**What did the check plots yield? Value of yield goals?**

**Abstract**

In long-term experiments, grain yields of the check plot (no N applied) can reveal added information about the environment when studied alone. The objective of this work was to further evaluate check plot yields and how they changed over time. Furthermore, changes in check plot yields were expected to provide a better understanding of fertilizer N response and yield potential. Two long-term experiments, were targeted for added analysis, Experiment 222 near Stillwater, OK, and Experiment 502, just west of Lahoma, OK. Check plots had the same variability over years as did the nitrogen (N) fertilized plots, with CV’s for both near 30%. Means and standard deviations (Experiment 502) were 1.76 ±0.53 and 2.95±0.92 Mg/ha for check and N fertilized plots, respectively.

Can the check plot be used to predict the yield goal?

This discussion is a reminder that fertilizer N rates have historically been based on the expected grain yield, and that yield goals have been a starting point to determine that level. Nonetheless it is important to note that differing N rates at the same level of wheat grain yield have been reported (Arnall et al., 2009).

Objectives:

1. To evaluate the prediction of yield using NDVI collected at the Feekes 5 growth stage
2. To compare fertilizer N rate from SBNRC to the optimum rate identified from yield

Yield prediction using yield goal, vs. yield prediction using SBNRC

From 502

1. YP0 SBNRC
2. YPN SBNRC
3. Optimum N rate (using data)
4. N Rate prediction using SBNRC

***Rationale***

Field experiments are often conducted over several years and locations, without focusing on single treatment performance in the combined analysis.

***Objectives***

The objectives of this work were to evaluate specific changes in check (zero N applied) plot yields over time, and to use these changes for possibly predicting response.

***Materials and Methods***

Two long-term experiments were evaluated

***Results***

For experiment 502, check plot mean values ranged from 0.75 to 2.84 Mg/ha. However, the standard deviation about those mean values were less variable suggesting that experimental methods were controlled and consistent while the environmental influence on mean yields had a measured influence.

A benchmark maize yield goal was established by George Rehm at the University of Minnesota stating that it should be the recent average over the last 3-5 years, and an increase above that average of around 10 to 20% (Rehm and Schmitt (1989). Schmitt et al. (2008) advanced this work recommending that late fall or spring preplant soil NO3-N be subtracted from the recommended N fertilizer rate derived from a realistic yield goal. Because many states continue to employ the use of yield goals, (Zhang, 2006, Dahnke et al., 1988), employing a substitute for yield goals, like mid-season yield prediction, is prudent considering potential adoption by producers.

***References***

Dahnke, W.C., Swenson, L.J., Goos, R.J., and Leholm, A.G. (1988) SF-822. In Choosing a Crop Yield Goal; North Dakota State Extension Service: Fargo, North Dakota.

Rehm, George and Michael Schmitt. 1989. Setting realistic crop yield goals. Minnesota Extension Service. Univ. of Minnesota. AG-FS-3873.

Schmitt, M. A., G.W. Randall, and G.W. Rehm. 2008. A soil nitrogen test option for N recommendations with corn. WW-06514-GO, Univ. Minnesota.

Zhang, H., and B. Raun. 2006. Oklahoma soil fertility handbook, 6th edition. Okla. Agric. Exp. Sta. Stillwater, OK.

**data** one;

input yr rep trt buac;

cards;

