• *Fats and Oils Report*

Soybean Loan Program Economics

Soybeans are useless in raw form. Corn, wheat, oats, rye, etc., may be fed on farms where produced when more profitable than selling. But soybeans must enter commercial channels for processing into oil and meal before they have economic value.

Soybean processors will buy beans for processing when they can realize a profit from the sale of oil and meal. The proportion of profit from oil compared with meal constantly fluctuates. During the past ten years meal has carried the largest share of profit. A processor can sell the oil considerably cheaper when meal price is high, and conversely when oil is high the meal can be sold cheaper.

When combined return from oil and meal is less than the cost of beans, processors slow down the crush to force an improvement in product return. For a short time they may continue to operate at a loss in order to keep commitments and favored clients, but eventually crush must be curtailed. Sometimes it is stopped completely until a correction takes place.

Soybean oil can be stored for a long time while soybean meal has a short storage life. Thus we see a correlation between meal demand and soybean crush. With increased meal demand there is increased crush to meet that demand. Usually meal price goes up in order to stimulate the increased crush. Oil demand oftentimes does not keep pace so the extra oil goes into inventory.

If normal economic laws were applied to this situation, soybean oil when in surplus would trade at lower than current prices. But this has not happened because of USDA purchase programs and P.L. 480 provisions, whereby oil price is, in effect, supported in order to keep meal from going too high and thereby raising the price of meat. This brings us back to where we started; i.e., crushing profits must come from product return.

Product return is also related to raw material cost. When return from products dictates soybean price at or near government loan level, then users of beans (processors and exporters) must compete with the loan program for supplies. This competition is most keen during the first four months of the season, September through December. It is during these critical months that the pattern may be set for the season. When loan entries are low in the period crusher purchases (as determined by the "stocks at mills" figure) are high, and vice versa. (Fig. 1 and 2). Price alone is not a determinant in this relationship. Most likely anticipated later prices influence these decisions, though the realized later price may be quite different from the anticipated price.

If loan level is too high, the users of beans are forced to utilize substitutes for oil and meal. This applies to both domestic and foreign users. Such a situation also creates a climate for expansion of competing oil and protein sources. The net result is that more beans end up in the loan program, which must eventually come out into market channels. Until the loan rate is reduced, or some other influence such as adverse weather changes the economic situation, many beans are produced solely for the loan market.

Under the current soybean loan price umbrella there has developed large scale substitution of sunflower and other oils in most foreign markets, and to some extent in the U.S. Similarly, there is expanding substitution of fishmeal and urea as a source of protein. This trend will continue if soybeans remain at noncompetitive price levels.

It now appears that the expansion phase for soybean meal demand is ending. Substitutable urea has become firmly entrenched. Those who have made the switch express satisfaction with the economy and ease of handling. More switching is bound to occur. High-lysine corn is just around the corner, which should displace soybean meal in rations where urea is not practical. Farmers will gladly continue to produce soybeans at a national average loan level of $2.50 per bushel, even though the only outlet is the government loan program, and buy alternate sources of protein for livestock feeding.

Solutions to the problem point in one direction; lower soybean support price. This would permit beans to trade at higher prices when demand for products justify, but would reduce the uneconomic planting of beans for disposition via the loan program. Only competitive prices for soybean oil and meal will keep substitutes from taking over the market at a more rapid rate.

It must be remembered that there are substitutes for soybean oil and meal, and nothing drives users to substitutes faster than uneconomic pricing practices. The day is not far off when high-lysine corn and urea will greatly reduce the demand for soybean meal. And as this draws near the users of oil will look to other oil-bearing crops which yield a higher percentage of oil per unit crushed. Under such conditions it will become increasingly difficult to dispose of soybean inventories acquired by the government or stored by farmers under high-level price support programs.

Lower loan prices are not politically compatible in an election year such as 1968. But if there is no change, an expansion in acreage may well be in prospect. That $2.50 national average loan looks mighty good to farmers who received only 65¢ on corn with moisture discounts. This could off-set expected bean acreage reductions due to adjustments in cotton, rice, wheat and feed grain programs. There will likely continue southern bean expansion on reclaimed timber and other land. There could easily be more soybeans in the Midwest also. The wet fall retarded harvest of corn and kept farmers from fall plowing and fertilizer application. This means that with less than optimum weather for field work next spring there would be less corn planted and more soybeans since beans can be planted later.

Under present conditions every bushel of soybeans is eligible for loan. There are no acreage restrictions and

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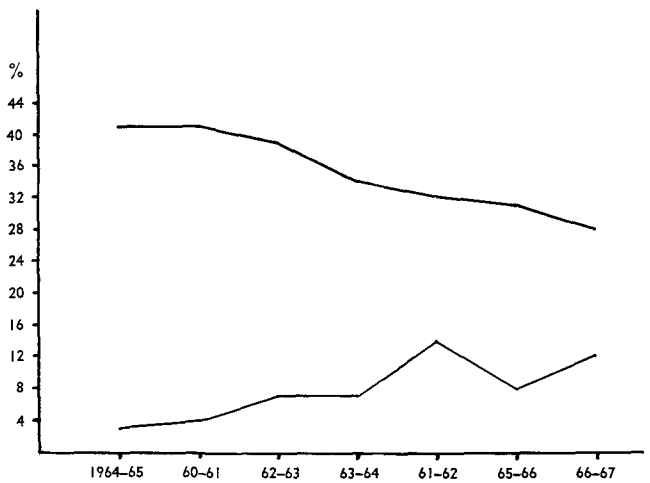

FIG. 1. *Above,* Sept.-Dec. purchases by crushers as percentage of crop. *Below,* Sept.-Dec. loan entries as percentage of crop.

