	

R squared = 1 - Residual SS / Corrected SS = .44697

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	2.563770218	.299043112	1.951208172	3.176332263
P	.073711345	.006145509	.061122841	.086299849

Graph



Appendix 16 : Spherical Extrudate in Low Speed Fitted By Weibull

Non-linear Regression

Name Label

PRED_ Predicted Values
RESID Residuals

Iteration	Residual SS	K	P
1	.0196127174	6.25000000	.030000000
1.1	.0075928089	3.08194171	.029811552
2	.0075928089	3.08194171	.029811552
2.1	.0068135887	2.55456872	.028431319
3	.0068135887	2.55456872	.028431319
3.1	.0067367219	2.54271634	.027367938
4	.0067367219	2.54271634	.027367938
4.1	.0067355906	2.52858407	.027258661
5	.0067355906	2.52858407	.027258661
5.1	.0067355700	2.52860865	.027240842
6	.0067355700	2.52860865	.027240842
6.1	.0067355697	2.52821744	.027239375
7	.0067355697	2.52821744	.027239375
7.1	.0067355697	2.52825267	.027239045
8	.0067355697	2.52825267	.027239045
8.1	.0067355697	2.52823941	.027239037

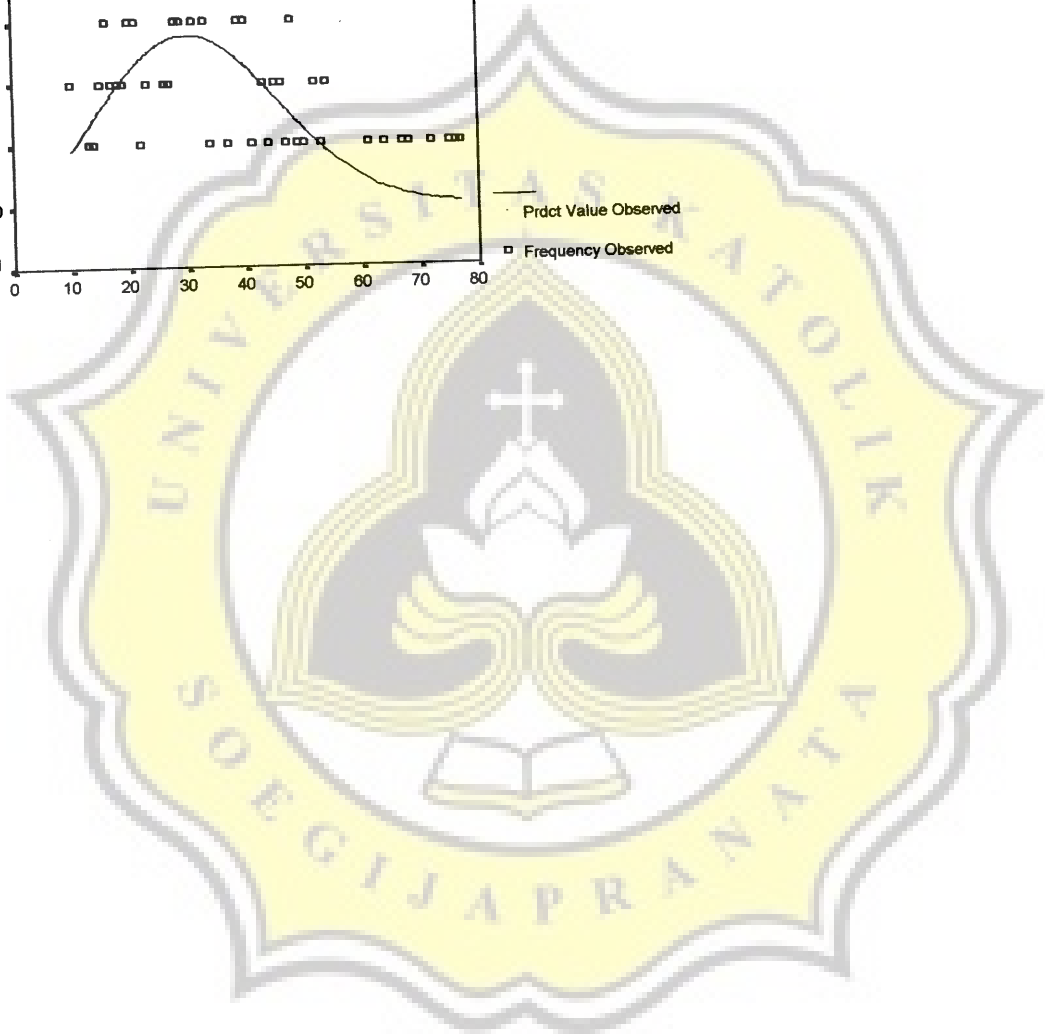
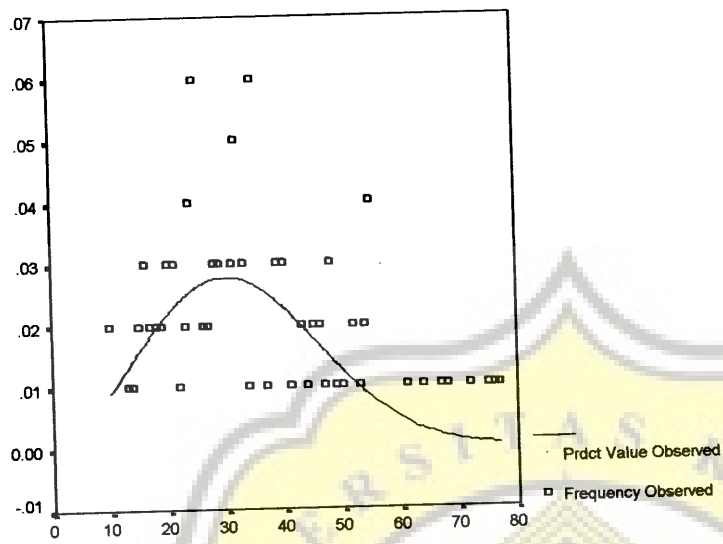
Run stopped after 16 model evaluations and 8 derivative evaluations.
Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SCON = 1.000E-10

Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.02226	.01113
Residual	45	6.735570E-03	1.496793E-04
Uncorrected Total	47	.02900	
(Corrected Total)	46	7.723404E-03	

R squared = 1 - Residual SS / Corrected SS = .12790

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	2.528239414	.316157084	1.891466359	3.165012469
P	.027239037	.001581954	.024052818	.030425256

Graph

Appendix 17 : Spherical Extrudate in Medium Speed Fitted by Weibull

Non-linear Regression

Name	Label		
PRED		Predicted Values	
RESID		Residuals	
Iteration	Residual SS	K	P
1	.0076585870	2.31200000	.047000000
1.1	.0076558406	2.31378935	.046705862
2	.0076558406	2.31378935	.046705862
2.1	.0076557961	2.31093155	.046682396
3	.0076557961	2.31093155	.046682396
3.1	.0076557947	2.31147221	.046676992
4	.0076557947	2.31147221	.046676992
4.1	.0076557946	2.31128477	.046677152
5	.0076557946	2.31128477	.046677152
5.1	.0076557946	2.31133498	.046676949
6	.0076557946	2.31133498	.046676949
6.1	.0076557946	2.31132014	.046676989
7	.0076557946	2.31132014	.046676989
7.1	.0076557946	2.31132435	.046676976

Run stopped after 14 model evaluations and 7 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most $SSCON = 1.000E-10$

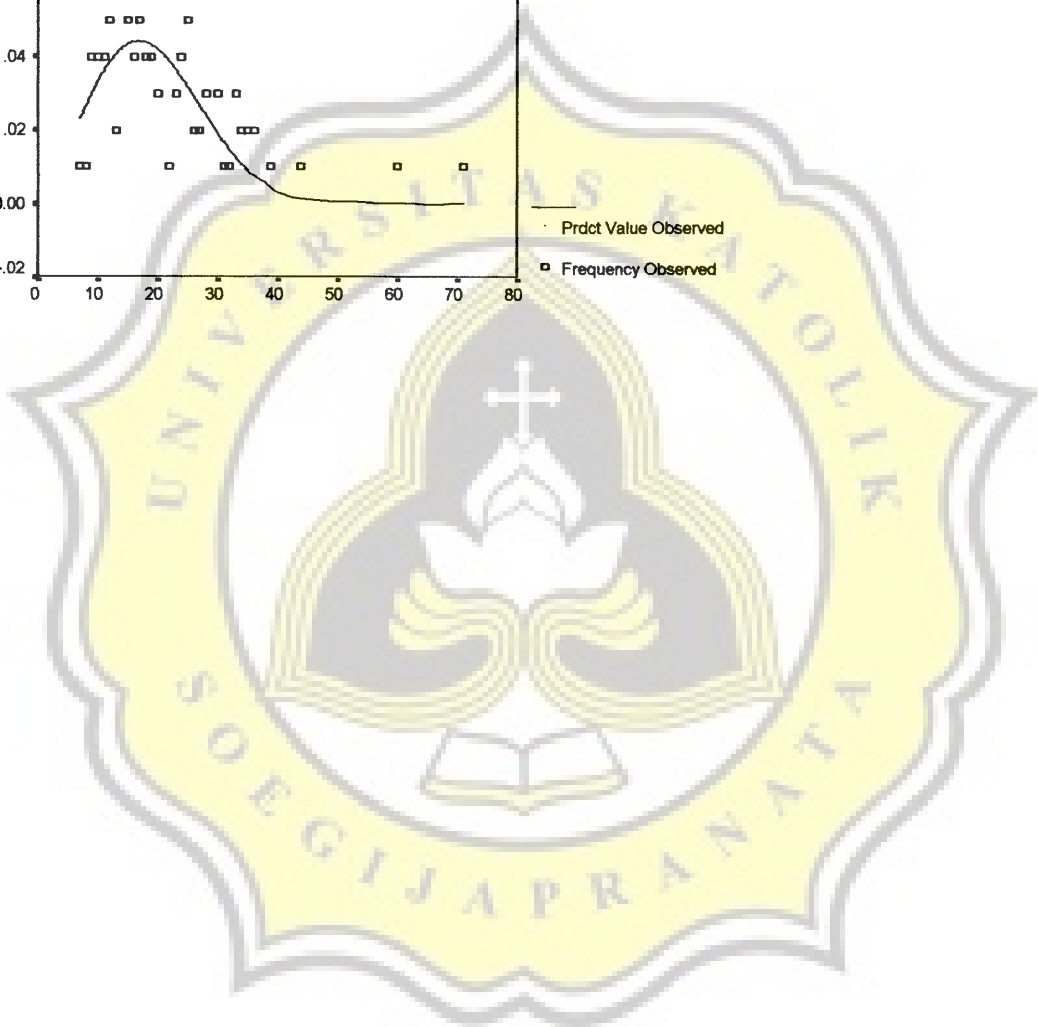
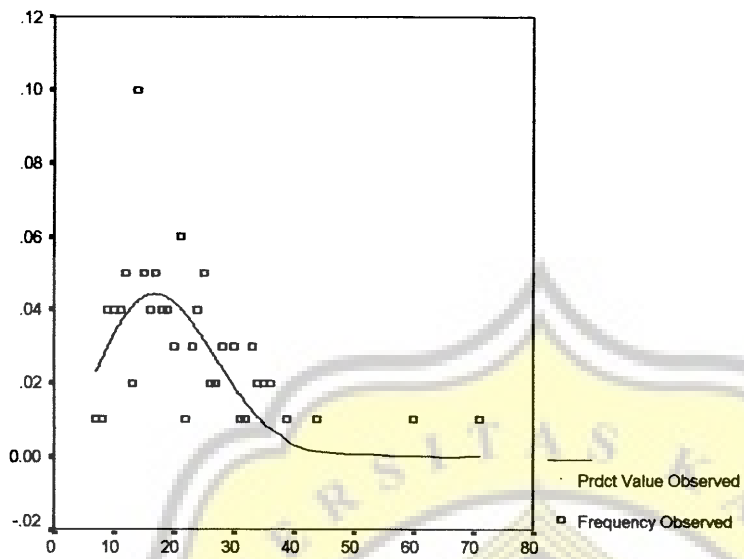
Nonlinear Regression Summary Statistics