1971 1 1 31.4

1971 1 2 34

1971 1 3 37.8

1971 1 4 27.8

1971 1 5 35.8

1971 1 6 32.4

1971 1 7 35.2

1971 1 8 28.7

1971 1 9 30.2

1971 1 10 30.2

1971 1 11 35.2

1971 1 12 40.5

1971 1 13 42.2

1971 1 14 31.9

1971 2 1 33.4

1971 2 2 36

1971 2 3 33.3

1971 2 4 35.4

1971 2 5 32.4

1971 2 6 37

1971 2 7 38.1

1971 2 8 29.2

1971 2 9 33.1

1971 2 10 37.8

1971 2 11 39.5

1971 2 12 38.3

1971 2 13 34.8

1971 2 14 38

1971 3 1 35.5

1971 3 2 37.6

1971 3 3 36.6

1971 3 4 39.3

1971 3 5 37.6

1971 3 6 33.7

1971 3 7 36.2

1971 3 8 34.3

1971 3 9 36.1

1971 3 10 37.8

1971 3 11 39.3

1971 3 12 36.6

1971 3 13 41.1

1971 3 14 36.3

1971 4 1 34.5

1971 4 2 39.3

1971 4 3 35.1

1971 4 4 39.6

1971 4 5 35.1

1971 4 6 38.6

1971 4 7 40.2

1971 4 8 30.8

1971 4 9 28

1971 4 10 36.4

1971 4 11 29.8

1971 4 12 40.2

1971 4 13 34.8

1971 4 14 31

1972 1 1 29.64

1972 1 2 28.31

1972 1 3 30.98

1972 1 4 28.31

1972 1 5 30.85

1972 1 6 24.2

1972 1 7 25.05

1972 1 8 28.43

1972 1 9 26.86

1972 1 10 29.04

1972 1 11 27.95

1972 1 12 29.89

1972 1 13 24.2

1972 1 14 26.62

1972 2 1 29.52

1972 2 2 27.1

1972 2 3 28.43

1972 2 4 26.01

1972 2 5 26.14

1972 2 6 21.05

1972 2 7 22.99

1972 2 8 28.31

1972 2 9 21.78

1972 2 10 23.59

1972 2 11 24.2

1972 2 12 24.32

1972 2 13 21.3

1972 2 14 23.84

1972 3 1 25.41

1972 3 2 27.83

1972 3 3 27.83

1972 3 4 23.35

1972 3 5 22.51

1972 3 6 24.8

1972 3 7 21.05

1972 3 8 28.19

1972 3 9 20.69

1972 3 10 25.53

1972 3 11 24.2

1972 3 12 21.54

1972 3 13 21.3

1972 3 14 23.47

1972 4 1 27.35

1972 4 2 28.56

1972 4 3 22.99

1972 4 4 23.84

1972 4 5 20.57

1972 4 6 22.14

1972 4 7 18.27

1972 4 8 24.68

1972 4 9 32.67

1972 4 10 24.44

1972 4 11 31.94

1972 4 12 23.72

1972 4 13 18.51

1972 4 14 27.83

1974 1 1 15.972

1974 1 2 18.15

1974 1 3 27.225

1974 1 4 35.574

1974 1 5 33.759

1974 1 6 35.332

1974 1 7 30.976

1974 1 8 26.378

1974 1 9 29.524

1974 1 10 37.873

1974 1 11 35.695

1974 1 12 34.485

1974 1 13 35.211

1974 1 14 33.396

1974 2 1 13.673

1974 2 2 14.399

1974 2 3 23.716

1974 2 4 30.613

1974 2 5 32.186

1974 2 6 28.798

1974 2 7 25.773

1974 2 8 22.748

1974 2 9 34.122

1974 2 10 31.823

1974 2 11 35.453

1974 2 12 31.218

1974 2 13 29.161

1974 2 14 33.759

1974 3 1 18.997

1974 3 2 15.851

1974 3 3 24.079

1974 3 4 34.848

1974 3 5 28.677

1974 3 6 28.677

1974 3 7 26.257

1974 3 8 22.748

1974 3 9 30.008

1974 3 10 35.695

1974 3 11 30.855

1974 3 12 26.862

1974 3 13 25.047

1974 3 14 30.25

1974 4 1 19.602

1974 4 2 17.787

1974 4 3 33.154

1974 4 4 29.403

1974 4 5 26.62

1974 4 6 25.773

1974 4 7 28.193

1974 4 8 25.047

1974 4 9 33.638

1974 4 10 29.524

1974 4 11 35.09

1974 4 12 30.734

1974 4 13 27.104

1974 4 14 30.371

1975 1 1 23.353

1975 1 2 24.442

1975 1 3 33.033

1975 1 4 34.969

1975 1 5 41.624

1975 1 6 53.119

1975 1 7 47.553

1975 1 8 49.368

1975 1 9 43.681

1975 1 10 42.592

1975 1 11 49.005

1975 1 12 45.254

1975 1 13 52.151

1975 1 14 46.706

1975 2 1 27.104

1975 2 2 26.136

1975 2 3 31.46

1975 2 4 43.318

1975 2 5 46.706

1975 2 6 52.393

1975 2 7 52.514

1975 2 8 50.82

1975 2 9 45.375

1975 2 10 46.101

1975 2 11 43.802

1975 2 12 49.005

1975 2 13 48.4

1975 2 14 45.859

1975 3 1 31.218

1975 3 2 26.741

1975 3 3 34.122

1975 3 4 38.478

1975 3 5 48.763

1975 3 6 45.98

1975 3 7 49.852

1975 3 8 54.087

1975 3 9 36.663

1975 3 10 47.069

1975 3 11 46.827

1975 3 12 46.948

1975 3 13 44.649

1975 3 14 45.012

1975 4 1 33.517

1975 4 2 30.129

1975 4 3 40.898

1975 4 4 42.108

1975 4 5 50.336

1975 4 6 53.603

1975 4 7 52.272

1975 4 8 50.457

1975 4 9 49.731

1975 4 10 45.133

1975 4 11 47.674

1975 4 12 47.553

1975 4 13 49.731

1975 4 14 54.087

1976 1 1 21.78

1976 1 2 19.239

1976 1 3 24.805

1976 1 4 29.04

1976 1 5 39.809

1976 1 6 40.898

1976 1 7 47.916

1976 1 8 34.606

1976 1 9 37.026

1976 1 10 37.873

1976 1 11 42.108

1976 1 12 36.905

1976 1 13 46.343

1976 1 14 40.293

1976 2 1 23.474

1976 2 2 24.805

1976 2 3 25.289

1976 2 4 32.065

1976 2 5 41.261

1976 2 6 46.464

1976 2 7 48.884

1976 2 8 35.695

1976 2 9 42.35

1976 2 10 39.809

1976 2 11 39.446

1976 2 12 44.891

1976 2 13 47.916

1976 2 14 45.012

1976 3 1 26.136

1976 3 2 24.2

1976 3 3 29.887

1976 3 4 35.816

1976 3 5 38.357

1976 3 6 45.738

1976 3 7 45.738

1976 3 8 44.891

1976 3 9 38.115

1976 3 10 40.777

1976 3 11 39.083

1976 3 12 36.3

1976 3 13 44.407

1976 3 14 39.083

1976 4 1 30.371

1976 4 2 24.805

1976 4 3 30.008

1976 4 4 31.339

1976 4 5 41.019

1976 4 6 45.254

1976 4 7 44.407

1976 4 8 44.649

1976 4 9 40.535

1976 4 10 33.154

1976 4 11 36.542

1976 4 12 38.841

1976 4 13 45.617

1976 4 14 47.674

1977 1 1 14.883

1977 1 2 14.641

1977 1 3 26.983

1977 1 4 26.862

1977 1 5 30.25

1977 1 6 29.04

1977 1 7 26.015

1977 1 8 21.054

1977 1 9 30.734

1977 1 10 34.122

1977 1 11 32.428

1977 1 12 30.008

1977 1 13 26.257

1977 1 14 31.702

1977 2 1 13.552

1977 2 2 16.819

1977 2 3 23.837

1977 2 4 26.015

1977 2 5 28.435

1977 2 6 31.46

1977 2 7 32.307

1977 2 8 23.837

1977 2 9 31.097

1977 2 10 30.008

1977 2 11 32.307

1977 2 12 32.791

1977 2 13 31.097

1977 2 14 37.026

1977 3 1 12.221

1977 3 2 15.972

1977 3 3 28.677

1977 3 4 30.25

1977 3 5 26.862

1977 3 6 30.371

1977 3 7 29.524

1977 3 8 28.919

1977 3 9 32.065

1977 3 10 31.46

1977 3 11 31.944

1977 3 12 29.161

1977 3 13 25.047

1977 3 14 32.912

1977 4 1 21.78

1977 4 2 20.449

1977 4 3 27.951

1977 4 4 29.403

1977 4 5 29.403

1977 4 6 27.104

1977 4 7 27.467

1977 4 8 30.492

1977 4 9 33.154

1977 4 10 27.104

1977 4 11 35.937

1977 4 12 28.314

1977 4 13 21.175

1977 4 14 36.905

1978 1 1 19.844

1978 1 2 18.271

1978 1 3 21.538

1978 1 4 30.734

1978 1 5 39.083

1978 1 6 42.955

1978 1 7 42.471

1978 1 8 31.702

1978 1 9 37.873

1978 1 10 42.108

1978 1 11 38.357

1978 1 12 39.567

1978 1 13 44.77

1978 1 14 35.695

1978 2 1 19.239

1978 2 2 21.296

1978 2 3 24.684

1978 2 4 34.243

1978 2 5 38.962

1978 2 6 44.165

