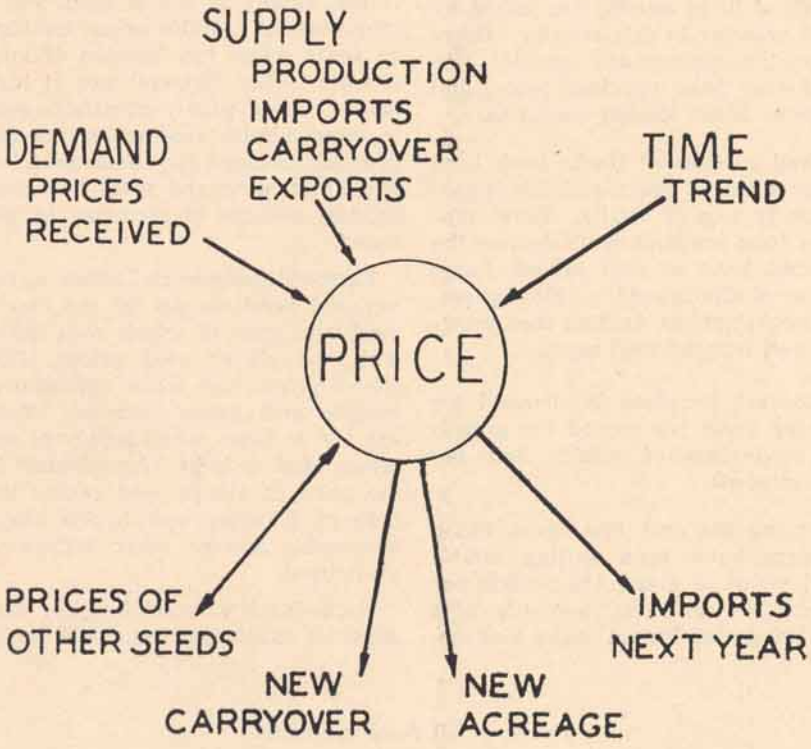
UNIVERSITY OF IDAHO
College of Agriculture

Marketing Forage Seeds

KERMIT BIRD



DEMAND AND SUPPLY FOR ALFALFA SEED

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Summary Highlights

UNITED States farmers increased their use of alfalfa seed 500 percent during the last 35 years. In 1919, they used 27 million pounds; in 1953 174 million pounds.

Over the same period, red clover seed use doubled, from 40 million to 87 million pounds.

Where does this seed come from? Much of it, of course, was raised by seed growers in this country. Other important sources are supplies carried over from previous years, and imports from foreign countries.

Seed carry-over stocks have been large in recent years, and this is particularly true of alfalfa. These supplies from previous years depress the general level of seed prices. Large stocks of alfalfa seed in 1953 depressed market prices, hurting seed growers and helping seed users.

General increases in demand for legume seeds has caused the growth in production of alfalfa and red clover seeds.

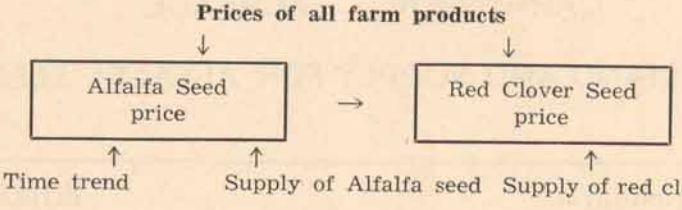
During the past few years, Idaho farmers have been getting alfalfa seed yields of about 110 pounds per acre. This compares favorably with the 100-pound United States average, but unfavorably with some areas which get 250-300 pounds per acre.

Red clover yields in Idaho have been higher than other states, averaging 258 pounds per acre. United States average is 52 pounds per acre.

Idaho seed prices are associated with the same factors which affect national seed prices: general level of national farm prices and farm incomes, supply of alfalfa seed, and a "time trend." Alfalfa prices are high in years when the incomes of purchasers (other farmers) are at high levels. When supply of alfalfa seed is large, alfalfa seed prices are depressed. Demand for alfalfa seed has been increasing and price has risen slightly because of increases in demand.

Farmers' incomes and prices at the national level, supply of red clover seed, and price of alfalfa seed influence red clover seed prices. Red clover prices rise when agricultural income and prices increase. They are low in years when supply of red clover seed is large. An advance in the price of alfalfa seed causes the price of red clover seed to rise. These statements assume other influences unchanged.