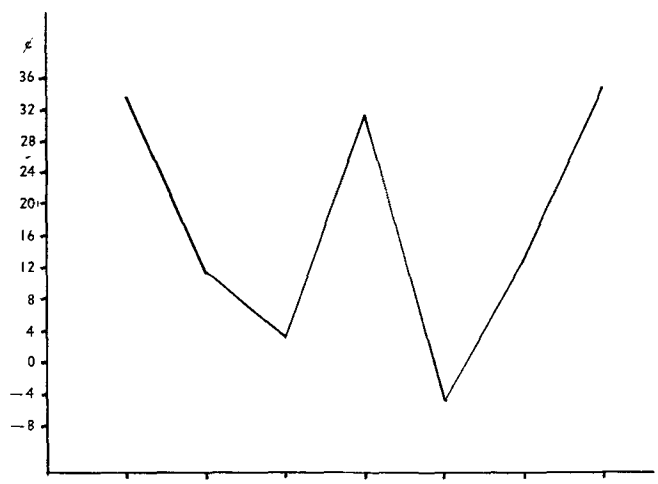

FIG. 2. Sept.-Dec. average farm price vs. loan level.

Report of the AOCS Industrial Oils and Derivatives Committee

K. E. HOLT, Chairman

THERE ARE CURRENTLY seven active subcommittees in the Industrial Oils and Derivatives Committee. Following is a report on the activities and plans of these subcommittees.

Drying Oils Subcommittee—D.S. BOLLEY, Chairman

The Drying Oils Subcommittee has reached the collaborative phase in their development of an instrumental method for measuring haze in drying oils. The method under investigation uses a Nephelometer. Additional collaborators are needed and any laboratory having a Nephelometer and willing to participate is requested to contact the Subcommittee chairman.

Polymerized Acids Subcommittee—HAROLD FISHER, Chairman

The Subcommittee is initiating a collaborative program to check the suitability of ASTM method D445 for measuring the Kinematic Viscosity of polymerized acids. Three samples representing various grades of polymerized acids will be distributed to four laboratories. The measurements will be made at 100F and 210F.

Methods for determination of composition of polymerized acids are in the process of development in several laboratories. Problems on reproducibility have been encountered and the Subcommittee will delay their study of these methods until the problem is resolved.

Dibasic Acids Subcommittee—E. N. GERHARDT, Chairman

Methods for Acid Value (Purity by Total Acidity) and Color (by APHA) have been approved by the Subcommittee and will be submitted to the Industrial Oils and Derivatives Committee for letter ballot approval.

The Subcommittee plans will focus on the development of official methods for freezing point and color stability of dibasic acids. AOCS method Tr-1a-64T, titer of Fatty Acids will be modified for use on dibasic acids and submitted to the Subcommittee for approval prior to a collabborative study. Methods for measuring color stability of dibasic acids are being solicited by the Subcommittee chairman.

Hydrogenated Oils Subcommittee—R. O. WALKER, Chairman

A collaborative study is planned on a colorometric method for determination of nickel in hydrogenated oils. A hydrogenated castor oil will be used and those laboratories that have atomic absorption equipment are being requested to check the sample by both methods. Modifications to method Tl-1a-64T Saponification Value and Tk-1a-64T Unsaponifiable Matter are being proposed by the Subcommittee and will be submitted for letter ballot approval.

Fatty Nitrogen Subcommittee—H. W. JACKSON, Chairman

A collaborative study is under way using GLC for determination of Primary Fatty Amines. A standard mixture of fatty amines is being run using a TFA derivative and a dimethyl amine derivative. It is hoped that a tentative primary amine method will evolve from this study.

Future plans include a study of a method for total amide using IR spectroscopy.

Commercial Fatty Acids Subcommittee—R. O. WALKER, Chairman

The official AOCS method Td-3a-64 Color After Heating continues to be studied in an attempt to develop a method that gives a more critical evaluation of fatty acid stability and has better precision.

The precision of the Gardner Color Method is a definite factor in the precision of the Color After Heating Method and the next collaborative study will be designed to minimize the effect of precision in reading Gardner Colors.

Epoxidized Oils Subcommittee—W. F. GOLDSMITH, Chairman

The Subcommittee completed their collaborative study on the "Jay" method for oxirane oxygen, comparing it with the official AOCS method Cd-9-57. The Subcommittee decided to submit the Jay method to Industrial Oils and Derivatives Committee letter ballot, however, this decision was not unanimous.

The "Jay" method gives slightly higher results than the official method but the results are not above theoretical. The reagents used in the "Jay" method have greater stability than those used in the official method; this reduces standardization time but the cost of the two methods is about the same due to higher cost of Jay method reagents.

The precision of the AOCS method is better than the Jay method; this may be partially due to a greater familiarity of the participating labs with the official method. The precision on both methods is acceptable.

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no need to comply with other control programs. Unless some change in the program is made, there exists a real possibility that the 1968 crop will equal or exceed the 1967 crop even though there appears no fundamental demand for oil and meal of this magnitude.

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Commodity Analyst
Merrill, Lynch, Pierce, Fenner & Smith Inc.

• *Obituary*

W. S. Belden (1921) died Jan. 11, 1968, in Fresno, Calif.