1978 2 7 50.699

1978 2 8 36.421

1978 2 9 42.229

1978 2 10 42.35

1978 2 11 39.688

1978 2 12 43.802

1978 2 13 51.304

1978 2 14 37.752

1978 3 1 20.328

1978 3 2 21.659

1978 3 3 27.467

1978 3 4 34.485

1978 3 5 36.542

1978 3 6 45.496

1978 3 7 14.52

1978 3 8 40.172

1978 3 9 21.175

1978 3 10 37.389

1978 3 11 38.478

1978 3 12 38.115

1978 3 13 45.859

1978 3 14 39.325

1978 4 1 23.474

1978 4 2 21.659

1978 4 3 31.46

1978 4 4 35.09

1978 4 5 44.165

1978 4 6 44.77

1978 4 7 46.585

1978 4 8 41.382

1978 4 9 38.236

1978 4 10 36.663

1978 4 11 41.624

1978 4 12 39.567

1978 4 13 47.674

1978 4 14 42.35

1979 1 1 38.22

1979 1 2 25.48

1979 1 3 43.68

1979 1 4 29.48

1979 1 5 29.12

1979 1 6 45.5

1979 1 7 31.85

1979 1 8 37.49

1979 1 9 47.32

1979 1 10 21.48

1979 1 11 19.66

1979 1 12 27.12

1979 1 13 50.96

1979 1 14 44.59

1979 2 1 45.68

1979 2 2 41.68

1979 2 3 45.5

1979 2 4 47.32

1979 2 5 42.41

1979 2 6 41.13

1979 2 7 40.4

1979 2 8 40.4

1979 2 9 47.32

1979 2 10 45.5

1979 2 11 46.41

1979 2 12 32.76

1979 2 13 22.2

1979 2 14 42.77

1979 3 1 38.4

1979 3 2 42.04

1979 3 3 43.13

1979 3 4 44.95

1979 3 5 40.22

1979 3 6 38.22

1979 3 7 43.13

1979 3 8 18.38

1979 3 9 43.86

1979 3 10 41.68

1979 3 11 43.13

1979 3 12 23.84

1979 3 13 41.31

1979 3 14 51.87

1979 4 1 46.41

1979 4 2 41.5

1979 4 3 46.41

1979 4 4 21.48

1979 4 5 41.68

1979 4 6 43.86

1979 4 7 42.95

1979 4 8 46.41

1979 4 9 45.68

1979 4 10 22.39

1979 4 11 45.14

1979 4 12 44.23

1979 4 13 44.59

1979 4 14 44.23

1980 1 1 15.37

1980 1 2 20.57

1980 1 3 25.77

1980 1 4 34.85

1980 1 5 49.85

1980 1 6 58.32

1980 1 7 52.15

1980 1 8 43.08

1980 1 9 42.59

1980 1 10 45.86

1980 1 11 53.6

1980 1 12 52.88

1980 1 13 69.33

1980 1 14 55.78

1980 2 1 15.97

1980 2 2 22.63

1980 2 3 27.47

1980 2 4 41.26

1980 2 5 53.48

1980 2 6 54.33

1980 2 7 56.63

1980 2 8 45.5

1980 2 9 48.76

1980 2 10 53

1980 2 11 51.18

1980 2 12 49.85

1980 2 13 51.42

1980 2 14 52.88

1980 3 1 21.66

1980 3 2 22.87

1980 3 3 27.95

1980 3 4 36.78

1980 3 5 51.79

1980 3 6 71.03

1980 3 7 57.84

1980 3 8 40.78

1980 3 9 49.37

1980 3 10 53

1980 3 11 53.84

1980 3 12 48.4

1980 3 13 53.72

1980 3 14 54.57

1980 4 1 22.99

1980 4 2 17.3

1980 4 3 32.43

1980 4 4 36.78

1980 4 5 54.09

1980 4 6 59.17

1980 4 7 54.57

1980 4 8 40.66

1980 4 9 50.94

1980 4 10 52.51

1980 4 11 53.36

1980 4 12 55.54

1980 4 13 50.7

1980 4 14 45.01

1981 1 1 20.45

1981 1 2 19.6

1981 1 3 32.31

1981 1 4 18.15

1981 1 5 42.47

1981 1 6 38.36

1981 1 7 41.26

1981 1 8 34

1981 1 9 34.97

1981 1 10 29.77

1981 1 11 40.66

1981 1 12 29.64

1981 1 13 38.48

1981 1 14 43.92

1981 2 1 18.15

1981 2 2 20.33

1981 2 3 28.68

1981 2 4 39.93

1981 2 5 19.72

1981 2 6 41.62

1981 2 7 42.23

1981 2 8 36.54

1981 2 9 34.61

1981 2 10 39.08

1981 2 11 41.26

1981 2 12 43.08

1981 2 13 44.04

1981 2 14 44.16

1981 3 1 23.11

1981 3 2 21.42

1981 3 3 33.52

1981 3 4 38.48

1981 3 5 41.74

1981 3 6 35.09

1981 3 7 38.24

1981 3 8 34.85

1981 3 9 38.24

1981 3 10 37.27

1981 3 11 44.16

1981 3 12 35.94

1981 3 13 36.66

1981 3 14 42.95

1981 4 1 24.93

1981 4 2 16.82

1981 4 3 32.31

1981 4 4 32.55

1981 4 5 35.69

1981 4 6 35.09

1981 4 7 33.4

1981 4 8 33.88

1981 4 9 39.32

1981 4 10 28.43

1981 4 11 37.03

1981 4 12 37.03

1981 4 13 28.31

1981 4 14 46.22

1982 1 1 25.41

1982 1 2 23.23

1982 1 3 37.63

1982 1 4 36.78

1982 1 5 31.34

1982 1 6 29.77

1982 1 7 28.68

1982 1 8 13.19

1982 1 9 27.95

1982 1 10 30.25

1982 1 11 32.55

1982 1 12 32.79

1982 1 13 35.21

1982 1 14 30.13

1982 2 1 19

1982 2 2 29.28

1982 2 3 34.97

1982 2 4 32.55

1982 2 5 38.96

1982 2 6 26.62

1982 2 7 27.71

1982 2 8 17.3

1982 2 9 26.98

1982 2 10 37.03

1982 2 11 35.57

1982 2 12 27.83

1982 2 13 31.1

1982 2 14 33.52

1982 3 1 17.3

1982 3 2 28.92

1982 3 3 34.73

1982 3 4 33.88

1982 3 5 26.14

1982 3 6 34.73

1982 3 7 26.38

1982 3 8 18.88

1982 3 9 20.57

1982 3 10 34.12

1982 3 11 34.24

1982 3 12 21.66

1982 3 13 32.91

1982 3 14 32.67

1982 4 1 17.18

1982 4 2 28.56

1982 4 3 36.9

1982 4 4 28.07

1982 4 5 34.48

1982 4 6 27.83

1982 4 7 28.43

1982 4 8 18.15

1982 4 9 29.16

1982 4 10 33.88

1982 4 11 35.21

1982 4 12 30.85

1982 4 13 33.27

1982 4 14 25.65

1983 1 1 34

1983 1 2 35.57

1983 1 3 45.86

1983 1 4 40.17

1983 1 5 49.73

1983 1 6 52.27

1983 1 7 36.66

1983 1 8 42.35

1983 1 9 37.63

1983 1 10 49

1983 1 11 41.87

1983 1 12 54.69

1983 1 13 36.42

1983 1 14 48.52

1983 2 1 34.48

1983 2 2 42.35

1983 2 3 45.01

1983 2 4 52.15

1983 2 5 54.09

1983 2 6 45.13

1983 2 7 34.36

1983 2 8 44.89

1983 2 9 46.71

1983 2 10 52.76

1983 2 11 53.24

1983 2 12 47.19

1983 2 13 31.46

1983 2 14 43.56

1983 3 1 44.77

1983 3 2 37.27

1983 3 3 50.46

1983 3 4 60.14

1983 3 5 51.79

1983 3 6 45.37

1983 3 7 33.64

1983 3 8 50.34

1983 3 9 50.7

1983 3 10 51.67

1983 3 11 53.24

1983 3 12 49.37

1983 3 13 31.1

1983 3 14 52.03

1983 4 1 40.05

1983 4 2 38.96

1983 4 3 51.06

1983 4 4 53.72

1983 4 5 48.64

1983 4 6 47.67

1983 4 7 45.01

1983 4 8 39.93

1983 4 9 50.21

1983 4 10 49.49

1983 4 11 46.1

1983 4 12 47.92

1983 4 13 33.88

1983 4 14 43.56

1984 1 1 29.77

1984 1 2 31.1

1984 1 3 45.13

1984 1 4 36.54

1984 1 5 45.5

1984 1 6 42.35

1984 1 7 42.23

1984 1 8 31.1

1984 1 9 40.9

1984 1 10 38.6

1984 1 11 60.38

1984 1 12 43.56

1984 1 13 40.41

1984 1 14 37.99

1984 2 1 28.56

1984 2 2 36.9

1984 2 3 40.66

1984 2 4 42.71

1984 2 5 47.79

1984 2 6 39.93

1984 2 7 42.95

1984 2 8 39.93

1984 2 9 34.48

1984 2 10 49.61

1984 2 11 46.34

1984 2 12 43.08

1984 2 13 41.62

1984 2 14 38.72

1984 3 1 37.51

1984 3 2 30.37

1984 3 3 43.44

1984 3 4 42.83

1984 3 5 37.63

1984 3 6 46.34

1984 3 7 39.32

1984 3 8 39.32

1984 3 9 41.14

1984 3 10 41.5

1984 3 11 48.16

1984 3 12 43.2

1984 3 13 37.39

1984 3 14 44.77

1984 4 1 35.94

1984 4 2 35.09

1984 4 3 45.62

1984 4 4 48.16

1984 4 5 47.55

1984 4 6 40.29

1984 4 7 36.9

1984 4 8 36.54

