

Appendix D

MICROPROBE DATA

Table D.01: Representative analyses of plagioclase phenocrysts from Microprobe Analysis.

sample # description wt% oxides	EY-3 2d core	EY-3 2d rim	EY-3 2c core	EY-4A 5c rim	EY-4A 5c core	EY-4B 3c rim	EY-4B 3c core
Na ₂ O	2.68	1.84	4.43	5.46	2.14	5.68	5.97
MgO	0.33	0.08	0.06	0.06	0.09	0.02	0.04
Al ₂ O ₃	31.35	32.87	28.87	27.28	32.55	27.51	26.93
SiO ₂	49.24	47.25	52.84	55.28	47.31	55.53	56.19
K ₂ O	0.11	0.08	0.18	0.33	0.08	0.26	0.27
CaO	15.23	16.65	12.18	9.80	15.95	9.64	9.24
FeO	0.99	0.69	0.61	0.56	0.60	0.49	0.42
BaO	0.01	0.02	0.01	0.03	0.04	0.03	0.04
Totals	99.94	99.48	99.18	98.79	98.77	99.16	99.10
Cation mole %							
Na	0.24	0.17	0.39	0.48	0.19	0.50	0.53
Ng	0.02	0.01	0.00	0.00	0.01	0.00	0.00
Al	1.70	1.79	1.56	1.47	1.78	1.47	1.44
Si	2.26	2.19	2.42	2.52	2.20	2.52	2.55
K	0.01	0.00	0.01	0.02	0.01	0.02	0.02
Ca	0.75	0.83	0.60	0.48	0.80	0.47	0.45
Fe	0.04	0.03	0.02	0.02	0.02	0.02	0.02
Ba	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Albite/Anorthite							
AB	24.00	16.62	39.27	49.20	19.44	50.83	53.06
OR	0.65	0.45	1.04	1.98	0.47	1.50	1.57
AN	75.35	82.93	59.68	48.82	80.09	47.67	45.37

Table D.01 cont.: Representative analyses of plagioclase phenocrysts from Microprobe Analysis.

sample #	EY-10	EY-10	EY-10	EY-10	EY-20	EY-20	STF-3	STF-3
description	4.2 core	4.5 rim	4.5 core	4.5 core	5.4 core	5.4 rim	5.5 core	5.5 rim
wt% oxides								
Na ₂ O	1.47	4.29	2.70	3.94	3.94	5.32	1.56	2.69
MgO	0.05	0.08	0.05	0.32	0.32	0.09	0.06	0.11
Al ₂ O ₃	34.28	29.75	32.06	28.38	28.38	27.90	33.73	31.83
SiO ₂	46.17	52.28	48.88	51.95	51.95	55.03	46.27	49.29
K ₂ O	0.04	0.25	0.09	0.28	0.28	0.45	0.05	0.09
CaO	17.86	12.58	15.65	13.32	13.32	10.13	17.26	15.23
FeO	0.57	0.80	0.74	0.96	0.96	0.55	0.63	0.65
BaO	0.00	0.00	0.01	0.05	0.05	0.05	0.02	0.04
Totals	100.44	100.02	100.17	99.20	99.20	99.53	99.57	99.93
Cation mole %								
Na	0.13	0.38	0.24	0.35	0.35	0.47	0.14	0.24
Ng	0.00	0.01	0.00	0.02	0.02	0.01	0.00	0.01
Al	1.86	1.60	1.73	1.54	1.54	1.49	1.84	1.72
Si	2.12	2.38	2.24	2.39	2.39	2.50	2.14	2.26
K	0.00	0.02	0.01	0.02	0.02	0.03	0.00	0.01
Ca	0.88	0.61	0.77	0.66	0.66	0.49	0.86	0.75
Fe	0.02	0.03	0.03	0.04	0.04	0.02	0.02	0.03
Ba	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Albite/Anorthite								
AB	12.95	37.58	23.64	34.30	34.30	47.42	14.01	24.12
OR	0.25	1.46	0.51	1.58	1.58	2.63	0.28	0.55
AN	86.81	60.96	75.85	64.12	64.12	49.95	85.72	75.33

Figure D.01 (a-f):

Microprobe transects of plagioclase phenocrysts. Each graph contains all the plagioclase crystals probed from one sample. Each symbol represents one different crystal. Each transect runs from the rim, across the core, to the other rim through equidistant increments (equidistant relative to one phenocryst only). In general the number of points corresponds to the size of the crystal (more points = large phenocrysts). Missing data points represent crosses over inclusions.

