

A Few Commonly Consumed Beans' SDS-Page Protein Profiling

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Abstract

Beans are frequently used to prepare delicious foods and are primarily made of protein. In this study, we investigated the protein content of seven species of regularly consumed beans, including split seeds of *Pisum sativum* (golden gramme), *Arachis hypogaea* (peanut), *Hordeum vulgare* (barley), *Vigna radiata* (green bean), *Vigna angularis* (red bean), and *Phaseolus vulgaris* (black turtle beans). The proteins were extracted using tris buffer after the beans were all ground into a fine powder. The protein from the beans was separated into similar amounts using SDS-PAGE. Black turtle beans had the highest protein content, whereas golden gramme had the widest range of protein kinds, according to our research. The least amount and variety of proteins were identified in barley. The variation in the protein profiles of the different beans show that while they are all high in protein, they may not all provide the same nutritional benefits for human health.

Discussion

As a result of their high protein content and widespread use as legacies over the globe, beans add nutritional value to our diets. The seed coat of the beans washed off by soaking them in water before the protein content of the beans was examined. The beans were then baked to dry them until there was no difference in their dried weight. When compared amongst the 7 beans tested, red beans were shown to have the maximum water absorption capacity, while green gramme was with the lowest water absorption capacity. The difference between the weight before and after drying reflects the water absorption capacity of the beans. Barley has a slightly lower total protein level than other forms of. Compared to other beans of comparable weight, barley has a substantially lower protein level. Similar amounts of protein were employed in this study's SDS-PAGE analysis. The electrophoretic migration of the numerous bands varies

from bean to bean, despite the fact that the majority of the abundant proteins detected in all the beans fell within the range of 37 to 75 kD. This suggested that each bean contained a unique sort of protein. In Diagram 1, lanes 5 and 6 were for green beans and green grammes, respectively. These two beans have the exact same band designs. They belong to the same species, which explains why. Despite the fact that all beans come from seeds, the variations in their protein profiles show that they are composed of various protein subtypes, each of which may have a specific nutritional value that our bodies require. Barley has a lower overall protein level than other forms of beans. According to data from a protein assay, a comparable amount of protein was employed in this study's SDS-PAGE analysis. We discovered that beans with comparable protein content make for better comparative studies.

Conclusion

For an equivalent dried weight of beans, black turtle beans had the highest protein content whereas barley had the lowest. Among the beans, golden gramme has the widest range of protein. Due to their similar species, green beans and green gramme both have the same type of proteins. Although all beans have proteins, the variation in their protein profiles showed that each bean's nutritional worth was distinct from that of the others, despite the fact that all beans contain proteins.

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