1984 4 9 48.52

1984 4 10 40.9

1984 4 11 47.79

1984 4 12 43.8

1984 4 13 33.27

1984 4 14 46.46

1985 1 1 20.57

1985 1 2 19.84

1985 1 3 28.56

1985 1 4 32.55

1985 1 5 37.51

1985 1 6 36.66

1985 1 7 32.55

1985 1 8 29.4

1985 1 9 35.45

1985 1 10 36.54

1985 1 11 35.94

1985 1 12 37.63

1985 1 13 34.73

1985 1 14 32.06

1985 2 1 19.6

1985 2 2 20.81

1985 2 3 28.19

1985 2 4 37.15

1985 2 5 33.76

1985 2 6 30.85

1985 2 7 28.68

1985 2 8 30.73

1985 2 9 31.94

1985 2 10 36.54

1985 2 11 38.72

1985 2 12 33.4

1985 2 13 25.41

1985 2 14 37.75

1985 3 1 26.5

1985 3 2 21.66

1985 3 3 31.82

1985 3 4 33.64

1985 3 5 37.75

1985 3 6 35.82

1985 3 7 31.46

1985 3 8 32.43

1985 3 9 35.09

1985 3 10 35.45

1985 3 11 31.82

1985 3 12 36.54

1985 3 13 27.83

1985 3 14 37.15

1985 4 1 24.56

1985 4 2 19.36

1985 4 3 33.4

1985 4 4 33.88

1985 4 5 29.64

1985 4 6 30.25

1985 4 7 28.19

1985 4 8 30.13

1985 4 9 37.63

1985 4 10 32.55

1985 4 11 32.79

1985 4 12 35.21

1985 4 13 23.47

1985 4 14 33.27

1986 1 1 38.11

1986 1 2 38.6

1986 1 3 44.41

1986 1 4 39.81

1986 1 5 47.07

1986 1 6 43.8

1986 1 7 48.16

1986 1 8 38.84

1986 1 9 44.29

1986 1 10 45.13

1986 1 11 42.95

1986 1 12 47.31

1986 1 13 44.29

1986 1 14 43.56

1986 2 1 38.6

1986 2 2 41.5

1986 2 3 40.53

1986 2 4 44.29

1986 2 5 42.83

1986 2 6 45.74

1986 2 7 45.98

1986 2 8 41.62

1986 2 9 45.37

1986 2 10 47.67

1986 2 11 50.09

1986 2 12 45.62

1986 2 13 45.5

1986 2 14 46.34

1986 3 1 36.3

1986 3 2 38.96

1986 3 3 44.41

1986 3 4 46.1

1986 3 5 42.11

1986 3 6 46.95

1986 3 7 45.37

1986 3 8 44.41

1986 3 9 40.9

1986 3 10 44.04

1986 3 11 46.95

1986 3 12 41.5

1986 3 13 41.87

1986 3 14 45.13

1986 4 1 37.99

1986 4 2 42.47

1986 4 3 40.41

1986 4 4 42.11

1986 4 5 45.86

1986 4 6 45.01

1986 4 7 44.53

1986 4 8 38.6

1986 4 9 44.04

1986 4 10 39.93

1986 4 11 45.62

1986 4 12 38.84

1986 4 13 41.62

1986 4 14 46.46

1987 1 1 31.46

1987 1 2 28.68

1987 1 3 33.03

1987 1 4 35.94

1987 1 5 43.92

1987 1 6 42.95

1987 1 7 41.5

1987 1 8 37.15

1987 1 9 43.92

1987 1 10 30.98

1987 1 11 34.85

1987 1 12 44.04

1987 1 13 27.95

1987 1 14 43.44

1987 2 1 26.74

1987 2 2 33.03

1987 2 3 32.67

1987 2 4 41.02

1987 2 5 42.47

1987 2 6 44.04

1987 2 7 41.38

1987 2 8 40.05

1987 2 9 43.2

1987 2 10 45.62

1987 2 11 34

1987 2 12 44.89

1987 2 13 30.25

1987 2 14 44.89

1987 3 1 35.45

1987 3 2 30.98

1987 3 3 42.47

1987 3 4 46.83

1987 3 5 42.11

1987 3 6 44.04

1987 3 7 43.56

1987 3 8 43.8

1987 3 9 30.01

1987 3 10 43.8

1987 3 11 35.57

1987 3 12 43.44

1987 3 13 39.2

1987 3 14 42.23

1987 4 1 29.89

1987 4 2 29.28

1987 4 3 40.05

1987 4 4 40.66

1987 4 5 42.11

1987 4 6 40.9

1987 4 7 39.57

1987 4 8 27.95

1987 4 9 41.14

1987 4 10 43.32

1987 4 11 42.95

1987 4 12 41.26

1987 4 13 27.47

1987 4 14 44.04

1988 1 1 25.89

1988 1 2 24.93

1988 1 3 38.84

1988 1 4 36.9

1988 1 5 57.11

1988 1 6 57.47

1988 1 7 69.21

1988 1 8 60.86

1988 1 9 62.68

1988 1 10 59.29

1988 1 11 65.22

1988 1 12 65.94

1988 1 13 71.39

1988 1 14 63.4

1988 2 1 24.08

1988 2 2 26.01

1988 2 3 33.76

1988 2 4 44.29

1988 2 5 47.43

1988 2 6 70.18

1988 2 7 60.98

1988 2 8 62.92

1988 2 9 65.34

1988 2 10 56.75

1988 2 11 57.11

1988 2 12 70.66

1988 2 13 68.49

1988 2 14 69.82

1988 3 1 29.64

1988 3 2 27.1

1988 3 3 45.37

1988 3 4 65.7

1988 3 5 61.23

1988 3 6 67.76

1988 3 7 60.38

1988 3 8 66.43

1988 3 9 50.34

1988 3 10 65.58

1988 3 11 67.03

1988 3 12 56.26

1988 3 13 67.52

1988 3 14 54.81

1988 4 1 32.31

1988 4 2 30.25

1988 4 3 45.86

1988 4 4 45.01

1988 4 5 63.4

1988 4 6 64.86

1988 4 7 62.07

1988 4 8 61.47

1988 4 9 63.28

1988 4 10 55.78

1988 4 11 54.69

1988 4 12 58.93

1988 4 13 64.61

1988 4 14 68

1989 1 1 14.28

1989 1 2 20.33

1989 1 3 28.92

1989 1 4 34.85

1989 1 5 39.32

1989 1 6 41.62

1989 1 7 40.05

1989 1 8 44.89

1989 1 9 41.87

1989 1 10 37.63

1989 1 11 39.45

1989 1 12 37.51

1989 1 13 36.06

1989 1 14 42.83

1989 2 1 15.37

1989 2 2 15.85

1989 2 3 30.98

1989 2 4 37.99

1989 2 5 38.72

1989 2 6 47.55

1989 2 7 45.62

1989 2 8 37.63

1989 2 9 44.41

1989 2 10 43.2

1989 2 11 32.19

1989 2 12 41.87

1989 2 13 42.35

1989 2 14 49

1989 3 1 18.39

1989 3 2 16.09

1989 3 3 37.75

1989 3 4 42.11

1989 3 5 37.27

1989 3 6 43.8

1989 3 7 37.99

1989 3 8 47.67

1989 3 9 39.32

1989 3 10 47.19

1989 3 11 40.41

1989 3 12 38.96

1989 3 13 37.63

1989 3 14 43.2

1989 4 1 21.3

1989 4 2 20.09

1989 4 3 41.26

1989 4 4 35.09

1989 4 5 42.83

1989 4 6 36.78

1989 4 7 37.63

1989 4 8 39.81

1989 4 9 39.32

1989 4 10 34.85

1989 4 11 39.32

1989 4 12 36.42

1989 4 13 33.64

1989 4 14 48.4

1990 1 1 25.05

1990 1 2 23.11

1990 1 3 36.3

1990 1 4 38.96

1990 1 5 45.13

1990 1 6 46.83

1990 1 7 38.96

1990 1 8 48.76

1990 1 9 52.51

1990 1 10 50.82

1990 1 11 45.01

1990 1 12 51.18

1990 1 13 28.19

1990 1 14 52.27

1990 2 1 22.75

1990 2 2 25.89

1990 2 3 35.45

1990 2 4 47.43

1990 2 5 51.42

1990 2 6 49.97

1990 2 7 43.32

1990 2 8 48.28

1990 2 9 49.73

1990 2 10 54.33

1990 2 11 45.5

1990 2 12 44.89

1990 2 13 34.97

1990 2 14 51.18

1990 3 1 31.1

1990 3 2 26.38

1990 3 3 47.79

1990 3 4 53.97

1990 3 5 52.88

1990 3 6 49.13

1990 3 7 47.19

1990 3 8 55.9

1990 3 9 55.66

1990 3 10 54.45

1990 3 11 54.33

1990 3 12 57.84

1990 3 13 35.94

1990 3 14 56.02

1990 4 1 30.61

1990 4 2 30.37

1990 4 3 47.79

1990 4 4 53.48

1990 4 5 47.67

1990 4 6 47.19

1990 4 7 45.98

1990 4 8 50.7

1990 4 9 45.5

1990 4 10 55.9

1990 4 11 49.85

1990 4 12 54.81

1990 4 13 34.85

1990 4 14 53.84

1991 1 1 17.67

1991 1 2 18.15

1991 1 3 22.51

1991 1 4 21.42

1991 1 5 24.2

1991 1 6 21.78

1991 1 7 23.59

1991 1 8 27.59

1991 1 9 23.11

1991 1 10 22.51

1991 1 11 27.59

1991 1 12 23.59

1991 1 13 22.38

1991 1 14 23.72

1991 2 1 18.75

1991 2 2 22.99

1991 2 3 22.02

1991 2 4 27.1

1991 2 5 31.7

1991 2 6 31.22

1991 2 7 33.03

1991 2 8 25.05

1991 2 9 30.49

1991 2 10 31.82

1991 2 11 28.19

1991 2 12 31.1