Following is a demand-supply diagram for alfalfa and red clover seeds:



Note that prices of both seeds are dependent on the general level of all farm prices. Supply of each seed affects the price of that seed. Time trend has been important to alfalfa seed, but not to red clover prices. Alfalfa seed price influences red clover seed price, but red clover price does not influence alfalfa seed price to any great extent.

Seasonal averages show it would pay farmers to store seed until spring or summer when prices are higher. The gain for holding alfalfa seed until this period is about $2 to $2.50 per hundredweight.

Similarly, red clover seed growers should store seed until February or April. Their gain for storage would be between $3 and $4 per hundredweight.

During the 1920's the consumer's dollar for seeds was distributed 72 percent to the farmer, 15 percent to the wholesaler, and 13 percent to the retailer. These margins have changed so that in the early 1950's the farmer gets about 60 percent of the retail seed dollar, wholesaler 28 percent, and retailer 12 percent.

One reason for this larger return to the wholesaler is that he is now providing more services. He performs such added service as handling more varieties, more germination and purity tests, more and better cleaning services, guarantees, certification, and smaller packages.

Acknowledgments

COOPERATION of the 164 seed growers and 33 seed dealers in Idaho who gave information in our seed survey is hereby acknowledged. Dr. W. E. Folz, Head, Department of Agricultural Economics, and members of the Agronomy Department of the University of Idaho made constructive suggestions.

This report is based on a study financed in part by funds provided by the Agricultural Marketing Act of 1946 (RMA, Title 1, Section 9 b3). Other states cooperating in this WM-12 regional project are: Washington, Wyoming, Oregon, and Utah.

These questions and others are answered in this bulletin. For answers to questions on other agricultural subjects consult your county extension agent.

Marketing Forage Seeds

KERMIT BIRD[1]

FORAGE seeds are a major crop in Idaho. The 1950 census reports 4500 Idaho farms raising small seeds with a value of 6 million dollars. Alfalfa and red clover seeds are the two most important small seeds produced in the state, with about 90 percent of the growers of small seeds raising one or the other. Because of the importance of these two seeds, major emphasis in this report is on them.[2]

This study is to acquaint growers, seed dealers, and others with the marketing system for small seeds. During 1953 a survey of seed growers and seed dealers was made within the state. Visited were 164 farmers and 33 seed dealers in the 8 most important seed producing counties: Canyon, Owyhee, Gooding, Twin Falls, Bingham, Nez Perce, Lewis, and Idaho. These farmers and dealers gave information on seed growing and marketing practices. Other sources provided information on seed prices and factors influencing them .

The seed analysis section is short and gives only results and conclusions. A supplemental report is devoted to price and demand analyses and covers them in detail.[3]

REVIEW OF ECONOMIC TRENDS

Acreage

Idaho's alfalfa seed acreage is concentrated in the Boise Valley, southcentral Idaho and the Blackfoot section. Red clover seed is grown in almost all farming areas, including the Palouse and Camas prairies of northern Idaho—counties of Nez Perce, Lewis, Idaho,

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[1] Assistant Agricultural Economist

[2] To provide growers and dealers with economic information about the small seed industry, the following reports covering parts of this study were sent to growers and dealers while the material was being analyzed: "Small Seed Producing Areas, May 8, 1954;" "Destination of Small Seeds Produced in Idaho, May 8, 1954;" an unnamed report dealing with seed farm characteristics and processing rates, December, 1953; and another unnamed report dealing with cleaning and marketing of small seeds in Idaho, April 1, 1954.

[3] "Demand Characteristics of Alfalfa and Red Clover Seeds," a mimeograph analysis of prices and demand which may be obtained from the Department of Agricultural Economics, University of Idaho, Moscow, Idaho. The supplement also gives an explanation of procedures and sources of data for this bulletin.

and Latah. Ladino clover is produced in almost all of the farming areas. Bromes, fescues, bluegrasses, and oatgrasses are raised in higher elevations of southern Idaho and in cooler temperatures provided in northern Idaho. Wheatgrasses are found in both dryland farming areas in northern Idaho and on irrigated land in southern Idaho.

Changes in acreage

From 1919 until 1953, acreage of alfalfa seed in Idaho remained about the same. However, acreage in the United States increased about five-fold. Net effect was that Idaho, even though maintaining about the same acreage, lost some of its relative importance as an alfalfa seed producing state (Figure 1, Panel A).