Source	DF	Sum of Squares	Mean Square
Regression	2	.03494	.01747
Residual	31	7.655795E-03	2.469611E-04
Uncorrected Total	33	.04260	
(Corrected Total)	32	.01230	

R squared = $1 - \text{Residual SS} / \text{Corrected SS} = .37742$

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	2.311324349	.270141309	1.760367518	2.862281180
P	.046676976	.002893241	.040776172	.052577779

Graph



Appendix 18 : Spherical Extrudate in High Speed Fitted by Weibull

Non-linear Regression

Name Label

PRED Predicted Values
RESID Residuals

Iteration	Residual	SS	K	P
1	.0242788117	3.00000000	.040000000	
1.1	.0216837028	.755212648	.046465058	
2	.0216837028	.755212648	.046465058	
2.1	.0125091568	1.33786747	.046421146	
3	.0125091568	1.33786747	.046421146	
3.1	.0081840069	1.86385994	.060292178	
4	.0081840069	1.86385994	.060292178	
4.1	.0081112036	1.92281436	.062430327	
5	.0081112036	1.92281436	.062430327	
5.1	.0081108980	1.91531896	.062419851	
6	.0081108980	1.91531896	.062419851	
6.1	.0081108886	1.91662276	.062418590	
7	.0081108886	1.91662276	.062418590	
7.1	.0081108883	1.91639519	.062418702	
8	.0081108883	1.91639519	.062418702	
8.1	.0081108883	1.91643489	.062418679	
9	.0081108883	1.91643489	.062418679	
9.1	.0081108883	1.91642796	.062418683	

Run stopped after 18 model evaluations and 9 derivative evaluations. Iterations have been stopped because the relative reduction between successive residual sums of squares is at most SCON = 1.000E-10

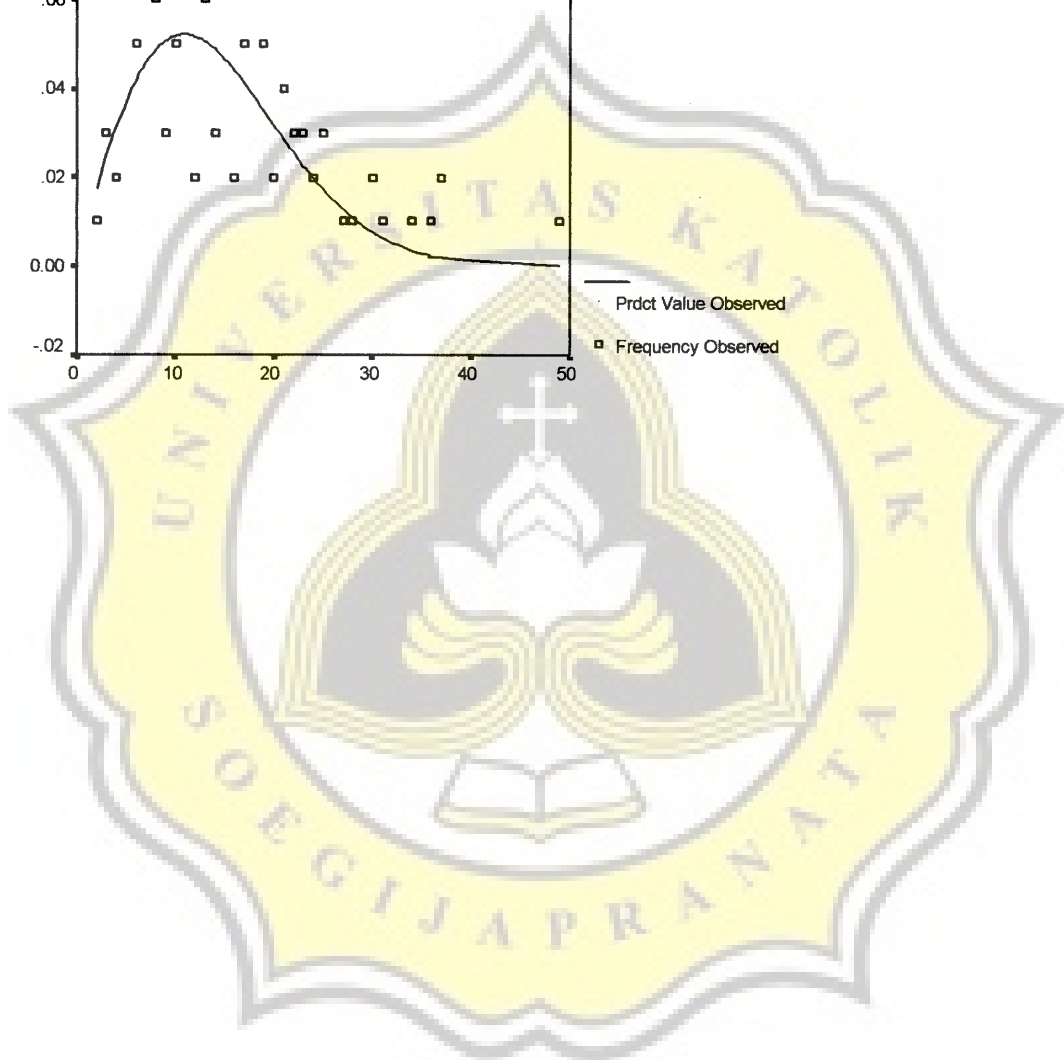
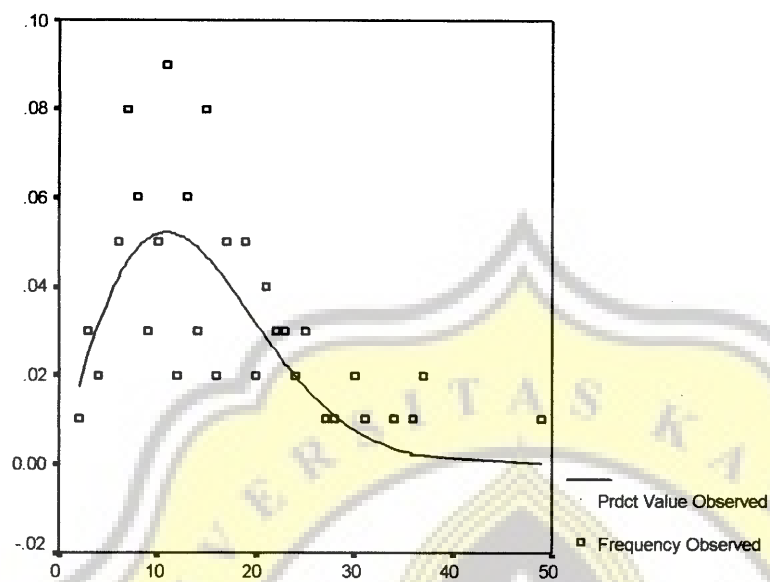
Nonlinear Regression Summary Statistics Dependent Variable FREK