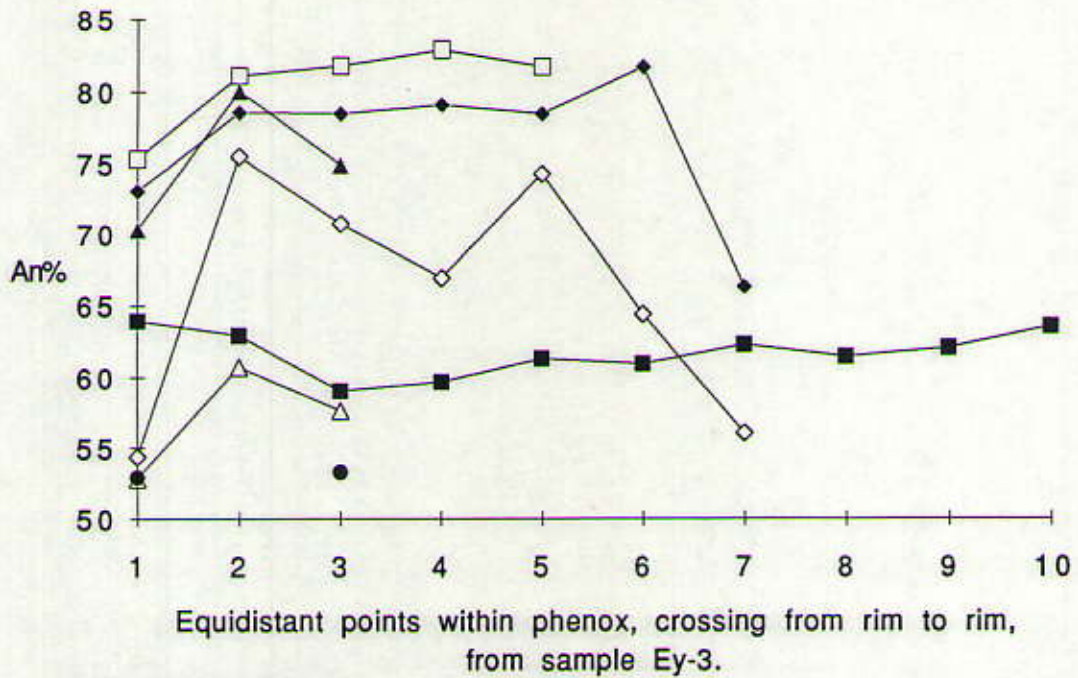


Figure D.01(a)