Idaho's red clover seed acreage has varied but there has been no noticeable trend in the 1919-1953 period. United States acreage was high during the 20's, dropped during the 30's and rose to high levels during the 40's and 50's. Acreage, however, does not give a true picture of Idaho's importance as a red clover producing state. Idaho has had high yields and, even though it had only 3 percent of the acreage, has been producing about 8 percent of the red clover seed (Figure 1, Panel B).

Red clover seed harvested acreage in United States has been quite erratic. Main reason is that much of the red clover seed acreage is located in Illinois, Indiana, Iowa, Ohio, and Missouri. These are non-specialist producing states, and their harvested acreage depends to a large extent on weather conditions which may or may not provide a "set" of seed. In "non-set" years producers find alternative uses for the crop such as hay or pasture.

Alfalfa seed cycle

Acreage of alfalfa seed in United States shows a cyclical movement (Figure 2). Cyclical movements occur in production and prices of hogs, sheep, cattle, and some crops. Generally the generating forces of cycles are supplies and prices, coupled with farmers' attempts to respond to price changes. Differences in lengths of cycles depend on the speed with which market supplies can be increased or decreased under practical farm conditions. With alfalfa seed we surmise regular increases and decreases in acreage are results of farmers' responses to prices. Figure 2 shows alfalfa seed acreage and prices. Price changes were followed by changes in acreage. Generally the acreage change came one year after the price change. Analysis shows that previous year's price does have an important bearing on the current year's harvested acreage.

The alfalfa seed acreage cycle occurred about every five years. Length of cycles is usually associated with length of time it takes to get into production and complete a life cycle. Agronomists estimate that a field of alfalfa seed may have an average life of 5 years and this may be the answer.

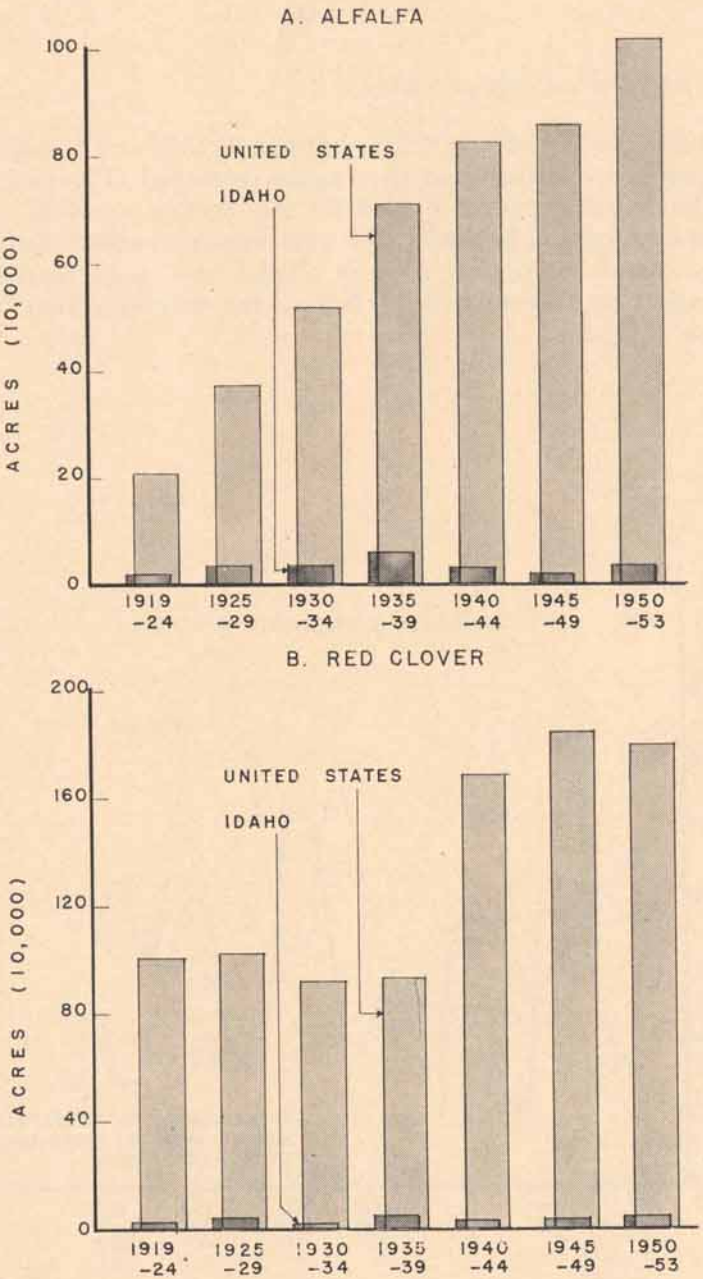

Figure 1—Acreage of alfalfa and red clover seed harvested in the United States and Idaho, 1919-53. United States alfalfa seed acreage has increased five-fold and red clover acreage has doubled.