Source	DF	Sum of Squares	Mean Square
Regression	2	.04049	.02024
Residual	28	8.110888E-03	2.896746E-04
Uncorrected Total	30	.04860	
(Corrected Total)	29	.01527	

R squared = 1 - Residual SS / Corrected SS = .46872

Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval	
			Lower	Upper
K	1.916427956	.209440963	1.487407591	2.345448321
P	.062418683	.004705150	.052780619	.072056747

Graph



Appendix 19

Kruskal-Wallis Test

Ranks

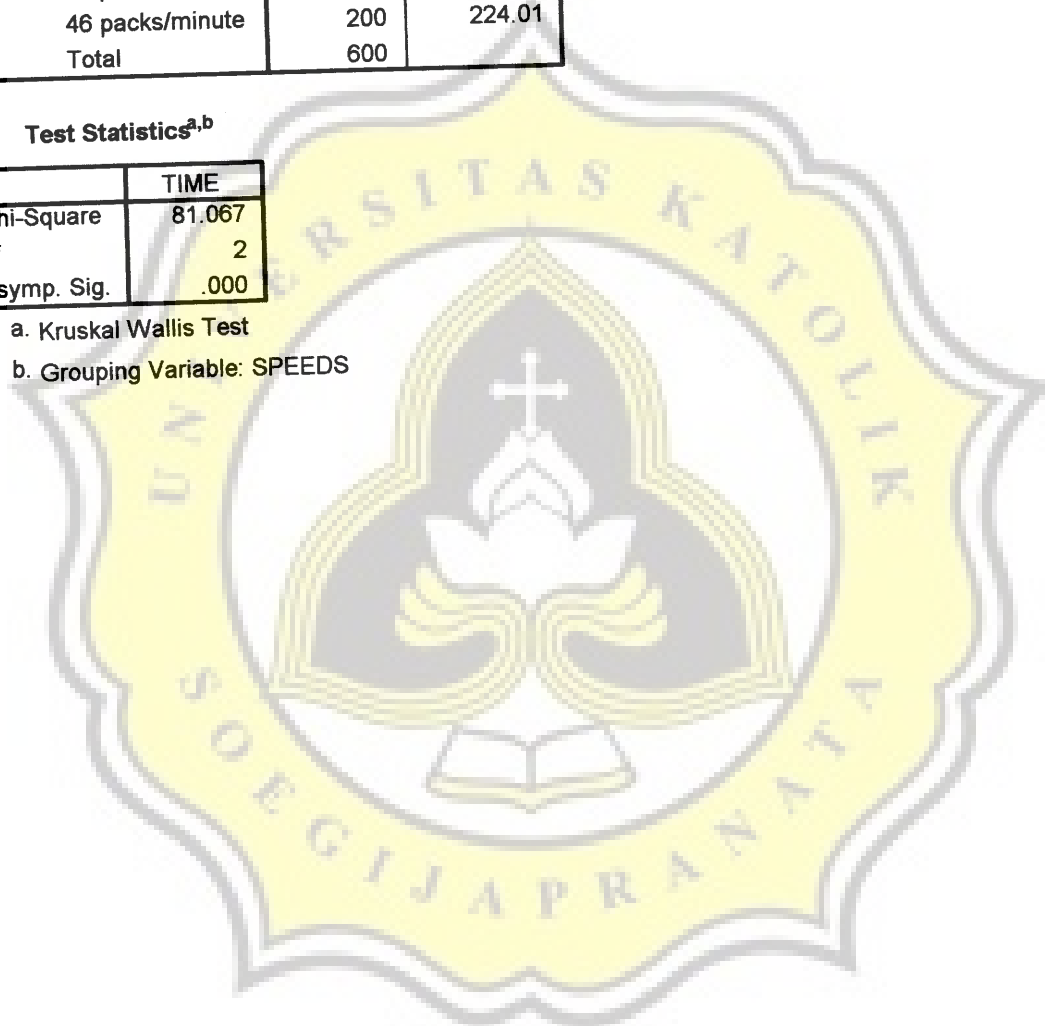
	SPEEDS	N	Mean Rank
TIME	28 packs/minute	200	379.88
	37 packs/minute	200	297.61
	46 packs/minute	200	224.01
	Total	600	

Test Statistics^{a,b}

	TIME
Chi-Square	81.067
df	2
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: SPEEDS