1991 2 13 30.25

1991 2 14 31.58

1991 3 1 28.8

1991 3 2 24.8

1991 3 3 31.1

1991 3 4 31.58

1991 3 5 30.01

1991 3 6 32.67

1991 3 7 29.52

1991 3 8 32.67

1991 3 9 28.92

1991 3 10 33.27

1991 3 11 32.31

1991 3 12 30.61

1991 3 13 26.26

1991 3 14 33.4

1991 4 1 28.43

1991 4 2 24.68

1991 4 3 33.15

1991 4 4 32.43

1991 4 5 30.01

1991 4 6 25.65

1991 4 7 31.82

1991 4 8 33.76

1991 4 9 33.88

1991 4 10 29.52

1991 4 11 33.27

1991 4 12 33.76

1991 4 13 26.86

1991 4 14 36.18

1992 1 1 17.1699

1992 1 2 22.8811

1992 1 3 23.2078

1992 1 4 28.5802

1992 1 5 38.3328

1992 1 6 38.236

1992 1 7 41.4062

1992 1 8 45.6775

1992 1 9 37.1228

1992 1 10 36.1911

1992 1 11 41.8902

1992 1 12 42.0596

1992 1 13 40.8254

1992 1 14 36.0459

1992 2 1 16.8795

1992 2 2 14.8951

1992 2 3 24.2726

1992 2 4 35.3925

1992 2 5 33.7348

1992 2 6 43.1002

1992 2 7 34.5455

1992 2 8 41.019

1992 2 9 41.5756

1992 2 10 38.7442

1992 2 11 37.6068

1992 2 12 45.1572

1992 2 13 38.9136

1992 2 14 43.4632

1992 3 1 24.3936

1992 3 2 14.6652

1992 3 3 30.1653

1992 3 4 37.7036

1992 3 5 38.4538

1992 3 6 43.9956

1992 3 7 41.14

1992 3 8 40.3656

1992 3 9 35.9975

1992 3 10 40.172

1992 3 11 43.1244

1992 3 12 36.905

1992 3 13 34.9206

1992 3 14 39.325

1992 4 1 22.2035

1992 4 2 19.118

1992 4 3 33.275

1992 4 4 36.4452

1992 4 5 42.4468

1992 4 6 41.382

1992 4 7 37.8972

1992 4 8 43.2696

1992 4 9 41.7934

1992 4 10 34.7875

1992 4 11 39.204

1992 4 12 40.172

1992 4 13 35.6466

1992 4 14 46.1736

1993 1 1 18.0048

1993 1 2 14.4474

1993 1 3 18.9607

1993 1 4 23.8612

1993 1 5 35.3804

1993 1 6 35.2231

1993 1 7 36.8566

1993 1 8 34.8964

1993 1 9 33.0451

1993 1 10 32.1134

1993 1 11 35.0416

1993 1 12 38.5748

1993 1 13 36.4452

1993 1 14 29.7539

1993 2 1 14.036

1993 2 2 15.2823

1993 2 3 17.7991

1993 2 4 30.8671

1993 2 5 29.4877

1993 2 6 49.0292

1993 2 7 33.9042

1993 2 8 38.1634

1993 2 9 40.898

1993 2 10 34.0978

1993 2 11 32.6095

1993 2 12 38.8894

1993 2 13 33.396

1993 2 14 43.076

1993 3 1 24.563

1993 3 2 17.3272

1993 3 3 28.6165

1993 3 4 34.7149

1993 3 5 37.4616

1993 3 6 43.5116

1993 3 7 35.816

1993 3 8 44.0682

1993 3 9 33.8437

1993 3 10 37.4616

1993 3 11 36.0459

1993 3 12 32.9483

1993 3 13 38.3086

1993 3 14 35.5014

1993 4 1 20.8846

1993 4 2 21.5501

1993 4 3 32.3796

1993 4 4 37.0018

1993 4 5 45.859

1993 4 6 46.343

1993 4 7 38.6958

1993 4 8 38.236

1993 4 9 36.8324

1993 4 10 38.3328

1993 4 11 32.1618

1993 4 12 35.8765

1993 4 13 36.1548

1993 4 14 40.0026

1994 1 1 9.5469

1994 1 2 11.5071

1994 1 3 13.5157

1994 1 4 15.2944

1994 1 5 33.0451

1994 1 6 26.0513

1994 1 7 41.745

1994 1 8 34.3035

1994 1 9 29.0642

1994 1 10 29.4272

1994 1 11 30.2742

1994 1 12 33.3839

1994 1 13 32.2586

1994 1 14 25.8335

1994 2 1 8.7967

1994 2 2 10.1882

1994 2 3 13.7577

1994 2 4 20.6305

1994 2 5 27.8542

1994 2 6 38.9983

1994 2 7 51.2556

1994 2 8 28.5802

1994 2 9 33.7227

1994 2 10 27.7937

1994 2 11 30.7461

1994 2 12 39.4581

1994 2 13 42.4952

1994 2 14 42.0838

1994 3 1 12.2331

1994 3 2 10.4181

1994 3 3 18.9244

1994 3 4 31.0365

1994 3 5 32.1255

1994 3 6 39.5912

1994 3 7 40.7528

1994 3 8 37.6068

1994 3 9 26.5353

1994 3 10 33.759

1994 3 11 36.9776

1994 3 12 28.435

1994 3 13 41.624

1994 3 14 29.2699

1994 4 1 12.8744

1994 4 2 12.2573

1994 4 3 21.6106

1994 4 4 23.3167

1994 4 5 38.9862

1994 4 6 40.9948

1994 4 7 47.5046

1994 4 8 35.9733

1994 4 9 34.5213

1994 4 10 31.3995

1994 4 11 33.154

1994 4 12 32.1376

1994 4 13 39.567

1994 4 14 35.0174

1995 1 1 26.5950135

1995 1 2 29.36143375

1995 1 3 28.747488

1995 1 4 27.9186765

1995 1 5 40.168128

1995 1 6 36.6636105

1995 1 7 46.53362313

1995 1 8 30.66700725

1995 1 9 38.602861

1995 1 10 38.02436

1995 1 11 38.524695

1995 1 12 39.77112563

1995 1 13 40.2721275

1995 1 14 38.81356875

1995 2 1 23.36517425

1995 2 2 28.2801255

1995 2 3 27.667068

1995 2 4 34.68735463

1995 2 5 35.703415

1995 2 6 46.478245

1995 2 7 45.1988625

1995 2 8 34.25694525

1995 2 9 42.39933638

1995 2 10 44.59719

1995 2 11 40.732428

1995 2 12 44.2636425

1995 2 13 44.60557613

1995 2 14 45.0973875

1995 3 1 29.7493625

1995 3 2 28.9864575

1995 3 3 41.5844715

1995 3 4 47.438655

1995 3 5 47.36306438

1995 3 6 42.55225425

1995 3 7 43.4700475

1995 3 8 42.88509775

1995 3 9 44.2687685

1995 3 10 44.14737938

1995 3 11 46.41508575

1995 3 12 43.30715125

1995 3 13 49.293035

1995 3 14 42.736166

1995 4 1 32.56162525

1995 4 2 30.9172545

1995 4 3 38.60858925

1995 4 4 41.3986815

1995 4 5 42.18905075

1995 4 6 48.19702388

1995 4 7 48.622794

1995 4 8 36.24171925

1995 4 9 42.594585

1995 4 10 44.194205

1995 4 11 38.97053738

1995 4 12 45.26943575

1995 4 13 43.91993375

1995 4 14 42.97137075

1996 1 1 17.98775671

1996 1 2 8.265941616

1996 1 3 22.36500549

1996 1 4 21.9460061

1996 1 5 30.93608476

1996 1 6 27.09219512

1996 1 7 34.80240366

1996 1 8 17.24659482

1996 1 9 29.77027927

1996 1 10 31.74617607

1996 1 11 38.6712311

1996 1 12 36.43317378

1996 1 13 38.44557348

1996 1 14 28.73718643

1996 2 1 15.8477721

1996 2 2 20.57645579

1996 2 3 21.97212439

1996 2 4 20.05176585

1996 2 5 32.66127546

1996 2 6 39.52273171

1996 2 7 39.4125221

1996 2 8 13.46375854

1996 2 9 38.81665244

1996 2 10 35.80891707

1996 2 11 35.0495314

1996 2 12 39.61464375

1996 2 13 40.66560991

1996 2 14 37.5805157

1996 3 1 15.76261098

1996 3 2 20.2037721

1996 3 3 26.67836037

1996 3 4 34.95306341

1996 3 5 26.66216555

1996 3 6 36.94262805

1996 3 7 40.00459207

1996 3 8 39.84721829

1996 3 9 27.35308293

1996 3 10 40.81536585

1996 3 11 42.05819817

1996 3 12 25.88265625

1996 3 13 24.29816494

1996 3 14 17.39389756

1996 4 1 21.26112027

1996 4 2 23.00844512

1996 4 3 24.30026768

1996 4 4 32.20584695

1996 4 5 15.9576497

1996 4 6 35.9861378

1996 4 7 40.83211402

1996 4 8 35.33052439

1996 4 9 36.9469811

1996 4 10 32.88115976

1996 4 11 33.57281494

1996 4 12 37.8420122

1996 4 13 34.74282591

