**data** Factor;

input ECO EMERG FLOW HEIGHT NOD INFLOR STEMP STEMM SEED DM LEAF STEM CP CF DMY ASH ;

cards;

1 11.5 60.75 67.233 8.2675 3.6 3.2075 76.88 21.953 24.825 82 18 21.3858 17.6058 2614 7.516

2 13.5 60.25 70.935 8.2925 4.2 3.1125 78.2 23.055 25.764 78.892 21.1 22.3192 17.2625 2576.9 7.183

3 12 63.5 65.28 8.2075 3.8125 2.1675 65.25 20.225 26.363 82.033 17.967 21.4808 16.9542 3059.2 7.358

4 10.5 62.5 69.34 8.25 4.17 2.34 68.45 21.995 24.375 85.092 15.408 22.0483 17.0633 2668.5 7.675

5 10.75 62.5 71.8 7.75 3.22 2.84 75.03 21.215 25.238 82.325 17.675 23.2725 16.9183 2828.2 7.625

6 11 61.25 65.178 8.615 3.43 2.6725 73.53 20 24.385 78.367 21.717 21.8442 16.1958 2510 7.633

7 10.75 61.25 58.8 7.2675 3.075 2.15 64.53 21.698 24.99 83.758 16.325 23.2258 17.3225 2622.8 7.566

8 11.5 63.25 60.663 6.5625 2.9375 2.43 45.93 19.82 23.641 79.175 20.825 22.7467 16.89 2863.3 7.725

9 12 62.5 66.87 7.52 3.645 2.3275 55.3 22.325 25.812 77.333 22.667 23.6842 16.8575 3136.4 7.466

10 10.5 60.5 65.183 8.035 3.77 2.705 71.8 21.325 23.274 80.592 19.408 20.8683 18.0992 2959 7.25

**proc** **factor** rotate=varimax plot ;

var FLOW HEIGHT NOD LEAF STEM CP CF DMY ASH ;

**run**;

The FACTOR Procedure

Initial Factor Method: Principal Components

Prior Communality Estimates: ONE

Eigenvalues of the Correlation Matrix: Total = 9 Average = 1

Eigenvalue Difference Proportion Cumulative

1 2.83688917 0.57366646 0.3152 0.3152

2 2.26322271 0.72673441 0.2515 0.5667

3 1.53648830 0.34040630 0.1707 0.7374

4 1.19608200 0.42712110 0.1329 0.8703

5 0.76896090 0.49201640 0.0854 0.9557

6 0.27694451 0.16267174 0.0308 0.9865

7 0.11427277 0.10804968 0.0127 0.9992

8 0.00622308 0.00530653 0.0007 0.9999

9 0.00091656 0.0001 1.0000

4 factors will be retained by the MINEIGEN criterion.

Factor Pattern

Factor1 Factor2 Factor3 Factor4

FLOW 0.75270 0.24693 -0.06021 0.53268

HEIGHT -0.40369 -0.16581 0.40459 0.64339

NOD -0.75651 -0.11075 0.47109 0.30911

LEAF -0.23760 0.95368 -0.05693 0.13340

STEM 0.24149 -0.95047 0.08140 -0.12849

CP 0.72562 -0.02215 0.12709 -0.05544

CF -0.58942 0.15179 -0.72393 -0.12023

DMY 0.38526 -0.25351 -0.65020 0.57261

ASH 0.63080 0.51165 0.41760 -0.15201

Variance Explained by Each Factor

Factor1 Factor2 Factor3 Factor4

2.8368892 2.2632227 1.5364883 1.1960820

Final Communality Estimates: Total = 7.832682

FLOW HEIGHT NOD LEAF STEM

0.91491244 0.76810907 0.90204968 0.98699462 0.98485053

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The FACTOR Procedure

Initial Factor Method: Principal Components

CP CF DMY ASH

0.54624524 0.90898715 0.96333245 0.85720101

The FACTOR Procedure

Rotation Method: Varimax

Orthogonal Transformation Matrix

1 2 3 4

1 0.73190 -0.18007 -0.49728 0.42966

2 0.17366 0.96794 -0.16329 -0.07914

3 0.65375 -0.07542 0.51460 -0.54965

4 0.08231 0.15802 0.67915 0.71205

Rotated Factor Pattern

Factor1 Factor2 Factor3 Factor4

FLOW 0.59827 0.19220 -0.08384 0.71626

HEIGHT -0.00680 -0.01665 0.87298 0.07541

NOD -0.23951 0.04234 0.84663 -0.35511

LEAF -0.03452 0.99127 0.02373 -0.05128

STEM 0.05433 -0.98993 -0.01026 0.04275

CP 0.60576 -0.17045 -0.32947 0.20419

CF -0.88820 0.28867 -0.18586 0.04703

DMY -0.13999 -0.17523 -0.09588 0.95070

ASH 0.81104 0.32614 -0.28557 -0.10724

Variance Explained by Each Factor

Factor1 Factor2 Factor3 Factor4

2.2527004 2.2510429 1.7204232 1.6085156

Final Communality Estimates: Total = 7.832682

FLOW HEIGHT NOD LEAF STEM

0.91491244 0.76810907 0.90204968 0.98699462 0.98485053

CP CF DMY ASH

0.54624524 0.90898715 0.96333245 0.85720101

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The FACTOR Procedure

Rotation Method: Varimax

Plot of Factor Pattern for Factor1 and Factor2

Factor1

1

.9

.8 I

.7

F .6 A

.5

.4

.3

.2

F

.1 a

E c

-1 -.9-.8-.7-.6-.5-.4-.3-.2-.1 B0 .1 .2 .3 .4 .5 .6 .7 .8 .9 1.0t

D o

-.1 r

H 2

-.2

C

-.3

-.4

-.5

-.6

-.7

-.8

-.9 G

-1

FLOW=A HEIGHT=B NOD=C LEAF=D STEM=E CP=F CF=G

DMY=H ASH=I