Appendix 20

Two-Sample Kolmogorov-Smirnov Test

Frequencies

SPEEDS		N
TIME	28 packs/minute	200
	46 packs/minute	200
	Total	400

Test Statistics^a

		TIME
Most Extreme Differences	Absolute	.360
	Positive	.000
	Negative	-.360
Kolmogorov-Smirnov Z		3.600
Asymp. Sig. (2-tailed)		.000

a. Grouping Variable: SPEEDS

Frequencies

SPEEDS		N
TIME	37 packs/minute	200
	46 packs/minute	200
	Total	400

Test Statistics^a

		TIME
Most Extreme Differences	Absolute	.205
	Positive	.000
	Negative	-.205
Kolmogorov-Smirnov Z		2.050
Asymp. Sig. (2-tailed)		.000

a. Grouping Variable: SPEEDS

Frequencies

SPEEDS		N
TIME	28 packs/minute	200
	37 packs / minute	200
	Total	400

Test Statistics^a

		TIME
Most Extreme Differences	Absolute	.245
	Positive	.000
	Negative	-.245
Kolmogorov-Smirnov Z		2.450
Asymp. Sig. (2-tailed)		.000

a. Grouping Variable: SPEEDS

Frequencies

TIME	SHAPE	N
	cylindrical	300
	spherical	300
Total		600

Test Statistics^a

		TIME
Most Extreme Differences	Absolute	.293
	Positive	.293
	Negative	-.047
Kolmogorov-Smirnov Z		3.593
Asymp. Sig. (2-tailed)		.000

a. Grouping Variable: SHAPE

TRIAL SHEET

Shape of Product : Spherical
 Speed of Machine : 28 packs / minute (low speed)

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
1	10				-						-		Repairing of Feeder
2	27				-						-		Repairing of Feeder
3	40	-											Repairing of Sensor
4	21				-						-		Repairing of Feeder
5	23				-						-		Repairing of Feeder
6	28	-											Repairing of Sensor
7	75	-									-		Repairing of Feeder
8	35				-						-		Repairing of Feeder
9	21				-						-		Repairing of Sensor
10	24	-											Repairing of Sensor
11	19	-											Repairing of Feeder
12	33				-						-		Repairing of Feeder
13	29				-								Repairing of Sensor
14	26												Repairing of Feeder
15	25												Repairing of Feeder
16	47				-						-		Repairing of Heater
17	50				-						-		Repairing of Heater
18	54												Repairing of Feeder
19	20	-											Repairing of Sensor
20	14				-								Repairing of Binder
21	52				-								Repairing of Feeder
22	55				-								Repairing of Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
23	55	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
24	25	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
25	17	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
26	37	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
27	49	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
28	24	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
29	61	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
30	67	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
31	28	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
32	32	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
33	64	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
34	55	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
35	46	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
36	35	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
37	76	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
38	72	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
39	41	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
40	48	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
41	24	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
42	45	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
43	46	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
44	43	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
45	25	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
46	52	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
47	18	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
48	54	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
49	35	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
50	20	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
51	39	-					-						Repairing of Sensor
52	35						-						Repairing of Feeder
53	45	-					-						Repairing of Sensor
54	44						-						Repairing of Feeder
55	43						-						Repairing of Feeder
56	48						-						Repairing of Feeder
57	25						-						Repairing of Sensor
58	35						-						Repairing of Sensor
59	77						-						Repairing of Feeder
60	32						-						Repairing of Feeder
61	29						-						Repairing of Feeder
62	31						-						Repairing of Sensor
63	53						-						Repairing of Sensor
64	20						-						Repairing of Feeder
65	15						-						Repairing of Feeder
66	19						-						Repairing of Sensor
67	68						-						Repairing of Sensor
68	29						-						Repairing of Sensor
69	16						-						Repairing of Feeder
70	31						-						Repairing of Sensor
71	33						-						Repairing of Sensor
72	27						-						Repairing of Sensor
73	34						-						Repairing of Sensor
74	23						-						Repairing of Sensor
75	17						-						Repairing of Sensor
76	48						-						Repairing of Sensor
77	32						-						Repairing of Sensor

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
78	10	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
79	16	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
80	40	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
81	55	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
82	45	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
83	39	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
84	26	-	-	-	-	-	-	-	-	-	-	Repairing of Heater & Feeder
85	40	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
86	39	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
87	32	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
88	33	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
89	25	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
90	24	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
91	35	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
92	31	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
93	18	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
94	22	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
95	15	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
96	13	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
97	32	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
98	16	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
99	21	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
100	28	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor

Bold Numbers : Special cases, unsuitable between failure modes and effect on product

- E₁ : Unprecised Sealing
- E₂ : Leaking Package
- E₃ : Lost Adhesiveness
- E₄ : Uneven Amount of Product
- E₅ : Empty Package

TRIAL SHEET

Shape of Product : Spherical
 Speed of Machine : 37 packs / minute (medium speed)

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
1	14	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
2	15	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
3	28	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
4	15	-	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
5	23	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
6	20	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
7	18	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
8	17	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
9	39	-	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
10	12	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
11	26	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
12	14	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
13	22	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
14	33	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
15	19	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
16	33	-	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
17	35	-	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
18	60	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
19	30	-	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
20	28	-	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
21	44	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
22	32	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
23	19			-									Repairing of Heater
24	36			-									Repairing of Heater
25	35			-									Repairing of Heater
26	11		-										Repairing of Binder
27	71												Repairing of Feeder
28	27			-									Repairing of Heater
29	30			-									Repairing of Heater
30	21			-									Repairing of Heater & Feeder
31	30			-									Repairing of Heater
32	14		-										Repairing of Binder
33	25		-										Repairing of Binder
34	25		-										Repairing of Sensor & Feeder
35	21		-										Repairing of Binder & Feeder
36	7		-										Repairing of Binder
37	24		-										Repairing of Binder
38	28		-										Repairing of Heater
39	26		-										Repairing of Binder
40	12		-										Repairing of Sensor
41	14		-										Repairing of Sensor & Feeder
42	16		-										Repairing of Sensor & Feeder
43	11		-										Repairing of Sensor & Feeder
44	21		-										Repairing of Binder
45	14		-										Repairing of Heater
46	15		-										Repairing of Feeder
47	23		-										Repairing of Heater
48	17		-										Repairing of Binder & Feeder
49	11		-										Repairing of Sensor
50	14		-										Repairing of Binder
			-										Repairing of Sensor & Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
51	25				-								Repairing of Feeder
52	17	-											Repairing of Sensor
53	18				-								Repairing of Feeder
54	18				-								Repairing of Feeder
55	31		-										Repairing of Binder
56	27			-									Repairing of Heater
57	12	-											Repairing of Sensor
58	13		-										Repairing of Binder
59	9		-										Repairing of Binder
60	15	-											Repairing of Sensor
61	34	-			-								Repairing of Sensor & Feeder
62	10				-								Repairing of Feeder
63	12				-								Repairing of Feeder
64	23			-									Repairing of Heater
65	24				-								Repairing of Feeder
66	20	-											Repairing of Sensor
67	16				-								Repairing of Feeder
68	13		-										Repairing of Binder
69	14	-											Repairing of Sensor
70	10				-								Repairing of Sensor
71	21	-											Repairing of Binder
72	25	-											Repairing of Sensor
73	36	-											Repairing of Sns, Htr & Feeder
74	9		-										Repairing of Binder
75	10				-								Repairing of Binder
76	18		-										Repairing of Binder
77	21				-								Repairing of Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
78	17	-	-	-	-	-	-	-	-	-	-	Repairing of Binder & Feeder
79	20	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
80	24	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
81	11	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
82	19	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
83	21	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
84	14	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
85	16	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
86	8	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
87	19	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
88	14	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
89	10	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
90	25	-	-	-	-	-	-	-	-	-	-	Repairing of Heater & Feeder
91	33	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
92	9	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
93	15	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
94	24	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
95	12	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
96	9	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
97	34	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
98	16	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
99	17	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
100	14	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor

