Chicken feathers as oil absorbent

This study dealt with three specific objectives, first of which aimed to distinguish the significant difference in the amount of oil absorbed being treated by human hair and chicken feathers in different concentrations of oil to water. After the using variance analysis with significant interaction, the researchers found that there was a significant difference in the amount of oil absorbed by applying groups of samples containing chicken feathers and human hair under the different absorption time.

The second objective was to determine whether there is a significant difference in the amount of oil absorbed by the chicken feathers and hair in terms of absorption time. It was found out that there is a significant difference in the amount of oil absorbed by the two groups of samples under the same oil-to-water concentration was proven. In the study, therefore, compared with chicken feathers, human hair is considered a better natural absorbent to be used in oil spills. The chicken feather was still proven to be an effective absorbent in oil spill.

It can also be concluded that in terms of absorption time, the longer the absorption time for human hair, the greater amount of oil was absorbed; whereas in chicken feathers, the longer the absorption time, the lesser the amount of oil is absorbed. Therefore, in chicken feathers, absorption time is inversely proportional to the amount of oil absorbed. The third problem focused on the amount of oil left (g/L) by chicken feathers after the chicken feathers were applied. It is related with the amount oil absorbed. The greater the oil absorbed, the lesser the amount of oil left.

The variation of the amount of oil left is affected by the transfer of setup from trays to glass containers. The conclusions were based only on one parameter, oil absorption capacity, since it is the property being tested by the researchers to show a significant difference among the different variables. Recommendations In the methodology, the researchers used aluminium foil after the samples were transferred from trays to glass containers to prevent the moisture from the environment to have contact with the samples.

For researchers who want to pursue such study, it is better to use glass trays to lessen the amount of oil displaced. For the chicken feathers, other researchers may remove the rachis, the main shaft of a feather. In this study, the researchers didn’t remove the rachis of the feathers since it is a natural way of absorbing oil as being exemplified by living birds. The proponents examined the effect of absorption time and oil-to-water proportion to compare the oil absorption capacity of chicken feathers and human hair. Future studies can further test the water absorption of human hair and chicken feathers.

Such studies can also investigate the amount of water being absorbed by the sorbents as they are applied to the setup. A study conducted by Prasertsuk et. al. (2002) can also be conducted wherein future researchers can study applications of five natural absorbent tested in many forms. These forms include comparisons of absorbent properties, treating material, etc. Prasertsuk et. al. ‘ s research, four key properties were evaluated, namely fiber structure, humidity, water absorption capacities, and oil absorption capacities.