YIELD

Idaho and United States yields

Alfalfa seed yields in Idaho dropped in 1935 and remained low until the early 1950's when they again increased (Figure 3, Panel A). There were several reasons for this decline in yields. Lygus bug infestation and bacterial wilt were severe in alfalfa fields, and natural insect pollinators, such as alkalai bees, were scarce. Undoubtedly new insecticides coming on the market contributed to the rise in yields.

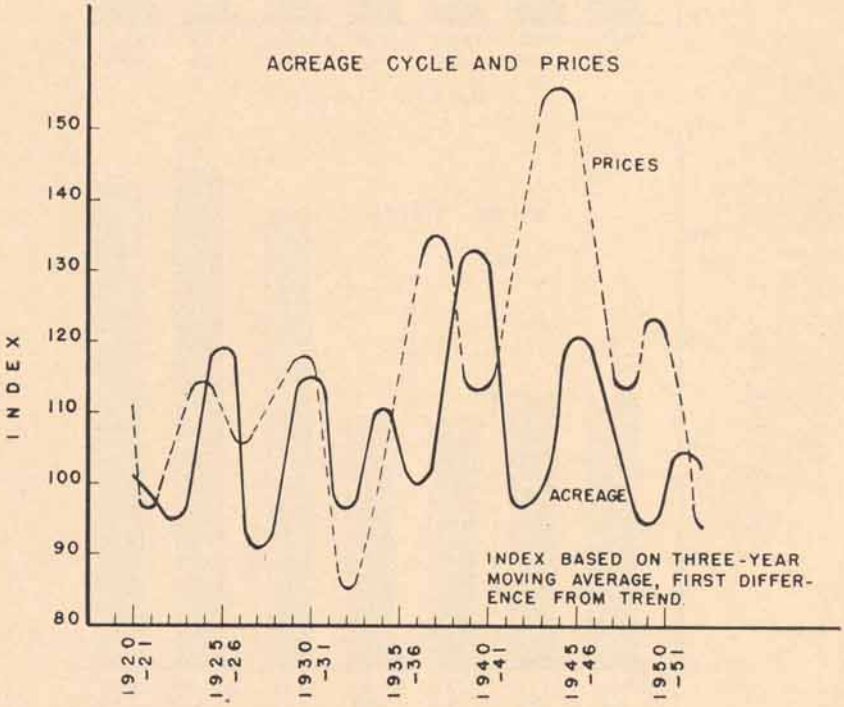

Figure 2—Alfalfa seed acreage cycle and alfalfa seed price cycle, 1919-53. Cycle is about five years in length and caused by farmers' responses to seed prices of previous years.