Bold Numbers : Special cases, unsuitable between failure modes and effect on product

F₁ : Unprecised Sealing

F₂ : Leaking Package

F₃ : Lost Adhesiveness

F₄ : Uneven Amount of Product

F₅ : Empty Package

TRIAL SHEET

Shape of Product : Spherical
 Speed of Machine : 46 packs / minute (high speed)

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
1	10				-						-		Repairing of Feeder
2	14				-						-		Repairing of Feeder
3	6	-						-					Repairing of Sensor
4	7	-						-					Repairing of Sensor
5	8	-						-					Repairing of Sensor
6	7	-						-					Repairing of Sensor
7	8	-						-					Repairing of Sensor & Feeder
8	28	-						-					Repairing of Sensor
9	23	-						-					Repairing of Sensor
10	17	-						-					Repairing of Sensor & Feeder
11	6	-						-					Repairing of Feeder
12	11	-						-					Repairing of Sensor & Feeder
13	13	-						-					Repairing of Sensor
14	25	-						-					Repairing of Sensor
15	19	-						-					Repairing of Sensor
16	19	-						-					Repairing of Sensor
17	13	-						-					Repairing of Sensor
18	21	-						-					Repairing of Sensor
19	8	-						-					Repairing of Sensor
20	3	-						-					Repairing of Sensor
21	3	-						-					Repairing of Sensor
22	29	-						-					Repairing of Sensor

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
23	8	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
24	7	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
25	3	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
26	7	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
27	11	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
28	4	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
29	8	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
30	4	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
31	2	-	-	-	-	-	-	-	-	-	-	Repairing Sensor & Feeder
32	6	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
33	25	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
34	22	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
35	17	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
36	11	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
37	49	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
38	14	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
39	19	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
40	6	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
41	22	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
42	14	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
43	15	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
44	10	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
45	9	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
46	13	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
47	36	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
48	15	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
49	25	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
50	20	-	-	-	-	-	-	-	-	-	-	Repairing of Heater & Feeder
		-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Heater

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
51	8			-	-				-	-		Repairing of Heater & Feeder
52	20				-			-	-		Repairing of Feeder	
53	10			-				-	-		Repairing of Heater	
54	11			-				-	-		Repairing of Heater	
55	11		-				-	-	-		Repairing of Sensor	
56	11			-	-			-	-		Repairing of Feeder	
57	11			-	-			-	-		Repairing of Heater & Feeder	
58	7		-				-	-	-		Repairing of Sensor	
59	7			-				-	-		Repairing of Heater	
60	15			-				-	-		Repairing of Heater	
61	24			-				-	-		Repairing of Heater	
62	15			-				-	-		Repairing of Heater	
63	23			-				-	-		Repairing of Heater	
64	15		-				-	-	-		Repairing of Feeder	
65	21			-				-	-		Repairing of Heater	
66	30			-				-	-		Repairing of Binder	
67	15			-				-	-		Repairing of Heater	
68	21			-				-	-		Repairing of Heater	
69	9			-				-	-		Repairing of Heater	
70	15			-				-	-		Repairing of Heater	
71	16			-				-	-		Repairing of Sensor & Feeder	
72	21			-				-	-		Repairing of Feeder	
73	10			-				-	-		Repairing of Sensor & Heater	
74	34			-				-	-		Repairing of Heater	
75	31			-				-	-		Repairing of Heater	
76	13			-				-	-		Repairing of Heater	
77	37			-				-	-		Repairing of Sensor & Heater	

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
78	9	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
79	17	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
80	24	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
81	15	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
82	17	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
83	37	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
84	16	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
85	23	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
86	12	-	-	-	-	-	-	-	-	-	-	Repairing of Heater & Feeder
87	7	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
88	12	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
89	17	-	-	-	-	-	-	-	-	-	-	Repairing of Heater & Feeder
90	11	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
91	30	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Heater
92	10	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
93	22	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
94	13	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
95	27	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
96	13	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
97	19	-	-	-	-	-	-	-	-	-	-	Repairing of Heater
98	6	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
99	11	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
100	7	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor

Bold Numbers : Special cases, unsuitable between failure modes and effect on product

E₁ : Unprecised Sealing

E₂ : Leaking Package

E₃ : Lost Adhesiveness

E₄ : Uneven Amount of Product

E₅ : Empty Package

F₁ : Failure of Sensor

F₂ : Failure of Binder

F₃ : Failure of Heater

F₄ : Failure of Feeder

F₅ : Failure of Vibrator

TRIAL SHEET

Shape of Product : Elliptical
 Speed of Machine : 28 packs / minute (low speed)