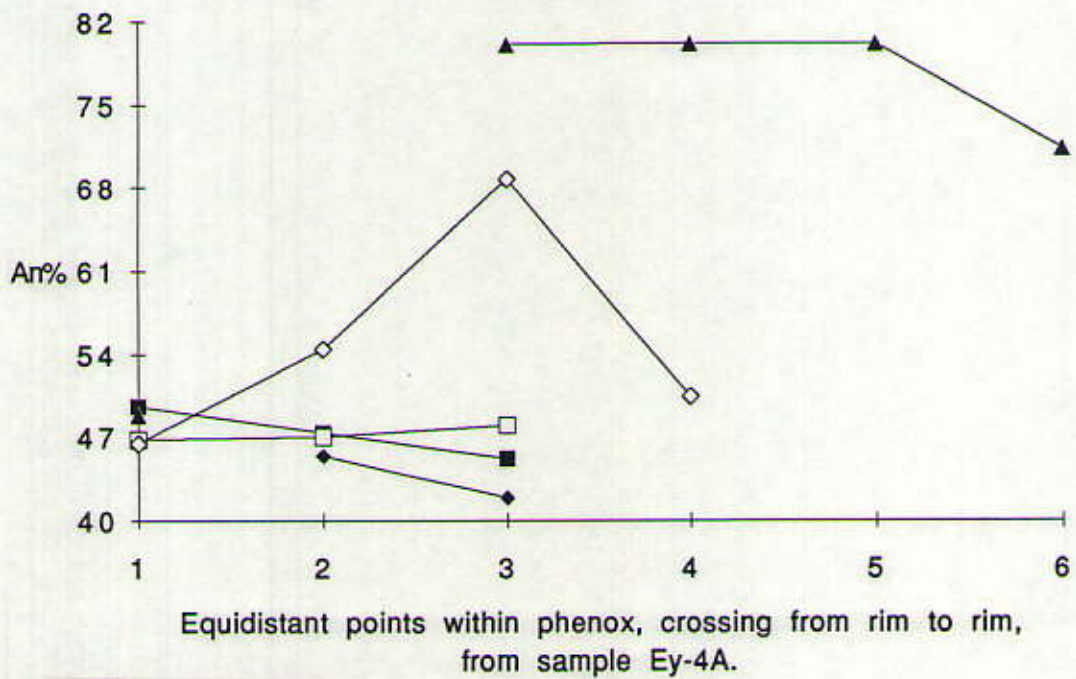
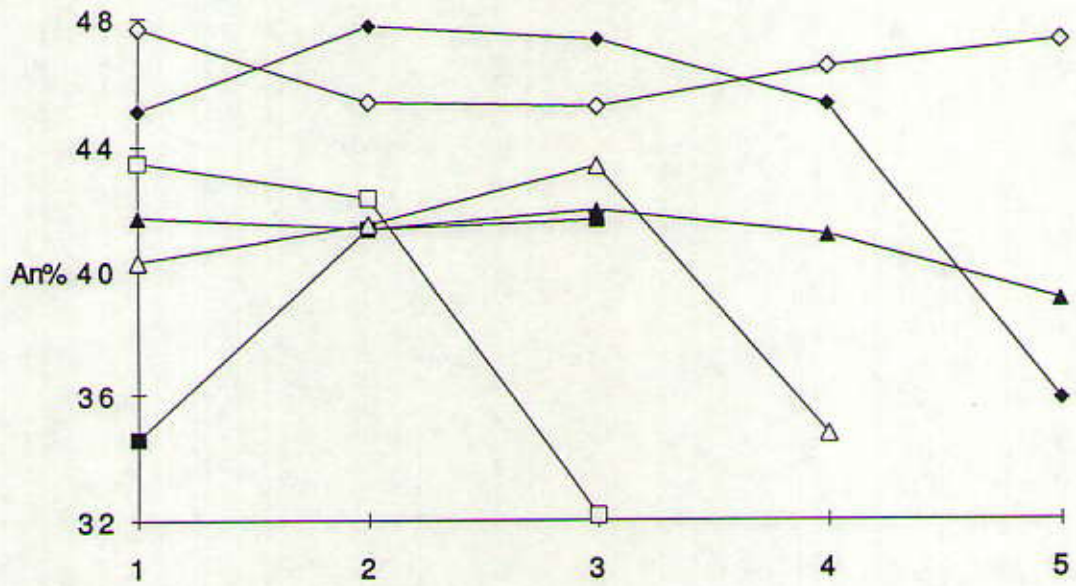
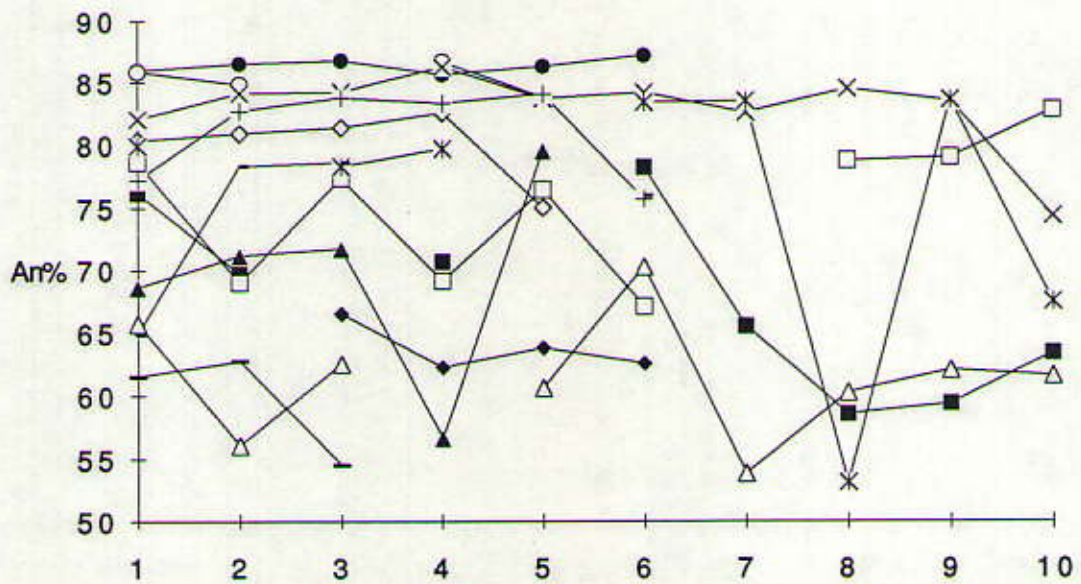


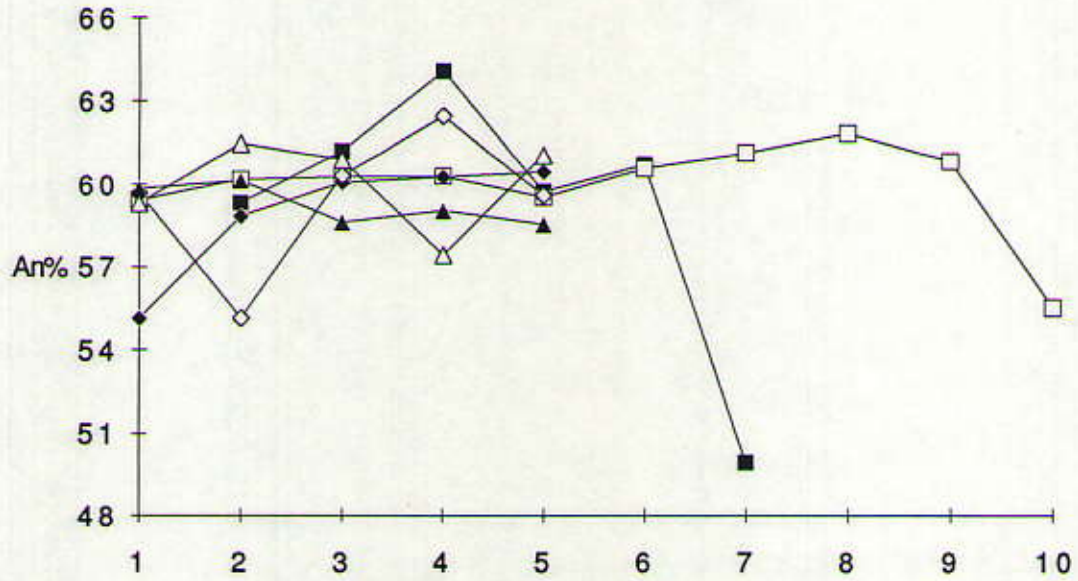
Figure D.01(b)



