

**Supplementary Table S4.** Total protein and total oil content of grain from soybean breeding lines harvested in 2016 calibrated to 13% moisture.

Breeding Line	Protein (%) <sup>a</sup>	Oil (%) <sup>a</sup>
W04-1002	39.4 a	17.9 c
SSR51-70	39.2 ab	18.6 b
91-44	38.7 ac	19.2 a
91-38	38.6 bc	19.2 a
52-82B	38.5 bc	18.1 c
52-11	38.5 c	18.4 b
AxN-1-55	38.3 c	18.4 b
91-145	37.6 d	18.7 b
Dwight	37.6 d	18.5 b
51-23	37.3 d	18.5 b

<sup>a</sup>Means followed by the same letter are not significantly different based on Fisher's Least Significant Difference (LSD;  $\alpha=0.05$ ).