1996 4 14 37.12929268

1997 1 1 20.72530793

1997 1 2 17.46885854

1997 1 3 20.8951875

1997 1 4 19.07856433

1997 1 5 36.48190579

1997 1 6 28.79475366

1997 1 7 55.9965128

1997 1 8 44.60500838

1997 1 9 46.76192561

1997 1 10 36.80410518

1997 1 11 42.98783232

1997 1 12 38.80779878

1997 1 13 39.50015488

1997 1 14 35.19196463

1997 2 1 16.70773902

1997 2 2 18.85220579

1997 2 3 22.22633506

1997 2 4 38.30885823

1997 2 5 29.29896951

1997 2 6 46.4261875

1997 2 7 63.7501596

1997 2 8 40.29466006

1997 2 9 48.6747032

1997 2 10 28.69157165

1997 2 11 28.40497134

1997 2 12 50.97471768

1997 2 13 64.09274085

1997 2 14 51.53190793

1997 3 1 27.02099695

1997 3 2 18.46703476

1997 3 3 35.17270793

1997 3 4 33.52922912

1997 3 5 36.92034634

1997 3 6 49.14046098

1997 3 7 36.99930991

1997 3 8 46.84773232

1997 3 9 36.37355915

1997 3 10 37.9928564

1997 3 11 45.47820046

1997 3 12 36.84877927

1997 3 13 57.13376524

1997 3 14 42.45854954

1997 4 1 20.47969268

1997 4 2 20.44280244

1997 4 3 34.09927561

1997 4 4 25.74275

1997 4 5 48.46271341

1997 4 6 52.1466654

1997 4 7 55.92457683

1997 4 8 41.17432637

1997 4 9 37.50535183

1997 4 10 41.9291561

1997 4 11 33.71768293

1997 4 12 39.12597713

1997 4 13 48.27318979

1997 4 14 33.10156052

1998 1 1 24.90183689

1998 1 2 25.65800496

1998 1 3 31.21299586

1998 1 4 34.22828784

1998 1 5 49.51492142

1998 1 6 48.54311828

1998 1 7 55.2136311

1998 1 8 38.38060976

1998 1 9 45.1556875

1998 1 10 48.9891372

1998 1 11 55.99496341

1998 1 12 49.66459756

1998 1 13 61.95144665

1998 1 14 46.3055564

1998 2 1 22.32671341

1998 2 2 29.1737105

1998 2 3 28.41548387

1998 2 4 37.70235897

1998 2 5 50.53936807

1998 2 6 56.25028784

1998 2 7 55.36535649

1998 2 8 38.56210976

1998 2 9 50.40682927

1998 2 10 53.87229878

1998 2 11 51.54378659

1998 2 12 56.37198171

1998 2 13 57.78616921

1998 2 14 54.43303049

1998 3 1 19.53522866

1998 3 2 30.33146733

1998 3 3 34.05374359

1998 3 4 45.40552523

1998 3 5 56.1596129

1998 3 6 53.13010918

1998 3 7 55.32011911

1998 3 8 44.15983537

1998 3 9 49.79463567

1998 3 10 54.40849848

1998 3 11 56.38876677

1998 3 12 57.33776829

1998 3 13 59.89167988

1998 3 14 42.64917988

1998 4 1 26.11239024

1998 4 2 28.69191232

1998 4 3 37.22396361

1998 4 4 47.40617866

1998 4 5 52.74759305

1998 4 6 55.89779653

1998 4 7 59.10824979

1998 4 8 42.35221341

1998 4 9 47.01846037

1998 4 10 53.95419512

1998 4 11 54.6923689

1998 4 12 50.7148628

1998 4 13 56.08792683

1998 4 14 49.66459756

1999 1 1 17.65685122

1999 1 2 17.92760297

1999 1 3 23.27619779

1999 1 4 23.27573394

1999 1 5 31.59339957

1999 1 6 37.07419017

1999 1 7 53.09168009

1999 1 8 49.18136488

1999 1 9 34.83215195

1999 1 10 39.17478293

1999 1 11 46.40733659

1999 1 12 42.75242829

1999 1 13 57.30450805

1999 1 14 41.19808

1999 2 1 16.37271659

1999 2 2 19.48704931

1999 2 3 21.99389873

1999 2 4 30.43749823

1999 2 5 36.80887092

1999 2 6 49.98067277

1999 2 7 51.76508386

1999 2 8 47.58776537

1999 2 9 45.32400293

1999 2 10 46.2462

1999 2 11 45.76279024

1999 2 12 45.91173829

1999 2 13 59.47510049

1999 2 14 44.08531707

1999 3 1 1.916285854

1999 3 2 17.54632251

1999 3 3 20.00261285

1999 3 4 32.11754423

1999 3 5 36.35430298

1999 3 6 56.91028272

1999 3 7 54.24131952

1999 3 8 51.17574

1999 3 9 39.98170537

1999 3 10 45.26574585

1999 3 11 57.2034878

1999 3 12 45.62954268

1999 3 13 60.43696195

1999 3 14 44.01755707

1999 4 1 22.22569317

1999 4 2 21.77658743

1999 4 3 28.96757394

1999 4 4 38.21617616

1999 4 5 43.57358403

1999 4 6 45.95403573

1999 4 7 57.00977743

1999 4 8 43.07387512

1999 4 9 42.05540927

1999 4 10 52.55655659

1999 4 11 45.54319

1999 4 12 45.04717854

1999 4 13 57.33983415

1999 4 14 44.73854

2000 1 1 19.89830244

2000 1 2 19.00998537

2000 1 3 41.92856585

2000 1 4 30.55810732

2000 1 5 39.44127805

2000 1 6 45.30417073

2000 1 7 42.99454634

2000 1 8 25.40586829

2000 1 9 39.79660488

2000 1 10 41.2179122

2000 1 11 44.9488439

2000 1 12 43.17220976

2000 1 13 44.59351707

2000 1 14 35.1773561

2000 2 1 15.45671707

2000 2 2 23.0962439

2000 2 3 25.93885854

2000 2 4 36.24333659

2000 2 5 42.10622927

2000 2 6 49.03510244

2000 2 7 39.44127805

2000 2 8 30.02511707

2000 2 9 45.83716098

2000 2 10 42.81688293

2000 2 11 38.9082878

2000 2 12 46.37015122

2000 2 13 33.04539512

2000 2 14 45.30417073

2000 3 1 22.20792683

2000 3 2 21.49727317

2000 3 3 30.20278049

2000 3 4 37.30931707

2000 3 5 37.48698049

2000 3 6 54.54266829

2000 3 7 45.65949756

2000 3 8 44.9488439

2000 3 9 38.19763415

2000 3 10 48.85743902

2000 3 11 48.5021122

2000 3 12 35.71034634

2000 3 13 33.22305854

2000 3 14 34.28903902

2000 4 1 24.3398878

2000 4 2 33.22305854

2000 4 3 33.75604878

2000 4 4 40.50725854

2000 4 5 47.25846829

2000 4 6 42.63921951

2000 4 7 29.49212683

2000 4 8 45.48183415

2000 4 9 46.90314146

2000 4 10 44.9488439

2000 4 11 43.17220976

2000 4 12 39.26361463

2000 4 13 38.55296098

2000 4 14 45.48183415

2001 1 1 19.88322171

2001 1 2 21.8765639

2001 1 3 28.55340293

2001 1 4 35.57090122

2001 1 5 25.62939366

2001 1 6 31.20100098

2001 1 7 27.90947634

2001 1 8 19.83839268

2001 1 9 28.34723073

2001 1 10 32.42563902

2001 1 11 37.2370122

2001 1 12 29.99619512

2001 1 13 36.22185171

2001 1 14 30.62421463

2001 2 1 18.89326463

2001 2 2 29.8144

2001 2 3 24.10603317

2001 2 4 23.03633415

2001 2 5 28.60484268

2001 2 6 20.63787805

2001 2 7 8.403892683

2001 2 8 22.72397707

2001 2 9 18.42720805

2001 2 10 29.12027317

2001 2 11 32.68056537

2001 2 12 15.79820268

2001 2 13 26.15060854

2001 2 14 26.0297561

2001 3 1 16.25000488

2001 3 2 28.70834195

2001 3 3 15.16667122

2001 3 4 21.54891951

2001 3 5 31.61685732

2001 3 6 26.41958268

2001 3 7 20.33977537

2001 3 8 23.42678049

2001 3 9 28.93827146

2001 3 10 30.09845488

2001 3 11 27.26389707

2001 3 12 34.80736171

2001 3 13 29.74664

2001 3 14 28.18506122

2001 4 1 19.63242707

2001 4 2 29.68941585

2001 4 3 .

