Effectiveness of in vitro procedures to estimate CP and amino acid digestibility coefficients in dried distillers grain with solubles by growing pigs. C. Pedersen*, A. Pahm, and H. H. Stein, *South Daktota State University*.

The in vivo digestibility of CP in dried distillers grain with solubles (DDGS) was correlated to values obtained from two enzyme-based in vitro procedures (i.e., a pepsin-based and a pepsin/pancreatin-based procedure). The in vivo digestibility coefficients for both CP and amino acids (AA) in DDGS were also correlated to values obtained using colorimetric assays based on L^*, a^*, and b^* values generated by Hunter or Minolta equipment. Both un-ground and finely ground samples were used in the colorimetric assays. The standardized ileal digestibility coefficients of CP and AA were measured in 14 samples of DDGS using growing pigs equipped with a T-cannula in the distal ileum. The pepsin procedure estimated CP digestibility after 16 h of sample incubation with pepsin at pH 1. In the pepsin/pancreatin procedure, samples were incubated with pepsin for 6 h at pH 2 followed by a 16 h incubation with pancreatin at pH 6.8. Samples were filtrated after the incubation period and the filtrate was analyzed for the concentration of CP. Results showed that the correlation (r^2) between in vivo digestibility of CP and the digestibility obtained using the pepsin procedure was 0.29. For the pepsin/pancreatin procedure, an r^2 value of 0.55 was obtained. The r^2 for the correlation between the in vivo digestibility coefficients and data obtained from the colorimetric assays were higher for the unground compared to the ground samples ($P < 0.05$). Regardless of the sample, the lowest r^2 was found for Trp while the r^2 for Lys were between 0.55 and 0.69. It was also demonstrated that the values obtained using the Minolta equipment were better ($P < 0.05$) correlated to the in vivo values compared to values obtained using the Hunter equipment. It is concluded that the pepsin/pancreatin procedure and the colorimetric assays potentially may be used to predict the in vivo digestibility of CP and AA in DDGS, but additional work is needed to improve the correlations. In particular, it is necessary to obtain in vivo digestibility coefficients for additional samples of DDGS.

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