

It must be emphasized that these samples were not classified as to variety and they originated in different growing areas so that the differences in the various analytical factors cannot be attributed entirely to immaturity and frost damage. In the Minnesota series, compositing doubtless tended to reduce the influence of varietal and environmental factors; this is indicated by the rather uniform trends in the relations between damaged seed content and several of the variables which were studied. Such uniformity did not appear in the Illinois series, which comprised individual samples. It is clear that the effect of immaturity and frost damage on proximate composition is relatively insignificant. Within the limitations of the utility of proximate analyses as an index of feeding value, there is no relation between damage and the value of soybeans for feeding purposes. Neither do the oil content and iodine values indicate any pronounced inferiority of heavily frost damaged samples for oil production. It is realized, however, that processing value depends upon other factors, such as oil color. While no quantitative measurements were made, an increasing green coloration of the oils was observed with increasing damage.

Although differences in proximate composition were not reflected by damaged seed content, the germination and the internal microfloral content of the seeds were closely related to damage, particularly in the Minnesota series. The higher microfloral content of frost damaged seeds implies that low grade soybeans would be more critical in their storage requirements than sound beans. Whether the meals from such frost damaged beans would also involve a greater storage hazard will depend upon the extent to which the organisms are killed by the processing treatment.

Summary

Seven composite samples of Minnesota grown soybeans and seven individual lots of Illinois soybeans of

the 1942 crop containing varying percentages of immature and frost-damaged seeds were subjected to various analyses.

Increased damaged-seed content was accompanied by a marked decrease in viability and by increases in phosphate acidity, amino-acid acidity, nonprotein nitrogen, reducing sugars, and in the internal aerobic microfloral content of the seeds.

Proximate composition of the samples within each series showed little variation. In the Minnesota series, crude fiber content slightly decreased with increasing damage but the total digestible nutrients values were essentially similar for all samples.

The most severely damaged samples in each group were slightly the lowest in test weight per bushel and oil content and were the highest in oil acidity. In the Minnesota series, the iodine value of the oil tended to increase slightly with increasing damage; this is attributed to the fact that the most severe frost damage occurred in growing areas which normally produce oil of high iodine value.

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Book Review

"The Dispensatory of the United States of America," by Horatio C. Wood, Jr., and Arthur Osol; assisted by Heber W. Youngken and Louis Gershenfeld. The 23rd edition, published by J. B. Lippincott Company, Philadelphia, London, Montreal. 1943. XIX + 1881 pp. 7 x 10.5 in. Price \$15.00.

A reference book that can go through 23 editions and that has served its field for 110 years has undoubtedly proved its value. It covers the drugs, their formulas, directions for preparation and official test of the U. S. Pharmacopeia XII and National Formulary VII, formulas for clinical laboratory reagents,

war emergency replacements, trade names, drugs and preparations of the British Pharmacopeia and much other useful information. The detailed descriptions include chemistry, botany, manufacture, pharmacy, dosage, physiological action, therapeutic uses, and toxic properties.

The book is most valuable to pharmacists. However, many others, as pharmacologists, chemists, biologists, etc., will find it a useful and convenient reference book. Definitions, specifications and descriptions of the various fats, oils, soaps, volatile oils, medicinal oils and ointment bases that are used in the drug trade should not be overlooked by individuals in the fat, oil and soap industry.

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