

**EFFECT OF GAMMA RADIATION AND TEMPERATURE ON
SOME BIOCHEMICAL COMPONENTS OF PLANT**

By



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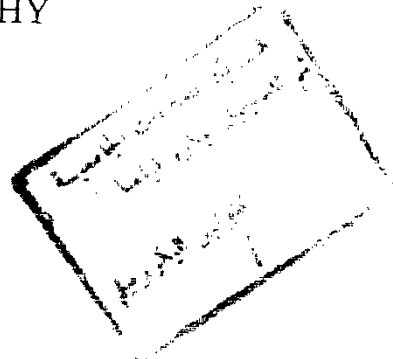
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ABSTRACT

Gamma radiation (5, 10 and 15 KGy) of biochemical components
of soybean, Peanut and Fenugreek seeds induced a decrease in moisture
content, total lipids, unsaturated fatty acids and protein content.

Slight decrease in total soluble sugars were revealed in Soybean and Peanut seeds, while gamma radiation did not effect on total soluble sugars in Fenugreek seeds.

Gamma radiation (1, 2, 3, 4 and 5 K rad) caused increase in peroxidase and catalase activity by doses from 1 to 4 K rad but dose 5 Krad caused decrease in peroxidase and catalase activity in Soybean, Peanut and Fenugreek seedlings.

Heat treatment at 80 °C induced a change in moisture content, total lipid, fatty acids and protein content of Soybean, Peanut and Fenugreek seeds and slight increase in total soluble sugars.

Microwave heating with 5, 10 minutes caused lowering in moisture content under this study, while total protein content was not affected. Total soluble sugars increased meanwhile total lipids decreased.

Fatty acids of soybean generally increased except palmitic acid which decreased while fatty acids peanut oil decreased except oleic and linoleic acids increased. Microwave treatment led to increase linolenic acid in fenugreek seeds and at the same time decrease linoleic acid.

SDS- polyacrylamide gel electrophoresis howed slight change in protein profile with gamma radiation and storage for eight months , but the numbers of protein subunits decreased as affected by different doses. Also the same effect with heat treatment at 80 °C for different periods was noticed.

Key Words

- **Gamma radiation**
- **Heat treatment**
- **Microwave**
- **Soybean**
- **Peanut**
- **Groundnut**
- **Fenugreek**
- **Enzyme**
- **Peroxidase**
- **Catalase**

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CONTENTS

| | Page |
|--|-----------|
| 1. ABSTRACT | |
| 2 ACKNOWLEDGMENT | |
| 3. LIST OF TABLES | |
| 4. LIST OF FIGURES | |
| I. INTRODUCTION | 1. |
| II. REVIEW OF LITERATURE | 4. |
| - Effect of gamma radiation, heat treatment, microwave. treatment . 4 and storage on chemical constituents :..... | |
| 1. Moisture contents | 4 |
| 2. Carbohydrate content | 7 |
| 3. Lipid and fatty acids contents..... | 10 |
| 4. Protein content | 16 |
| 5. Electrophoretic studied on seeds proteins of legumes..... | 22 |
| 6. Peroxidase and catalase | 28 |
| 7. Effect of microwave heating | 31 |

| | |
|---|----|
| III. MATERIALS AND METHODS | 37 |
| A. Materials | 37 |
| 1. Samples | 37 |
| 2. Classification of groups | 37 |
| B. Analytical methods | 38 |
| 1. Determination of moisture | 38 |
| 2. Determination of crude protein | 38 |
| 3. Determination of total lipids | 39 |
| 4. Determination of fixed oil fractions | 40 |
| 5. Determination of carbohydrate fractions | 40 |
| 6. Extraction and electrophoretic analysis of soluble protein | 40 |
| 7. Determination of enzyme activity | 46 |
| 7(a). Peroxidase activity | 46 |
| 7(b). Catalase activity | 47 |
| IV. RESULTS AND DISCUSSION | 48 |
| A. Effect of gamma radiation and storage on: | |
| 1. Moisture content of soybean seeds | 49 |
| 2. Moisture content of peanut seeds | 51 |
| 3. Moisture content of fenugreek seeds | 53 |
| 4. Total soluble sugars of soybean seeds | 55 |

| | |
|---|-----|
| 5. Total soluble sugars of peanut seeds | 57 |
| 6. Total soluble sugars of fenugreek seeds | 59 |
| 7. Total lipids content of soybean seeds | 61 |
| 8. Total lipids content of peanut seeds | 63 |
| 9. Total lipids content of fenugreek seeds | 65 |
| 10. Fatty acids content of soybean seeds | 67 |
| 11. Fatty acids content of peanut seeds | 79 |
| 12. Fatty acids content of fenugreek seeds | 91 |
| 13. Crude protein content of soybean seeds..... | 101 |
| 14. Crude protein content of peanut seeds..... | 109 |
| 15. Crude protein content of fenugreek seeds..... | 116 |