2001 4 4 29.71854439

2001 4 5 25.89526902

2001 4 6 24.54234146

2001 4 7 28.00429902

2001 4 8 23.2191622

2001 4 9 24.57023049

2001 4 10 33.91842488

2001 4 11 29.32685854

2001 4 12 27.87786878

2001 4 13 27.85803659

2001 4 14 29.40784

2002 1 1 31.4505561

2002 1 2 32.35643293

2002 1 3 52.87139268

2002 1 4 43.18336537

2002 1 5 41.63769366

2002 1 6 45.52418415

2002 1 7 45.76031122

2002 1 8 26.66314683

2002 1 9 40.70475415

2002 1 10 48.0827439

2002 1 11 49.75525902

2002 1 12 44.9488439

2002 1 13 54.72033171

2002 1 14 43.92521341

2002 2 1 25.18337585

2002 2 2 38.12470951

2002 2 3 47.11633756

2002 2 4 37.21263512

2002 2 5 53.2494439

2002 2 6 47.06303854

2002 2 7 39.4462361

2002 2 8 35.18644585

2002 2 9 39.58692073

2002 2 10 45.77828415

2002 2 11 48.35956829

2002 2 12 42.44895439

2002 2 13 36.6751

2002 2 14 46.98081756

2002 3 1 37.46962732

2002 3 2 38.68310976

2002 3 3 42.18555805

2002 3 4 51.6430361

2002 3 5 49.14046098

2002 3 6 35.21826

2002 3 7 38.89837171

2002 3 8 38.2280022

2002 3 9 49.77633073

2002 3 10 45.2157522

2002 3 11 45.83096341

2002 3 12 44.70114805

2002 3 13 40.93117171

2002 3 14 48.47112439

2002 4 1 34.76749073

2002 4 2 36.43050293

2002 4 3 45.02652

2002 4 4 60.3332561

2002 4 5 34.39832268

2002 4 6 42.39131707

2002 4 7 51.55750976

2002 4 8 43.30091244

2002 4 9 45.88364268

2002 4 10 44.13489756

2002 4 11 51.34059512

2002 4 12 50.3173778

2002 4 13 33.94445463

2002 4 14 51.57982098

2003 1 1 29.88109756

2003 1 2 32.0945122

2003 1 3 53.95198171

2003 1 4 50.35518293

2003 1 5 71.93597561

2003 1 6 80.78963415

2003 1 7 88.8132622

2003 1 8 70.27591463

2003 1 9 73.31935976

2003 1 10 83.27972561

2003 1 11 73.04268293

2003 1 12 97.94359756

2003 1 13 71.38262195

2003 1 14 76.63948171

2003 2 1 22.6875

2003 2 2 39.56478659

2003 2 3 44.26829268

2003 2 4 73.59603659

2003 2 5 69.9992378

2003 2 6 98.77362805

2003 2 7 84.93978659

2003 2 8 74.14939024

2003 2 9 90.47332317

2003 2 10 97.11356707

2003 2 11 87.15320122

2003 2 12 97.66692073

2003 2 13 77.74618902

2003 2 14 95.73018293

2003 3 1 32.0945122

2003 3 2 38.7347561

2003 3 3 63.08231707

2003 3 4 74.42606707

2003 3 5 73.31935976

2003 3 6 91.85670732

2003 3 7 85.76981707

2003 3 8 91.58003049

2003 3 9 72.48932927

2003 3 10 96.00685976

2003 3 11 86.87652439

2003 3 12 78.57621951

2003 3 13 71.93597561

2003 3 14 88.25990854

2003 4 1 36.79801829

2003 4 2 48.14176829

2003 4 3 57.54878049

2003 4 4 72.7660061

2003 4 5 87.70655488

2003 4 6 85.49314024

2003 4 7 93.79344512

2003 4 8 81.89634146

2003 4 9 93.79344512

2003 4 10 89.08993902

2003 4 11 89.64329268

2003 4 12 100.1570122

2003 4 13 68.33917683

2003 4 14 96.00685976

2004 1 1 28.82972561

2004 1 2 15.86280488

2004 1 3 25.89695122

2004 1 4 26.19207317

2004 1 5 45.78079268

2004 1 6 46.85060976

2004 1 7 64.81615854

2004 1 8 60.64756098

2004 1 9 53.65685976

2004 1 10 51.7570122

2004 1 11 52.84527439

2004 1 12 58.26814024

2004 1 13 53.3617378

2004 1 14 56.2945122

2004 2 1 19.0722561

2004 2 2 20.0867378

2004 2 3 23.72042683

2004 2 4 39.12210366

2004 2 5 50.55807927

2004 2 6 63.54344512

2004 2 7 59.26417683

2004 2 8 61.62515244

2004 2 9 62.23384146

2004 2 10 56.99542683

2004 2 11 65.77530488

2004 2 12 69.68567073

2004 2 13 54.83734756

2004 2 14 63.04542683

2004 3 1 23.57286585

2004 3 2 20.28963415

2004 3 3 34.9535061

2004 3 4 41.88887195

2004 3 5 58.13902439

2004 3 6 63.26676829

2004 3 7 61.34847561

2004 3 8 59.78064024

2004 3 9 56.11006098

2004 3 10 58.17591463

2004 3 11 71.38262195

2004 3 12 62.65807927

2004 3 13 47.36707317

2004 3 14 65.60929878

2004 4 1 30.34222561

2004 4 2 23.92332317

2004 4 3 30.87713415

2004 4 4 37.16692073

2004 4 5 60.59222561

2004 4 6 51.24054878

2004 4 7 57.75167683

2004 4 8 61.29314024

2004 4 9 58.96905488

2004 4 10 63.08231707

2004 4 11 63.74634146

2004 4 12 64.07835366

2004 4 13 51.99679878

2004 4 14 58.32347561

2005 1 1 25.24408984

2005 1 2 21.66899455

2005 1 3 26.54183198

2005 1 4 31.25448092

2005 1 5 34.43675694

2005 1 6 32.52986476

2005 1 7 51.33996287

2005 1 8 49.08030953

2005 1 9 37.04658736

2005 1 10 36.97826442

2005 1 11 25.06112425

2005 1 12 37.29676437

2005 1 13 22.74995116

2005 1 14 36.1788667

2005 2 1 18.66062025

2005 2 2 25.49809941

2005 2 3 28.97030096

2005 2 4 35.90886927

2005 2 5 34.9164459

2005 2 6 46.17798022

2005 2 7 46.0351963

2005 2 8 47.86039

2005 2 9 45.97391909

2005 2 10 38.5044608

2005 2 11 35.60684665

2005 2 12 42.94576084

2005 2 13 43.83438259

2005 2 14 44.49161533

2005 3 1 25.86004068

2005 3 2 24.55955003

2005 3 3 26.16678437

2005 3 4 34.56827884

2005 3 5 37.29972489

2005 3 6 44.53131268

2005 3 7 30.51356522

2005 3 8 41.14499747

2005 3 9 32.1770138

2005 3 10 43.32314061

2005 3 11 45.55740798

2005 3 12 41.38767531

2005 3 13 48.01036954

2005 3 14 43.81059838

2005 4 1 23.01773961

2005 4 2 23.94045605

2005 4 3 33.10081126

2005 4 4 31.54654816

2005 4 5 45.82069741

2005 4 6 31.94469391

2005 4 7 43.22946073

2005 4 8 41.48570057

2005 4 9 33.89256453

2005 4 10 36.55103981

2005 4 11 36.8937785

2005 4 12 39.15951948

2005 4 13 43.48017011

2005 4 14 29.77092987

2006 1 1 38.12348002

2006 1 2 35.99891632

2006 1 3 33.99953828

2006 1 4 .

2006 1 5 41.56136933

2006 1 6 44.84101718

2006 1 7 37.94384768

2006 1 8 45.16929025

2006 1 9 44.181473

2006 1 10 41.63714512

2006 1 11 18.18986884

2006 1 12 44.80625101

2006 1 13 18.9012208

2006 1 14 34.6311542

2006 2 1 37.18236362

2006 2 2 32.93097974

2006 2 3 41.36795582

2006 2 4 48.07792631

2006 2 5 38.44132133

2006 2 6 36.73316224

2006 2 7 41.8740958

2006 2 8 49.18888658

2006 2 9 42.72334701

2006 2 10 37.26148324

2006 2 11 35.72523047

2006 2 12 43.53682828

2006 2 13 37.6220647

2006 2 14 34.49088757

2006 3 1 44.08907568

2006 3 2 32.1501483

2006 3 3 33.92663463

2006 3 4 41.45553322

2006 3 5 22.05569273

2006 3 6 49.44457668

2006 3 7 41.36929448

2006 3 8 56.13450275

2006 3 9 31.36769522

2006 3 10 44.7738554

2006 3 11 31.77923514

2006 3 12 24.90052094

2006 3 13 16.01681154

2006 3 14 43.34821402

2006 4 1 46.65898862

2006 4 2 36.77385735

2006 4 3 44.54848553

2006 4 4 39.77671343

2006 4 5 33.25760506

2006 4 6 30.16475271

2006 4 7 41.67208871

2006 4 8 61.93312179

2006 4 9 62.70926437

2006 4 10 23.06291611

2006 4 11 56.25154543

2006 4 12 48.6937247

2006 4 13 25.04749466

2006 4 14 62.0270271

2007 1 1 36.94

2007 1 2 29.28

2007 1 3 56.71

2007 1 4 51.77

2007 1 5 38.66

2007 1 6 42.35

2007 1 7 50.31

2007 1 8 .

2007 1 9 .

2007 1 10 .

2007 1 11 .

2007 1 12 .

2007 1 13 .

2007 1 14 .

2007 2 1 30.56

2007 2 2 45.91

2007 2 3 43.35

2007 2 4 56.03

2007 2 5 62.25

2007 2 6 .

2007 2 7 .

2007 2 8 .

2007 2 9 .

2007 2 10 .

2007 2 11 .

2007 2 12 .

2007 2 13 .

2007 2 14 .

2007 3 1 45.11

2007 3 2 39.03

2007 3 3 41.71

2007 3 4 46.52

2007 3 5 38.87

2007 3 6 .

2007 3 7 .

2007 3 8 .

2007 3 9 .

2007 3 10 .

2007 3 11 .

2007 3 12 .

2007 3 13 .

2007 3 14 .

2007 4 1 33.96

2007 4 2 40.70

2007 4 3 47.28

2007 4 4 52.61

2007 4 5 46.39

2007 4 6 .

2007 4 7 .

2007 4 8 .

2007 4 9 .

2007 4 10 .

2007 4 11 .

2007 4 12 .

2007 4 13 .

2007 4 14 .