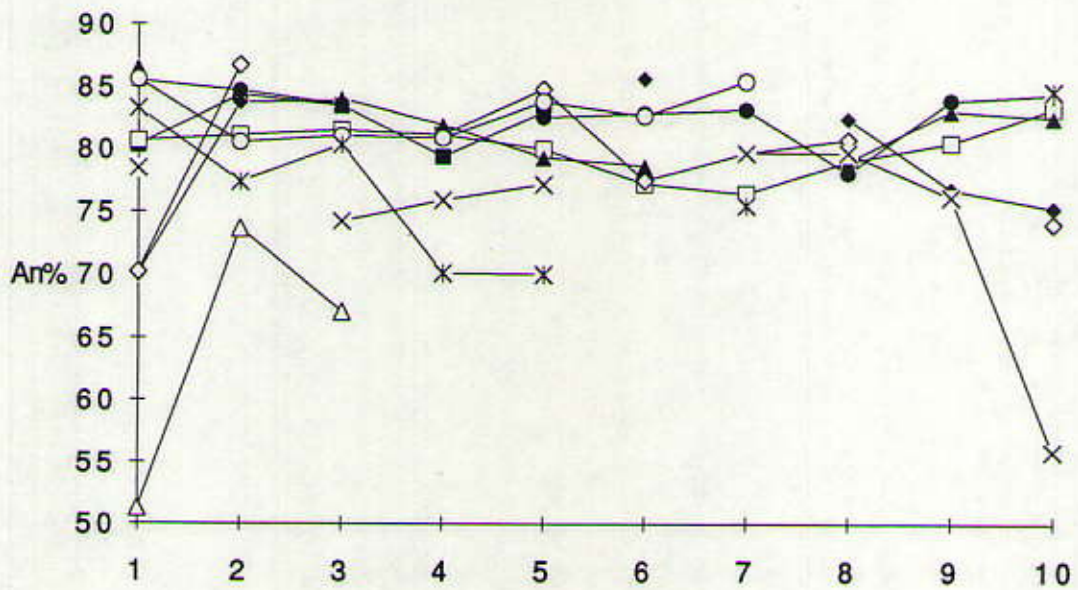
Equidistant points within phenox, crossing from rim to rim,
 from sample Ey-4B.
Figure D.01(c)



Equidistant points within each phenox, crossing from rim to rim,
 from sample Ey-10.
Figure D.01(d)



Equidistant points across phenocryst from rim to rim, from
Figure D.01(e) sample Ey-20.



Equidistant points within phenox, crossing from rim to rim,
Figure D.01(f) from sample STF-3.

Table D.02: Representative analyses of olivine phenocrysts from Microprobe Analysis.

sample # description	Ey-1 4.1 core	Ey-1 4.1 rim	Ey-1 1.6 core	Ey-1 1.6 rim	Ey-3 1a core	Ey-3 1a rim
Weight %						
MgO	45.02	29.16	32.41	30.31	43.14	29.43
Al ₂ O ₃	0.01	0.02	0.02	0.01	0.02	0.09
SiO ₂	38.66	35.39	35.49	35.30	38.59	35.49
CaO	0.25	0.34	0.32	0.28	0.26	0.41
MnO	0.15	0.54	0.48	0.49	0.18	0.44
NiO	0.07	0.04	0.06	0.08	0.14	0.05
FeO	15.39	34.34	29.18	32.76	16.61	32.38
Totals	99.56	99.84	97.96	99.23	98.94	98.28
Cation mole %						
Mg	1.70	1.21	1.34	1.26	1.65	1.23
Al	0.00	0.00	0.00	0.00	0.00	0.00
Si	0.98	0.98	0.98	0.98	0.99	0.99
Ca	0.01	0.01	0.01	0.01	0.01	0.01
Mn	0.00	0.01	0.01	0.01	0.00	0.01
Ni	0.00	0.00	0.00	0.00	0.00	0.00
Fe	0.33	0.80	0.68	0.76	0.36	0.76
Forsterite/Fayalite						
Fo	84.06	60.14	66.39	62.15	82.36	61.89
Fa	16.13	39.73	33.53	37.69	17.80	38.20

Table D.02 cont.: Representative analyses of olivine phenocrysts from Microprobe Analysis.