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
1	18	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
2	17	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
3	12	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
4	20	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
5	19	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
6	14	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
7	8	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
8	12	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
9	10	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
10	14	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
11	15	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
12	18	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
13	11	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
14	29	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
15	8	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
16	22	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
17	6	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
18	20	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
19	18	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
20	14	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
21	16	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
22	19	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
23	15				-		-						Repairing of Feeder
24	23				-								Repairing of Feeder
25	12		-										Repairing of Binder
26	16				-								Repairing of Feeder
27	24		-										Repairing of Binder
28	25				-								Repairing of Feeder
29	23		-										Repairing of Sensor
30	12				-								Repairing of Binder
31	28		-										Repairing of Sensor
32	17		-										Repairing of Sensor
33	14		-										Repairing of Sensor
34	10		-										Repairing of Feeder
35	16		-										Repairing of Sensor
36	21		-										Repairing of Sensor
37	31		-										Repairing of Feeder
38	11		-										Repairing of Feeder
39	10		-										Repairing of Feeder
40	16		-										Repairing of Sensor
41	18		-										Repairing of Sensor
42	27		-										Repairing of Sensor
43	10		-										Repairing of Feeder
44	14		-										Repairing of Sensor
45	15		-										Repairing of Sensor
46	34		-										Repairing of Binder
47	20		-										Repairing of Sensor
48	10		-										Repairing of Feeder
49	23		-										Repairing of Sensor
50	25		-										Repairing of Sensor

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
51	31	-					-						Repairing of Sensor
52	33				-						-		Repairing of Feeder
53	10				-							-	Repairing of Feeder
54	11				-								Repairing of Feeder
55	14	-					-						Repairing of Sensor
56	9				-						-		Repairing of Feeder
57	18				-								Repairing of Feeder
58	11	-					-						Repairing of Sensor
59	11				-								Repairing of Feeder
60	19				-								Repairing of Feeder
61	16	-					-						Repairing of Sensor
62	19				-								Repairing of Feeder
63	20	-					-						Repairing of Sensor
64	18	-					-						Repairing of Sensor
65	11	-					-						Repairing of Feeder
66	19	-					-						Repairing of Sensor
67	15	-					-						Repairing of Sensor
68	14	-					-						Repairing of Sensor
69	13				-								Repairing of Feeder
70	14				-								Repairing of Feeder
71	15	-					-						Repairing of Sensor
72	11	-					-						Repairing of Sensor
73	19				-								Repairing of Feeder
74	15	-					-						Repairing of Sensor
75	22				-								Repairing of Feeder
76	20				-								Repairing of Feeder
77	23	-					-						Repairing of Sensor

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
78	21				-								Repairing of Feeder
79	28				-								Repairing of Feeder
80	12	-											Repairing of Sensor
81	12				-								Repairing of Feeder
82	25	-											Repairing of Sensor
83	15				-								Repairing of Feeder
84	12				-								Repairing of Feeder
85	24				-								Repairing of Feeder
86	19	-											Repairing of Sensor
87	20	-											Repairing of Sensor
88	21	-											Repairing of Sensor
89	22				-								Repairing of Feeder
90	12	-											Repairing of Sensor
91	14				-								Repairing of Feeder
92	16	-											Repairing of Sensor
93	26				-								Repairing of Feeder
94	15	-											Repairing of Sensor
95	31				-								Repairing of Feeder
96	18				-								Repairing of Feeder
97	28	-											Repairing of Sensor
98	21				-								Repairing of Feeder
99	26				-								Repairing of Feeder
100	17				-								Repairing of Feeder

Bold Numbers : Special cases, unsuitable between failure modes and effect on product

F₁ : Failure of Sensor

F₂ : Failure of Binder

F₃ : Failure of Heater

F₄ : Failure of Feeder

F₅ : Failure of Vibrator

E₁ : Unprecised Sealing

E₂ : Leaking Package

E₃ : Lost Adhesiveness

E₄ : Uneven Amount of Product

E₅ : Empty Package

TRIAL SHEET

Shape of Product : Elliptical

Speed of Machine : 37 packs / minute (medium speed)

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action		
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅			
1	8				-									Repairing of Feeder
2	17				-									Repairing of Feeder
3	13													Repairing of Feeder
4	25													Repairing of Feeder
5	16													Repairing of Feeder
6	15													Repairing of Feeder
7	18													Repairing of Feeder
8	21													Repairing of Feeder
9	24													Repairing of Feeder
10	16													Repairing of Feeder
11	15													Repairing of Feeder
12	18													Repairing of Feeder
13	23													Repairing of Feeder
14	15													Repairing of Feeder
15	14													Repairing of Feeder
16	17													Repairing of Feeder
17	18													Repairing of Feeder
18	16													Repairing of Feeder
19	18													Repairing of Feeder
20	15													Repairing of Feeder
21	29													Repairing of Feeder
22	11													Repairing of Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
23	11				-								Repairing of Feeder
24	18				-								Repairing of Feeder
25	13	-											Repairing of Sensor
26	12				-								Repairing of Feeder
27	15	-			-								Repairing of Sensor & Feeder
28	11				-								Repairing of Feeder
29	23				-								Repairing of Feeder
30	31				-								Repairing of Feeder
31	21				-								Repairing of Feeder
32	18				-								Repairing of Feeder
33	20				-								Repairing of Feeder
34	10				-								Repairing of Sensor
35	18				-								Repairing of Feeder
36	19				-								Repairing of Sensor
37	12				-								Repairing of Feeder
38	7				-								Repairing of Sensor
39	15				-								Repairing of Binder & Feeder
40	16				-								Repairing of Binder
41	32				-								Repairing of Sensor & Feeder
42	13				-								Repairing of Feeder
43	15				-								Repairing of Feeder
44	10				-								Repairing of Sensor & Feeder
45	16				-								Repairing of Feeder
46	20				-								Repairing of Sensor
47	16				-								Repairing of Feeder
48	15				-								Repairing of Sensor
49	12				-								Repairing of Feeder
50	13				-								Repairing of Sensor
					-								Repairing of Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
51	11				-								Repairing of Feeder
52	18				-								Repairing of Feeder
53	16	-			-								Repairing of Sensor & Feeder
54	34				-								Repairing of Feeder
55	10	-			-								Repairing of Feeder
56	19				-								Repairing of Sensor
57	18				-								Repairing of Feeder
58	11		-		-								Repairing of Feeder
59	18				-								Repairing of Binder
60	15	-			-								Repairing of Heater
61	20				-								Repairing of Sensor
62	23	-			-								Repairing of Feeder
63	21				-								Repairing of Sensor
64	16				-								Repairing of Feeder
65	16				-								Repairing of Feeder
66	23	-			-								Repairing of Feeder
67	17	-			-								Repairing of Sensor
68	14				-								Repairing of Sensor
69	16				-								Repairing of Feeder
70	18				-								Repairing of Binder
71	23				-								Repairing of Feeder
72	8				-								Repairing of Feeder
73	17				-								Repairing of Binder
74	24				-								Repairing of Heater
75	27				-								Repairing of Feeder
76	11				-								Repairing of Feeder
77	20				-								Repairing of Binder
					-								Repairing of Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
78	18				-								Repairing of Feeder
79	14		-					-					Repairing of Binder
80	16	-											Repairing of Sensor
81	18	-											Repairing of Sensor
82	13		-										Repairing of Binder
83	23				-								Repairing of Feeder
84	14				-								Repairing of Feeder
85	5		-										Repairing of Binder
86	10				-								Repairing of Feeder
87	21				-								Repairing of Feeder
88	18	-											Repairing of Sensor
89	18	-											Repairing of Sensor
90	28				-								Repairing of Feeder
91	22		-										Repairing of Sensor
92	10				-								Repairing of Binder & Feeder
93	16	-											Repairing of Sensor
94	13				-								Repairing of Feeder
95	22	-											Repairing of Sensor
96	21	-											Repairing of Sensor
97	18		-										Repairing of Binder
98	18	-											Repairing of Sensor
99	22	-											Repairing of Sensor & Binder
100	27				-								Repairing of Feeder