2008 1 1 39.47887027

2008 1 2 32.36266061

2008 1 3 54.15969163

2008 1 4 60.85768313

2008 1 5 77.02095384

2008 1 6 88.46247153

2008 1 7 87.94833887

2008 1 8 69.26120344

2008 1 9 72.29639751

2008 1 10 76.90270593

2008 1 11 86.75669826

2008 1 12 86.55961841

2008 1 13 86.38113992

2008 1 14 75.75964282

2008 2 1 39.00443805

2008 2 2 39.55447618

2008 2 3 54.51443536

2008 2 4 55.56415629

2008 2 5 79.48081627

2008 2 6 85.34544867

2008 2 7 87.84063741

2008 2 8 82.31757757

2008 2 9 78.84651602

2008 2 10 86.45205265

2008 2 11 86.25517288

2008 2 12 84.99514238

2008 2 13 90.2715201

2008 2 14 87.3479378

2008 3 1 35.03510771

2008 3 2 49.23269547

2008 3 3 62.62960102

2008 3 4 78.37168581

2008 3 5 82.75597737

2008 3 6 85.24778948

2008 3 7 90.82278344

2008 3 8 76.05964728

2008 3 9 38.04486674

2008 3 10 84.78589979

2008 3 11 87.31832362

2008 3 12 84.78589979

2008 3 13 88.09684121

2008 3 14 86.87494616

2008 4 1 40.38819868

2008 4 2 47.98063038

2008 4 3 52.27960556

2008 4 4 82.53414531

2008 4 5 87.86958696

2008 4 6 88.16490661

2008 4 7 86.68695218

2008 4 8 79.11781028

2008 4 9 82.31757757

2008 4 10 89.73260394

2008 4 11 84.03699637

2008 4 12 80.31218727

2008 4 13 89.85085185

2008 4 14 81.94536569

2009 1 1 22.39

2009 1 2 20.91

2009 1 3 21.24

2009 1 4 35.38

2009 1 5 35.91

2009 1 6 46.27

2009 1 7 62.36

2009 1 8 33.7

2009 1 9 42.49

2009 1 10 42.74

2009 1 11 45.79

2009 1 12 45.79

2009 1 13 60.79

2009 1 14 33.7

2009 2 1 23.89

2009 2 2 22.99

2009 2 3 34.78

2009 2 4 30.51

2009 2 5 43.76

2009 2 6 62.56

2009 2 7 77.79

2009 2 8 40.39

2009 2 9 44.77

2009 2 10 48.49

2009 2 11 45.53

2009 2 12 59.73

2009 2 13 75

2009 2 14 47.68

2009 3 1 26.31

2009 3 2 26.59

2009 3 3 32.61

2009 3 4 42.67

2009 3 5 52.16

2009 3 6 62.15

2009 3 7 80.36

2009 3 8 53.01

2009 3 9 52.62

2009 3 10 58.02

2009 3 11 64.2

2009 3 12 52.55

2009 3 13 72.9

2009 3 14 47.54

2009 4 1 21.31

2009 4 2 22.07

2009 4 3 29.96

2009 4 4 42.21

2009 4 5 42.21

2009 4 6 58.11

2009 4 7 71.63

2009 4 8 49.23

2009 4 9 45.79

2009 4 10 55.13

2009 4 11 45.37

2009 4 12 51.28

2009 4 13 69.6

2009 4 14 48.14

2010 1 1 10.05972833

2010 1 2 12.39746845

2010 1 3 13.43948088

2010 1 4 14.36205334

2010 1 5 23.01222665

2010 1 6 25.35921743

2010 1 7 31.13548876

2010 1 8 17.66073875

2010 1 9 20.64516813

2010 1 10 21.0799916

2010 1 11 22.08146484

2010 1 12 23.02764273

2010 1 13 27.38885573

2010 1 14 15.94240464

2010 2 1 12.13676757

2010 2 2 9.548607697

2010 2 3 15.00589566

2010 2 4 23.57971407

2010 2 5 20.57623448

2010 2 6 30.72790483

2010 2 7 29.94925858

2010 2 8 28.61430029

2010 2 9 26.85181252

2010 2 10 24.46987277

2010 2 11 22.81148348

2010 2 12 26.28373363

2010 2 13 31.29066095

2010 2 14 27.2517268

2010 3 1 18.5133639

2010 3 2 15.18756566

2010 3 3 14.66980809

2010 3 4 22.22335254

2010 3 5 25.80588284

2010 3 6 26.95914704

2010 3 7 33.41472268

2010 3 8 28.35190457

2010 3 9 25.36583417

2010 3 10 24.20277997

2010 3 11 24.60906431

2010 3 12 25.34228367

2010 3 13 31.83474756

2010 3 14 26.88344528

2010 4 1 14.07910154

2010 4 2 14.9483078

2010 4 3 18.4211713

2010 4 4 22.39674965

2010 4 5 24.45768435

2010 4 6 31.07483587

2010 4 7 30.8086995

2010 4 8 24.17337802

2010 4 9 23.88300888

2010 4 10 28.0098837

2010 4 11 22.91973018

2010 4 12 24.61742018

2010 4 13 34.43712093

2010 4 14 22.61087544

2011 1 1 29.13

2011 1 2 22.44

2011 1 3 37.07

2011 1 4 34.88

2011 1 5 38.15

2011 1 6 35.15

2011 1 7 34.83

2011 1 8 48.58

2011 1 9 35.77

2011 1 10 37.86

2011 1 11 47.26

2011 1 12 48.48

2011 1 13 47.89

2011 1 14 38.62

2011 2 1 25.52

2011 2 2 29.42

2011 2 3 30.32

2011 2 4 41.71

2011 2 5 45.88

2011 2 6 47.45

2011 2 7 48.13

2011 2 8 41.68

2011 2 9 49.90

2011 2 10 42.09

2011 2 11 47.43

2011 2 12 50.31

2011 2 13 46.97

2011 2 14 47.57

2011 3 1 33.32

2011 3 2 29.50

2011 3 3 24.72

2011 3 4 41.12

2011 3 5 23.69

2011 3 6 50.76

2011 3 7 54.57

2011 3 8 45.64

2011 3 9 24.64

2011 3 10 48.06

2011 3 11 53.34

2011 3 12 21.19

2011 3 13 17.13

2011 3 14 46.13

2011 4 1 29.12

2011 4 2 28.70

2011 4 3 29.06

2011 4 4 27.45

2011 4 5 33.33

2011 4 6 28.41

2011 4 7 41.24

2011 4 8 44.58

2011 4 9 48.67

2011 4 10 31.52

2011 4 11 46.24

2011 4 12 40.51

2011 4 13 33.24

2011 4 14 46.06

2012 1 1 23.96

2012 1 2 18.55

2012 1 3 37.45

2012 1 4 43.08

2012 1 5 54.32

2012 1 6 57.85

2012 1 7 63.22

2012 1 8 50.38

2012 1 9 49.44

2012 1 10 49.20

2012 1 11 62.95

2012 1 12 62.23

2012 1 13 61.34

2012 1 14 52.85

2012 2 1 22.94

2012 2 2 28.51

2012 2 3 31.36

2012 2 4 49.26

2012 2 5 57.01

2012 2 6 60.81

2012 2 7 56.56

2012 2 8 53.39

2012 2 9 55.71

2012 2 10 57.79

2012 2 11 57.23

2012 2 12 63.18

2012 2 13 59.13

2012 2 14 63.15

2012 3 1 27.02

2012 3 2 28.27

2012 3 3 39.78

2012 3 4 47.45

2012 3 5 61.44

2012 3 6 62.07

2012 3 7 62.97

2012 3 8 59.45

2012 3 9 60.86

2012 3 10 52.64

2012 3 11 56.36

2012 3 12 61.55

2012 3 13 64.25

2012 3 14 53.68

2012 4 1 29.34

2012 4 2 32.97

2012 4 3 32.03

2012 4 4 53.80

2012 4 5 48.77

2012 4 6 61.87

2012 4 7 62.15

2012 4 8 47.33

2012 4 9 53.83

2012 4 10 60.89

2012 4 11 57.85

2012 4 12 58.45

2012 4 13 60.84

2012 4 14 60.46

2013 1 1 24.27767176

2013 1 2 14.60939783

2013 1 3 33.63716813

2013 1 4 32.55657227

2013 1 5 45.1865304

2013 1 6 39.75419631

2013 1 7 40.24525992

2013 1 8 29.24598295

2013 1 9 42.26624706

2013 1 10 37.75661848

2013 1 11 47.66352582

2013 1 12 49.06861435

2013 1 13 53.78260635

2013 1 14 34.27952525

2013 2 1 19.4715378

2013 2 2 25.95425428

2013 2 3 27.94378188

2013 2 4 35.59195035

2013 2 5 41.90404985

2013 2 6 37.91080203

2013 2 7 39.74833246

2013 2 8 33.87629996

2013 2 9 39.88474647

2013 2 10 46.37583149

2013 2 11 37.84861803

2013 2 12 36.81822299

2013 2 13 45.84736073

2013 2 14 38.04668619

2013 3 1 27.00188694

2013 3 2 25.09301025

2013 3 3 28.17829385

2013 3 4 36.22751169

2013 3 5 40.66412282

2013 3 6 39.20731307

2013 3 7 39.41798012

2013 3 8 39.23397263

2013 3 9 37.64747136

2013 3 10 29.96162559

2013 3 11 31.78057182

2013 3 12 36.3789162

2013 3 13 34.93669486

2013 3 14 42.51055583

2013 4 1 25.81348427

2013 4 2 26.38421661

2013 4 3 22.45640931

2013 4 4 37.74773475

2013 4 5 32.47205331

2013 4 6 35.52839882

2013 4 7 40.13006885

2013 4 8 37.4494409

2013 4 9 36.40219148

2013 4 10 37.56598903

2013 4 11 45.3277025

2013 4 12 44.89498835

2013 4 13 40.36022481

2013 4 14 40.04052163

2014 1 1 30.13545512

2014 1 2 21.68158163

2014 1 3 34.3375145

2014 1 4 28.17988965

2014 1 5 24.99393638

2014 1 6 24.94822142

2014 1 7 25.25199378

2014 1 8 20.50395587

2014 1 9 27.20184828

2014 1 10 24.41035175

2014 1 11 28.14123853

2014 1 12 25.60134288

2014 1 13 28.18519434

2014 1 14 26.6835492

2014 2 1 29.78074688

2014 2 2 33.29831949

2014 2 3 32.0129351

2014 2 4 28.59327824

2014 2 5 26.43778913

2014 2 6 27.81776783

2014 2 7 28.31089216

2014 2 8 27.27585421

2014 2 9 28.27150178

2014 2 10 30.56529808

2014 2 11 32.07157356

2014 2 12 33.57300089

2014 2 13 27.03179674

2014 2 14 30.26122624

2014 3 1 28.89410192

2014 3 2 33.01410306

2014 3 3 29.15426612

2014 3 4 28.678526

2014 3 5 25.24981997

2014 3 6 29.5458768

2014 3 7 32.21082315

2014 3 8 30.41174908

2014 3 9 29.10433128

2014 3 10 30.66626513

2014 3 11 32.70807312

2014 3 12 30.22749865

2014 3 13 25.30655896

2014 3 14 32.61731963

2014 4 1 33.79041346

2014 4 2 31.1985055

2014 4 3 29.79354891

2014 4 4 25.93338317

2014 4 5 26.85985202

2014 4 6 26.83322806

2014 4 7 27.17382119

2014 4 8 28.13546683

2014 4 9 31.31660337

2014 4 10 28.87344443

2014 4 11 32.63401274

2014 4 12 27.76285082

2014 4 13 24.11265475

2014 4 14 37.8508086

2015 1 1 21.28

2015 1 2 12.36

2015 1 3 40.42

2015 1 4 26.83

2015 1 5 50.87

2015 1 6 50.01

2015 1 7 39.30

2015 1 8 36.33

2015 1 9 49.64

2015 1 10 47.74

2015 1 11 43.07

2015 1 12 43.06

2015 1 13 34.37

2015 1 14 47.73

2015 2 1 22.88

2015 2 2 24.69

2015 2 3 37.15

2015 2 4 34.68

2015 2 5 38.80

2015 2 6 37.22

2015 2 7 33.51

2015 2 8 14.00

2015 2 9 42.94

2015 2 10 44.14

2015 2 11 46.24

2015 2 12 38.72

2015 2 13 32.77

2015 2 14 38.82

2015 3 1 14.62

2015 3 2 35.15

2015 3 3 37.24

2015 3 4 29.93

2015 3 5 38.26

2015 3 6 38.67

2015 3 7 38.02

2015 3 8 30.48

2015 3 9 59.25

2015 3 10 41.85

2015 3 11 41.95

2015 3 12 44.23

2015 3 13 31.31

2015 3 14 29.38

2015 4 1 26.79

2015 4 2 41.86

2015 4 3 21.90

2015 4 4 39.64

2015 4 5 28.60

2015 4 6 47.06

2015 4 7 49.55

2015 4 8 40.67

2015 4 9 44.77

2015 4 10 49.59

2015 4 11 54.65

2015 4 12 51.95

2015 4 13 43.46

2015 4 14 56.00

**data** two; set one;

if trt>**2** then delete;

if trt<**2** then delete;

**data** three; set one;

if trt>**6** then delete;

if trt<**6** then delete;

**data** four; set two;

buac2 = buac;

**data** five; set three;

buac6 = buac;

**data** six; set four; **proc** **sort**; by yr rep;

**data** seven; set five; **proc** **sort**; by yr rep;

**data** eight; merge six seven; by yr rep; keep yr rep buac2 buac6;

**proc** **print**;

**proc** **reg** data = eight;

model buac2 buac6=yr/p clm;

output out = dog p = pbuac2 pbuac6 l95m=l95m u95m=u95m;

**proc** **plot**; plot buac2\*yr='2' buac6\*yr='6' /overlay box;

**run**;