sample # description	Ey-10 2.6 core	Ey-10 4.9 core	Ey-10 2.7 core	Ey-17 5.2b core	Ey-17 5.2b rim	Ey-17 1.2 core	Ey-17 1.2 rim
Weight %							
MgO	42.79	45.26	39.04	47.37	44.58	44.17	44.29
Al ₂ O ₃	0.03	0.03	0.03	0.08	0.13	0.08	0.07
SiO ₂	39.03	40.12	38.26	39.47	38.53	39.14	39.06
CaO	0.32	0.34	0.30	0.22	0.35	0.28	0.34
MnO	0.26	0.15	0.32	0.12	0.18	0.24	0.28
NiO	0.12	0.17	0.09	0.39	0.27	0.20	0.24
FeO	18.20	14.73	22.75	10.25	13.82	14.14	14.52
Totals	100.76	100.80	100.79	98.18	98.12	98.31	98.83
Cation mole %							
Mg	1.62	1.68	1.51	1.78	1.70	1.68	1.68
Al	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Si	0.99	1.00	0.99	0.99	0.99	1.00	0.99
Ca	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mn	0.01	0.00	0.01	0.00	0.00	0.01	0.01
Ni	0.00	0.00	0.00	0.01	0.01	0.00	0.01
Fe	0.39	0.31	0.49	0.22	0.30	0.30	0.31
Forsterite/Fayalite							
Fo	80.86	84.82	75.42	89.32	85.43	84.88	84.60
Fa	19.30	15.48	24.66	10.85	14.86	15.25	15.56

Table D.02 cont.: Representative analyses of olivine phenocrysts from Microprobe Analysis.

sample # description	Ey-17		Ey-17		Ey-20		Ey-20		STF-3		STF-3	
	4.1 core	4.1 rim	4.1 core	4.1 rim	5.1 core	5.1 rim	5.1 core	5.1 rim	5.4 core	5.4 rim	5.4 core	5.4 rim
Weight %												
MgO	42.19	44.27	40.15	44.27	36.94	36.94	49.14	49.14	32.10	32.10	49.14	49.14
Al ₂ O ₃	0.11	0.09	0.03	0.09	0.03	0.03	0.32	0.32	0.00	0.00	0.32	0.32
SiO ₂	38.20	38.53	37.92	38.53	37.10	37.10	36.85	36.85	36.31	36.31	36.85	36.85
CaO	0.32	0.33	0.30	0.33	0.30	0.30	0.47	0.47	0.39	0.39	0.47	0.47
MnO	0.24	0.25	0.37	0.25	0.36	0.36	0.17	0.17	0.56	0.56	0.17	0.17
NiO	0.16	0.17	0.10	0.17	0.12	0.12	0.21	0.21	0.07	0.07	0.21	0.21
FeO	17.20	14.55	20.70	14.55	24.94	24.94	12.78	12.78	30.02	30.02	12.78	12.78
Totals	98.62	98.42	99.57	98.42	99.80	99.80	99.94	99.94	99.45	99.45	99.94	99.94
Cation mole %												
Mg	1.63	1.69	1.56	1.69	1.46	1.46	1.84	1.84	1.31	1.31	1.84	1.84
Al	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01
Si	0.99	0.99	0.99	0.99	0.98	0.98	0.93	0.93	0.99	0.99	0.93	0.93
Ca	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mn	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fe	0.37	0.31	0.45	0.31	0.55	0.55	0.27	0.27	0.69	0.69	0.27	0.27
Forsterite/Fayalite												
Fo	81.53	84.59	77.57	84.59	77.57	77.57	87.64	87.64	65.54	65.54	87.64	87.64
Fa	18.65	15.60	22.43	15.60	22.43	22.43	12.79	12.79	34.39	34.39	12.79	12.79

Figure D.02 (a-g):

Microprobe transects of olivine phenocrysts. Each graph contains all the olivine crystals probed from one sample. Each symbol represents one different crystal. Each transect runs from the rim, across the core, to the other rim through equidistant increments (equidistant relative to one phenocryst only). In general the number of points corresponds to the size of the crystal (more points = large phenocrysts). Missing data points represent crosses over inclusions.