Bold Numbers : Special cases, unsuitable between failure modes and effect on product

F₁ : Failure of Sensor

F₂ : Failure of Binder

F₃ : Failure of Heater

F₄ : Failure of Feeder

F₅ : Failure of Vibrator

E₁ : Unprecised Sealing

E₂ : Leaking Package

E₃ : Lost Adhesiveness

E₄ : Uneven Amount of Product

E₅ : Empty Package

TRIAL SHEET

Shape of Product : Elliptical
 Speed of Machine : 46 packs / minute (high speed)

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
1	13	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
2	11	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Heater
3	12	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
4	11	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
5	12	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
6	12	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
7	23	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
8	20	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
9	12	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
10	14	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
11	18	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
12	26	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
13	13	-	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor
14	15	-	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
15	15	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
16	27	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
17	13	-	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
18	18	-	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
19	14	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
20	16	-	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
21	14	-	-	-	-	-	-	-	-	-	-	-	Repairing of Binder
22	17	-	-	-	-	-	-	-	-	-	-	-	Repairing of Binder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅	
23	19	-	-	-	-	-	-	-	-	-	-	Repairing of Sensor & Feeder
24	15	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
25	20	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
26	9	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
27	8	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
28	13	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
29	16	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
30	13	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
31	16	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
32	18	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
33	18	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
34	14	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
35	20	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
36	17	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
37	21	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
38	11	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
39	6	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
40	16	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
41	9	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
42	5	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
43	25	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
44	10	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
45	20	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
46	10	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
47	13	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
48	21	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
49	17	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder
50	13	-	-	-	-	-	-	-	-	-	-	Repairing of Feeder

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
51	10				-								Repairing of Feeder
52	21				-								Repairing of Feeder
53	18				-								Repairing of Sensor
54	17				-								Repairing of Feeder
55	11				-								Repairing of Binder
56	15				-								Repairing of Binder
57	9				-								Repairing of Binder
58	16				-								Repairing of Sensor & Binder
59	14				-								Repairing of Binder
60	15				-								Repairing of Feeder
61	14				-								Repairing of Feeder
62	8				-								Repairing of Feeder
63	14				-								Repairing of Feeder
64	25				-								Repairing of Feeder
65	17				-								Repairing of Binder
66	20				-								Repairing of Feeder
67	13				-								Repairing of Sensor
68	17				-								Repairing of Binder
69	14				-								Repairing of Sensor
70	14				-								Repairing of Feeder
71	13				-								Repairing of Binder
72	7				-								Repairing of Feeder
73	10				-								Repairing of Feeder
74	14				-								Repairing of Sensor
75	18				-								Repairing of Feeder
76	16				-								Repairing of Sensor
77	20				-								Repairing of Sensor

No of Failure	Time to Failure (second)	Failure Modes					Effect on Product					Action	
		F ₁	F ₂	F ₃	F ₄	F ₅	E ₁	E ₂	E ₃	E ₄	E ₅		
78	17				-								Repairing of Feeder
79	9				-								Repairing of Feeder
80	21				-								Repairing of Feeder
81	9		-										Repairing of Binder
82	7	-			-								Repairing of Sensor & Feeder
83	16	-											Repairing of Sensor
84	20		-										Repairing of Binder
85	18	-			-								Repairing of Sensor
86	25		-										Repairing of Feeder
87	23		-										Repairing of Feeder
88	26		-										Repairing of Feeder
89	25		-										Repairing of Feeder
90	28		-										Repairing of Feeder
91	11	-											Repairing of Sensor
92	15		-										Repairing of Binder
93	17		-										Repairing of Binder
94	14		-										Repairing of Feeder
95	11		-										Repairing of Feeder
96	30		-										Repairing of Feeder
97	22		-										Repairing of Sensor
98	19		-										Repairing of Feeder
99	41		-										Repairing of Feeder
100	8		-										Repairing of Binder

Bold Numbers : Special cases, unsuitable between failure modes and effect on product

F₁ : Failure of Sensor

F₂ : Failure of Binder

F₃ : Failure of Heater

F₄ : Failure of Feeder

F₅ : Failure of Vibrator

E₁ : Unprecised Sealing

E₂ : Leaking Package

E₃ : Lost Adhesiveness

E₄ : Uneven Amount of Product

E₅ : Empty Package