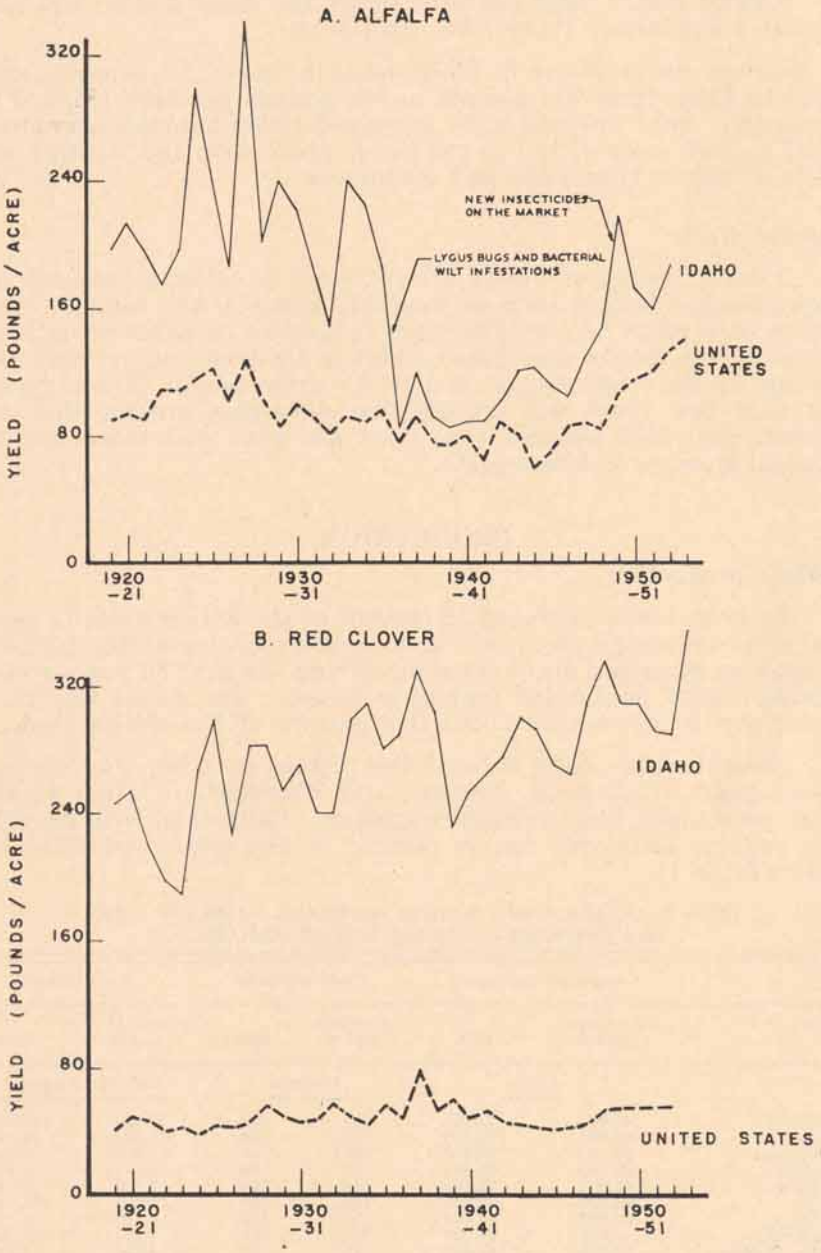

Figure 3—Yield of alfalfa and red clover seed, United States and Idaho, 1919-53. In both seeds Idaho has had higher yields than the national average.

United States yield per acre shows the same decline and rise but at a somewhat lower level than Idaho.

Average clover yields in Idaho have increased 50 percent from 1919 to 1953, from 200 pounds to 300 pounds per acre (Figure 3, panel B). Seed growers have increased yields through a gradual shift to land more suited to red clover production and through effects of newer knowledge and techniques.

Future yields

Future trends of yields are difficult to estimate because of unpredictable factors such as weather, diseases, and insects. Location of acreage has become more favorable, varieties being harvested in the future may become higher yielding, and growers are adding to their knowledge on how to grow seeds. Thus, yields the next few years will probably be somewhat greater than at present, provided weather conditions are good and there are no unusual diseases or insect pests.

PRODUCTION

Idaho's production

In 1920, Idaho produced 18 percent of the nation's alfalfa seed and occupied second place among the seed-producing states. Idaho's production remained about constant during the next 30 years while United States' production rapidly increased. The result was that Idaho now produces only about five percent of the alfalfa seed.

Several states have entered the picture in a big way during recent years—California, Arizona, and Washington. High yields have encouraged their expanded acreage. California, with 59 million pounds, accounted for 39 percent of the total production in 1954 (Table 1).

Table 1—Alfalfa seed: Acreage harvested, yields per acre, and production—average 1943-52 and 1954.*

State	Acreage harvested		Yield per acre		Production	
	Average 1943-52	1954	Average 1943-52	1954	Average 1943-52	1954
	Acres		Pounds		Thousand pounds	
California	48,800	123,000	230	480	13,520	59,040
Kansas	156,000	142,000	76	100	12,880	14,200
Oklahoma	96,400	58,000	101	145	9,900	8,410
Nebraska	109,700	64,000	71	90	8,400	5,760
Arizona	42,900	32,000	172	190	7,400	6,080
Utah	46,500	50,000	130	200	6,480	10,000
Montana	84,600	79,000	76	105	6,340	8,295
Washington	9,820	24,000	286	495	4,597	12,375
South Dakota	80,000	140,000	53	50	4,366	7,000
Idaho	27,500	28,000	106	170	3,150	4,760
U. S. Total	973,570	950,500	96	165	94,773	156,738

*Source: **Seed Crops**, United States Department of Agriculture, Agricultural Marketing Service, October 19, 1954.

