

BeanCAP: Phytic acid analysis

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Materials

Michigan seed grown in East Lansing in 2010
(single replication, 248 lines)

Washington seed grown in 2010 (single
replication, 248 lines)

Method

- Phytic acid analysis conducted colometrically using Wade's method

Michigan

Phytic acid phosphorus

range: 2.7 to 6 mg/ g

average: 4.2

Lowest: Claret and SR7-3 small red: 2.7 mg/g

Highest: Hooter cranberry: 6 mg/g

Michigan

Percent of total P as phytic acid phosphorus

range: 62 to 100 %

average: 94%

Lowest: Fox Fire and USWK-6 kidneys at 62%

Highest: numerous navy and black beans at
100%

Washington

range: 2.6 to 6.5 mg/ g

average: 4.2

Lowest: UI537 pink: 2.6 mg/g

Highest: BelMiNeb-RM GN: 6.53 mg/g

MI and WA

Correlation between values at the two locations:

$$r = 0.26$$

Results: Phytic acid P (mg/g)

| Market Class | Michigan | Washington |
|--------------|----------|------------|
| pink | 3.76 | 3.66 |
| cranberry | 3.93 | 3.97 |
| WK | 4.07 | 4.4 |
| pinto | 4.12 | 4.01 |
| small red | 4.16 | 3.68 |
| LRK | 4.24 | 3.89 |
| GN | 4.31 | 4.76 |
| black | 4.33 | 4.12 |
| DRK | 4.41 | 4.28 |
| navy | 4.41 | 4.73 |