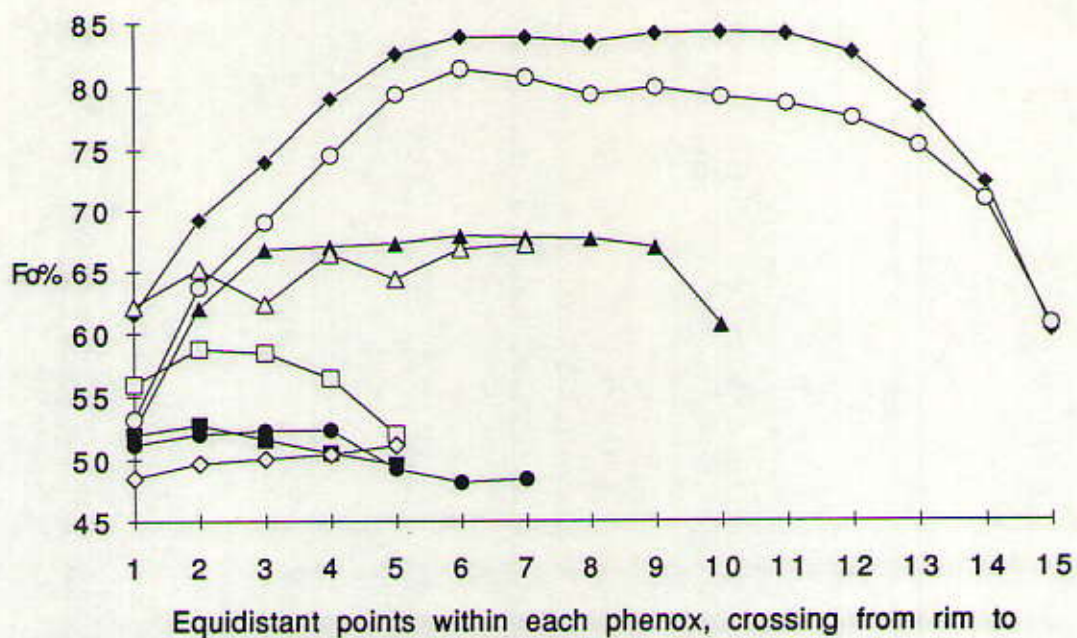


Figure D.02(a)

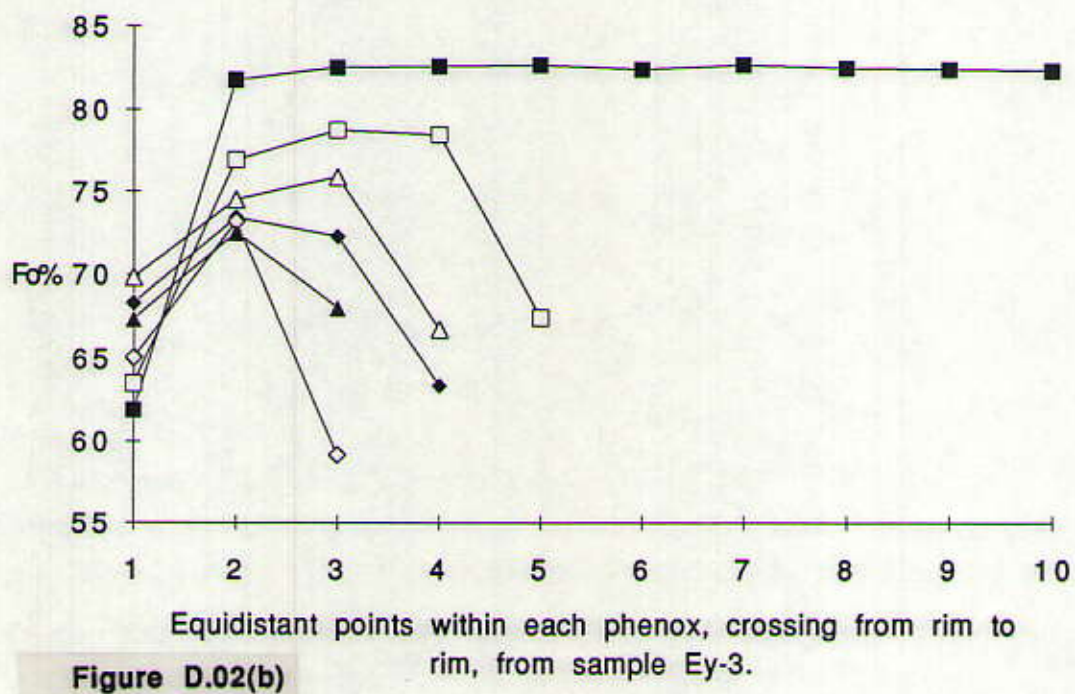
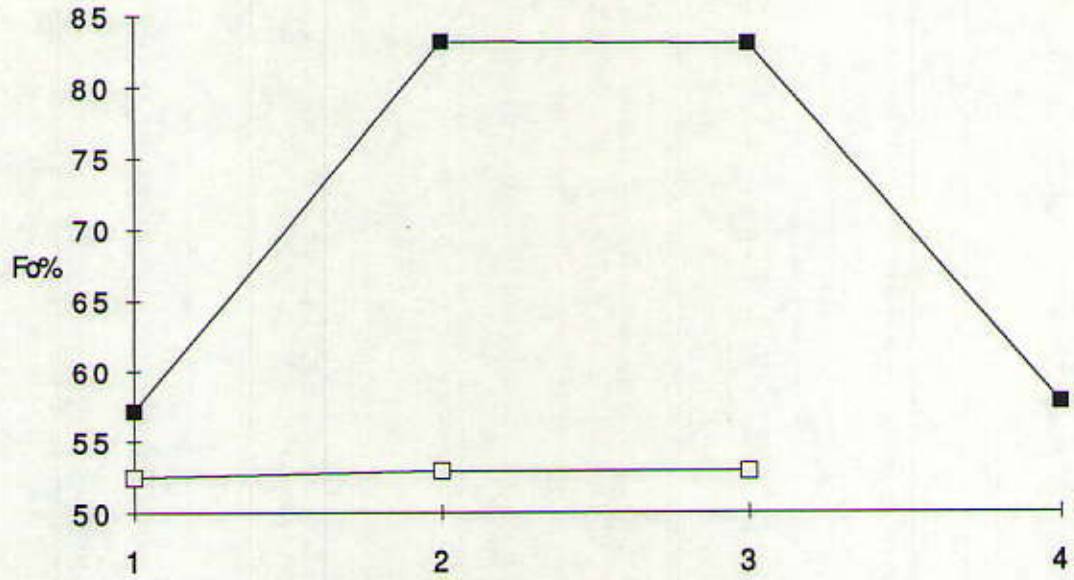
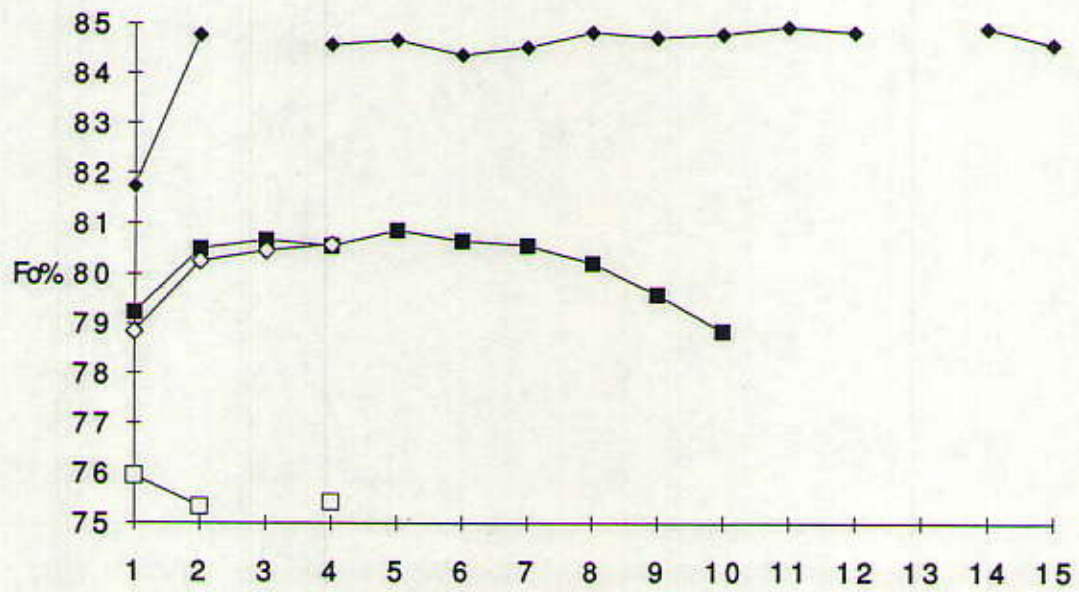


