GRAIN QUALITY
Task Force

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1997 Indiana Soybean Composition Data

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This fact sheet summarizes the composition data compiled for soybean samples collected in Indiana during the 1997 harvest. District results are represented and composition data from the 1996 crop year is compared.

Methodology

Soybean samples were taken directly from the field as part of the annual yield survey conducted by the Indiana Agricultural Statistics Service. All samples were analyzed for moisture, protein, oil, and fiber using a near-infrared transmittance (NIT) whole grain analyzer (Infratech 1229) available at the Purdue University Grain Quality Laboratory in the Department of Agricultural and Biological Engineering. Samples from 8 districts were obtained. The SE district was not represented. All results are reported based on 13% moisture (wet basis).

There were 44 samples available for compositional analysis. Given the number of samples from each crop-reporting district, all of the districts were underrepresented based on the total acres harvested per sample (Table 1). It is hoped that in the future, the number of samples can be increased to achieve a production per sample ratio of 2 million bushels, which is similar to the target of the annual American Soybean Association survey.

Results

The 1997 data showed that the average statewide protein content increased by 0.5% over 1996 (Table 2), while the spread between minimum and maximum points decreased from 11.6 in 1996 to 11.2 in 1997 for a 0.4% drop. The average oil content was up 0.4% from last year and the spread between the range of points

Table 1. Summary of the 1997 Indiana soybean acres, yield, and production

District	Harvested Acres (1,000's)	Acres per Sample	Yield (Bu/Ac)	Production (1,000 Bu)	Production (1,000 Bu) per Sample
NW	734	91,750	45	33,166	4,146
NC	606	86,571	47	28,687	4,098
NE	581	193,666	45	26,422	8,807
WC	678	339,000	42	28,368	14,184
C	1,264	74,353	47	59,568	3,504
EC	500	125,000	44	22,212	5,553
SW	652	326,000	39	25,290	12,645
SC	173	173,000	36	6,167	6,167
SE	212	0	36	7,720	0
State	5,400	122,727	44	237,600	5,400
1996	5,360	148,889	36	203,680	5,657,778

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Table 2. Summary of the 1997 Indiana Soybean Composition Survey (13% Moisture Basis)

District	Number of Samples	% Protein		%Oil		%Fiber	
		Ave.	Range	Ave.	Range	Ave.	Range
NW	8	37.3	34.6-44.1	17.0	14.3-18.3	5.0	4.8-5.2
NC	7	37.6	36.2-39.0	17.1	16.3-18.4	5.3	5.2-5.6
NE	3	37.1	36.3-38.3	17.3	17.0-17.7	5.1	4.8-5.2
WC	2	36.8	36.3-37.2	17.3	16.8-17.8	5.2	4.8-5.5
C	17	36.7	34.9-39.1	18.3	17.3-19.7	5.0	4.7-5.4
EC	4	35.5	32.9-37.7	18.2	17.2-19.2	5.2	4.9-5.4
SW	2	37.3	35.9-38.6	18.0	17.1-18.8	5.3	5.2-5.4
SC	1	41.2	N/A	17.5	N/A	5.1	N/A
State	44	37.1	32.9-44.1	17.7	14.3-19.7	5.1	4.7-5.6
1996	36	36.6	31.3-42.9	17.3	15.5-19.8	5.6	5.3-6.2

increased 0.9% from 4.3 points in 1996 to 5.4 points in 1997. The average fiber content decreased 0.5% from 1996 while the spread within the range remained the same for both years at 0.9 points.

In upcoming years, as our database begins to grow, a comprehensive comparison between Indiana districts will be possible. Currently, it is not possible to draw statistical inferences based on the low number of samples available thus far.

The results in Table 2 only give an indication of the composition values of soybeans across Indiana. Conditions during the growing season, variety selection, and soil fertility significantly affect intrinsic values. Producers need to have their own samples analyzed to get more precise values. Purdue University's Grain Composition Analysis Service offers NIR analysis on whole corn, soybeans, and soybean meal. This service is offered at *no charge* to Indiana producers, elevators, and processors thanks to a Value-Added Grant from the Office of Indiana's Commissioner of Agriculture. 450 g (about 1 lb.) may be sent to:

Grain Quality Laboratory
1146 ABE
Purdue University
West Lafayette, IN 47907-1146

For further information, call (765) 494-2285, or send e-mail to grainlab@ecn.purdue.edu.

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