B. Effect of heat treatment and storage on:

| | |
|---|-----|
| 16. Moisture content of soybean seeds | 122 |
| 17. Moisture content of peanut seeds | 124 |
| 18. Moisture content of fenugreek seeds | 126 |
| 19. Total soluble sugars of soybean seeds | 128 |
| 20. Total soluble sugars of peanut seeds | 130 |
| 21. Total soluble sugars of fenugreek seeds | 132 |
| 22. Total lipids content of soybean seeds | 134 |

| | Page |
|---|------|
| 23. Total lipids content of peanut seeds | 136 |
| 24 Total lipids content of fenugreek seeds | 138 |
| 25. Fatty acids content of soybean seeds | 140 |
| 26. Fatty acids content of peanut seeds | 147 |
| 27. Fatty acids content of fenugreek seeds | 153 |
| 28. Crude protein content of soybean seeds..... | 159. |
| 29. Crude protein content of peanut seeds..... | 164 |
| 30. Crude protein content of fenugreek seeds..... | 171 |

**C. Effect of microwave heating on biochemical composition of
soybean, peanut and fenugreek seeds**

| | |
|---|-----|
| 31(1).Effect of microwave heating on moisture content | 176 |
| 31(2) Effect of microwave heating on protein content | 177 |
| 31(3).Effect of microwave heating on total soluble sugars. | 178 |
| 31(4). Effect of microwave heating on oil content | 179 |
| 32. Effect of microwave heating on fatty acids | 181 |

| | Page |
|--|------|
| D. Effect of gamma radiation on enzyme activity | |
| 33. Effect of gamma radiation on peroxidase activity of soybean seedlings | 194. |
| 34. Effect of gamma radiation on peroxidase activity of peanut seedlings | 196 |
| 35. Effect of gamma radiation on peroxidase activity of fenugreek seedlings | 198 |
| 36. Effect of gamma radiation on catalase activity of soybean seedlings | 200 |
| 37. Effect of gamma radiation on catalase activity of peanut seedlings | 202 |
| 38. Effect of gamma radiation on catalase activity of fenugreek seedlings | 204 |
| VI. English Summary | 206 |
| V.References..... | 213 |
| VI.Arabic Summary..... | |

LIST OF TABLES

| No. | Page |
|--|------|
| 1. Effect of gamma radiation and storage on moisture content of soybean seeds | 50 |
| 2. Effect of gamma radiation and storage on moisture content of peanut seeds | 52 |
| 3. Effect of gamma radiation and storage on moisture content. of fenugreek seeds | 62 |
| 4. Effect of gamma radiation and storage on total soluble sugars of soybean seeds | 56 |
| 5. Effect of gamma radiation and storage on total soluble sugars of peanut seeds | 58 |
| 6. Effect of gamma radiation and storage on total soluble sugars of fenugreek seeds | 71 |
| 7. Effect of gamma radiation and storage on total lipid of soybean seeds | 74 |
| 8. Effect of gamma radiation and storage on total lipid of peanut seeds | 75 |

| No | Title | Page |
|-----|---|------|
| 9. | Effect of gamma radiation and storage on total lipid of fenugreek seeds | 79 |
| 10. | Effect of gamma radiation and storage on fatty acids of soybean seeds | 82 |
| 11. | Effect of gamma radiation and storage on fatty acids of peanut seeds | 85 |
| 12. | Effect of gamma radiation and storage on fatty acids of fenugreek seeds | 89 |
| 13. | Effect of gamma radiation and storage on crude protein of soybean seeds | 92 |
| 14. | Effect of gamma radiation and storage on crude protein of peanut seeds | 95 |
| 15. | Effect of gamma radiation and storage on crude protein of fenugreek seeds | 98 |
| 16. | Effect of heat treatment at 80 °C and storage on moisture content of soybean seeds | 108 |
| 17. | Effect of heat treatment at 80 °C and storage on moisture content of peanut seeds | 110 |