Figure D.02(b)



Equidistant points within each phenox, crossing from rim to rim, from sample Ey-4A.
Figure D.02(c)



Equidistant points within each phenox, crossing from rim to rim, from sample Ey-10.
Figure D.02(d)

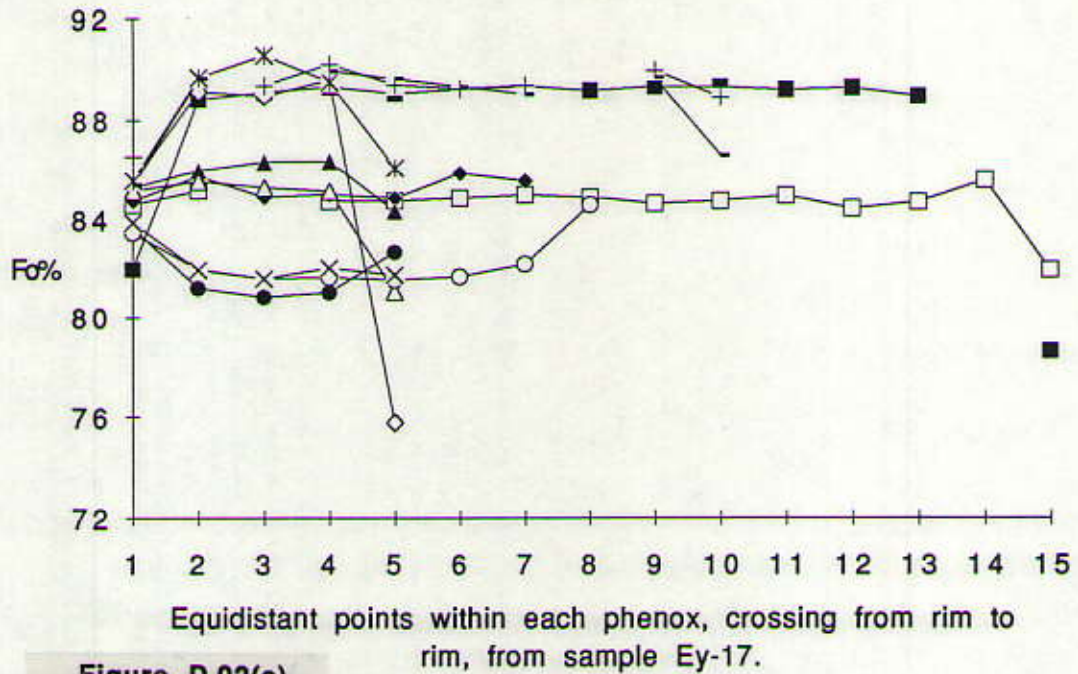


Figure D.02(e)

