What is claimed is:

1. A method of analyzing feed for swine or poultry for adjusting the composition thereof, comprising steps of:

a) digesting in vitro a sample of animal feed having an animal feed composition to generate digested animal feed comprising at least one residual component with an unknown concentration, wherein the at least one residual component is selected from the group consisting of protein, phosphorous, fat, gross energy, and carbohydrates, wherein the sample of animal feed consists of swine feed, poultry feed, and mixtures thereof, wherein the animal feed composition comprises one or more of corn, soybean, grain(s), distiller grain(s), legumes, molasses, or a mixture of any thereof, wherein digesting comprises two phases, wherein a phase of the digesting is conducted in vitro at a pH of less than about 7 and includes use of at least one enzyme comprising pepsin, and wherein another phase of the digesting is conducted in vitro at a neutral to acidic pH and includes at least one enzyme comprising pancreatin to provide digested animal feed, and wherein digesting further comprises separating the digested animal feed into a solid component and a liquid component;

b) scanning the solid component of the digested animal feed using a near infrared (NIR) spectrophotometer to generate spectral data;

c) comparing the spectral data generated from scanning the solid component of the digested animal feed to a computer model of the at least one residual component to generate a predicted concentration of the at least one residual component of the digested animal feed, wherein the spectral data is compared using a computer implemented method comprising receiving spectral data from the digested animal feed and comparing the spectral data to the computer model of the at least one residual component to obtain the predicted concentration of the at least one residual component, wherein the computer model has a coefficient of determination (R^2) value of between 50 and 100 for

predicting concentration of the at least one residual component in a sample of the animal feed digested in vitro according to step a);

d) comparing the predicted concentration of the at least one residual component from step c) to a preselected target concentration of the at least one residual component to determine digestability of the component in the animal feed composition of step a); and

e) selecting an adjusted animal feed composition which is different from the animal feed composition of a) and provides the preselected target concentration of the component, based on the determined digestability of the component in the animal feed composition in the comparing step d).

2. The method of claim 1, further comprising f) adjusting an animal feed composition having the composition of the animal feed composition of step a) to obtain the adjusted animal feed composition selected in step e).

3. The method of any one of claims 1-2, wherein the sample of animal feed comprises a pre additive, wherein the pre additive is at least one enzyme.

4. The method of claim 2, wherein adjusting the animal feed composition to obtain the adjusted animal feed composition selected in step e) comprises adding a component selected from the group consisting of protein, phosphorous, fat, and carbohydrates.

5. The method of claim 4, wherein adjusting the animal feed composition comprises adding at least one post additive, wherein the post additive comprises an enzyme which adjusts the amount of the residual component in the digested food.

6. The method of claim 1, wherein the sample of animal feed is swine feed, wherein the phase is conducted for 1 to 6 hours at a pH of less than about 7 and the other phase is conducted for 18 hours to 48 hours at neutral pH to an acidic pH for at least about 6.0, to generate the digested animal feed.

7. The method of claim 6, wherein the pepsin is porcine pepsin and the pancreatin is porcine pancreatin.

8. The method of claim 1, wherein the sample of animal feed is poultry feed, and wherein the digesting further comprises an in vitro digestion phase conducted on the sample of animal feed that includes at least one enzyme comprising phytase.

9. The method of claim 8, wherein the phase that includes pepsin is conducted at a pH of less than about 7 for 30 minutes to 2 hours and the other phase that includes pancreatin is conducted at a neutral pH to acidic pH of at least about 6.0 for 30 minutes to 2 hours, to generate the digested animal feed.

10. The method of claim 1, wherein the at least one residual component is selected from the group consisting of protein, phosphorous, fat, and gross energy.

11. The method of claim 1, wherein the at least one residual component is selected from the group consisting of protein, fat, and gross energy.

12. The method of claim 2, wherein the adjusting of the animal feed composition provides for a decrease in a predicted concentration of the at least one residual component for the adjusted animal feed composition as determined by digesting, scanning, and comparing the adjusted animal feed composition according to steps a), b), and c), as compared to the predicted concentration determined for the at least one residual component of the animal feed composition.