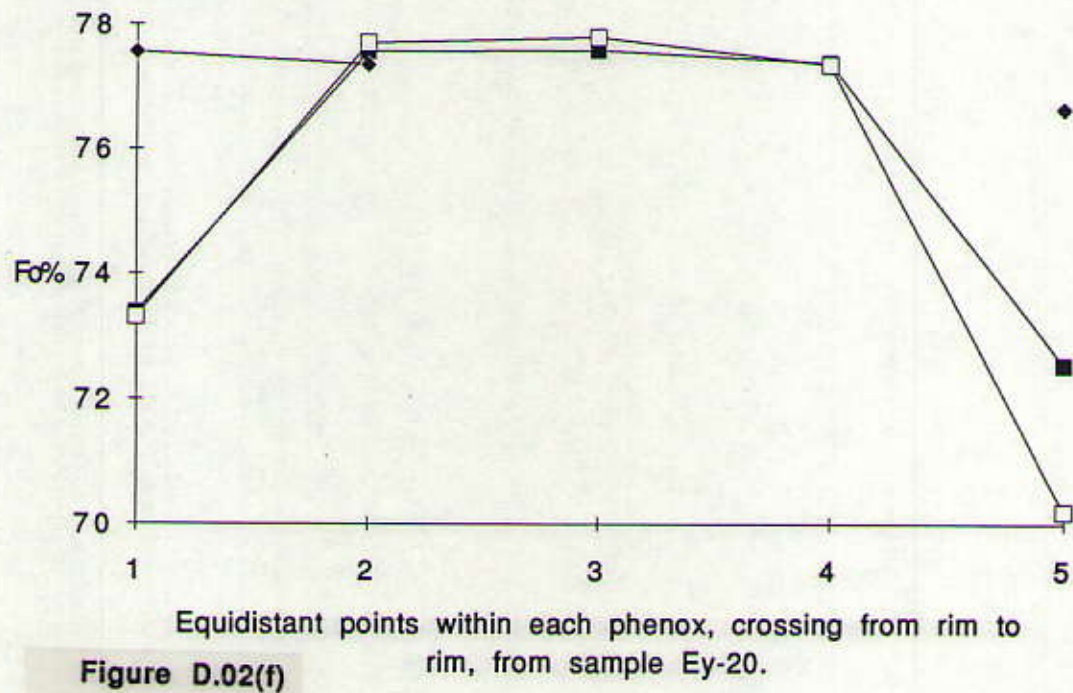
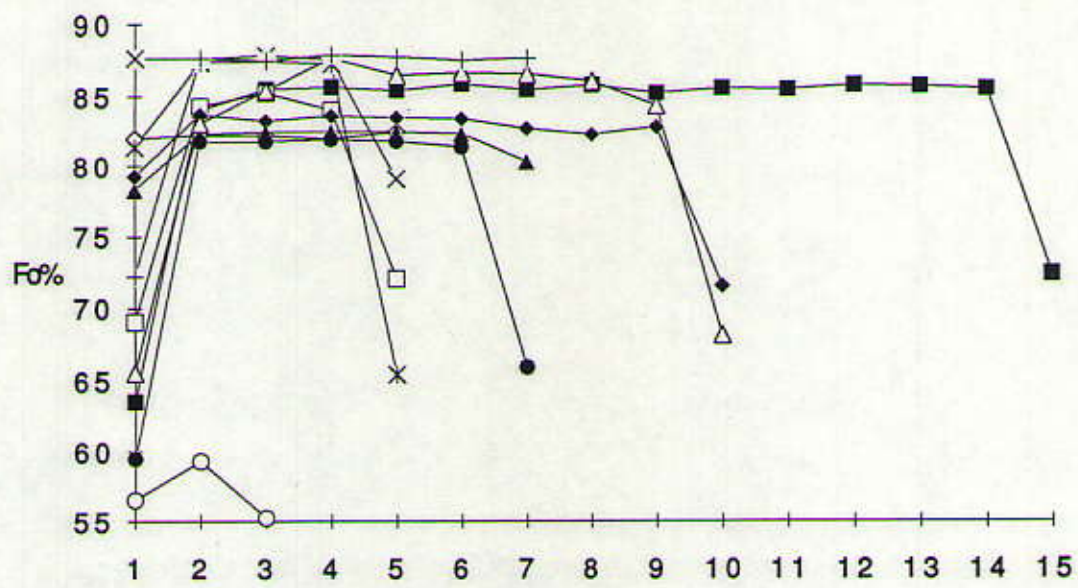


Figure D.02(f)



Equidistant points within each phenox, crossing from rim to rim, from sample STF-3.

Figure D.02(g)