Table 2—Red clover seed: Acreage harvested, yield per acre, and production—average 1943-52 and 1954.*

State	Acreage harvested		Yield per acre		Production	
	Average 1943-52	1954	Average 1943-52	1954	Average 1943-52	1954
	Acres		Pounds		Thousand pounds	
Iowa	306,900	94,000	42	40	12,730	3,760
Illinois	299,200	113,000	40	40	12,040	4,520
Missouri	164,500	81,000	61	45	10,090	3,645
Ohio	227,900	155,000	42	45	9,820	6,975
Michigan	180,700	195,000	52	65	9,640	12,675
Indiana	214,300	78,000	40	45	8,581	3,510
Idaho	30,150	15,000	258	345	7,712	5,175
Wisconsin	162,200	78,000	48	47	7,354	3,666
Minnesota	98,300	77,000	60	65	5,913	5,009
Oregon	18,200	15,000	144	175	2,582	2,625
U. S. Total	1,887,815	958,000	52	58	96,422	55,724

*Source: **Seed Crops**, United States Department of Agriculture, Agricultural Marketing Service, October 6, 1954.

What does the future hold for Idaho in alfalfa seed production? Will comparatively low yields continue, and will these low yields put Idaho growers at a competitive disadvantadge with states which have high yields? First, all Idaho growers do not get low yields. The average yield of farmers growing alfalfa seed on irrigated land is around 240 pounds per acre, as compared with the 106 pound state average. Growers with high yields are at no disadvantage and probably they will find alfalfa seed production profitable in the future. Other growers, those attempting to grow alfalfa seed on poor land or with poor cultural care, will probably turn to other crops yielding a greater profit. Idaho will continue to produce alfalfa seed, but there will be shifts from less favorable areas to those more adapted to high yields.

During the early 1920's Idaho produced about 16 percent of the red clover seed and was the 5th ranking state. Its production decreased and during the 1943-52 decade was in 7th place.

One factor in Idaho which has restricted red clover acreage has been the presence of wireworms. Because wireworms attack potatoes many farmers hesitate to introduce red clover into their potato rotations. Entomologists at the University of Idaho recommend DDT for control and state that in the future wireworms need not be a handicap in red clover production.

The upward trend in United States red clover production is likely to continue unless weather conditions or changes in the general crop production program operate to check it.

Other small seeds important in Idaho are alsike clover, ladino clover, white clover, wheatgrasses, and fescues (Table 3). In 1954 Idaho produced 19 percent of the nation's alsike seed, 42 percent of the white clover seed, and 10 percent of the red fescue seed.

Effect of acreage and yields on production

Production of alfalfa seed followed acreage closely until the late 1940's, and thereafter yield per acre with its sharp increases because more important in explaining production. For the entire period, acreage accounted for approximately 80 percent of the variability in production.

General production growth in red clover seed was due almost entirely to acreage—90 percent of the variability in production was caused by changes in acreage.

DESTINATION OF IDAHO SEEDS

Alfalfa

About one third of locally produced alfalfa seed is consumed within the state (Figure 4, panel A). The remaining two thirds is marketed as follows: 30 percent to other northwestern states, 2 percent to California, 25 percent to the Midwest, and 7 percent to the East.

Red Clover

Much of Idaho's red clover seed, 64 percent, is marketed in the Midwest. Another 27 percent goes East, and the remaining 9 percent stays in the Northwest (Figure 4, panel B). The Midwest is an important red clover area and it is natural that much of Idaho's seed should go to this area.

Table 3—Seeds important in Idaho, acreage harvested, yield per acre, and production—average 1943-52 and 1954.*

	Acreage		Yield		Production	
	Average 1943-52	1954	Average 1943-52	1954	Average 1943-52	1954
	Acres		Pounds		Thousand pounds	
Alsike clover						
United States	112,760	49,400	129	164	14,497	8,101
Idaho	15,050	9,000	170	170	2,552	1,530
White clover						
United States	35,600	24,000	101	100	3,603	2,402
Idaho	6,520	4,000	212	250	1,384	1,000
Ladino clover						
United States	31,236	16,400	135	123	4,215	3,837
Idaho	1,650	500	99	116	164	58
Red fescue						
United States	3,700	9,700	309	428	1,145	4,148
Idaho	167	1,200	341	350	57	420

*Source: **Seed Crops**, United States Department of Agriculture, Agricultural Marketing Service, January 13, 1955.

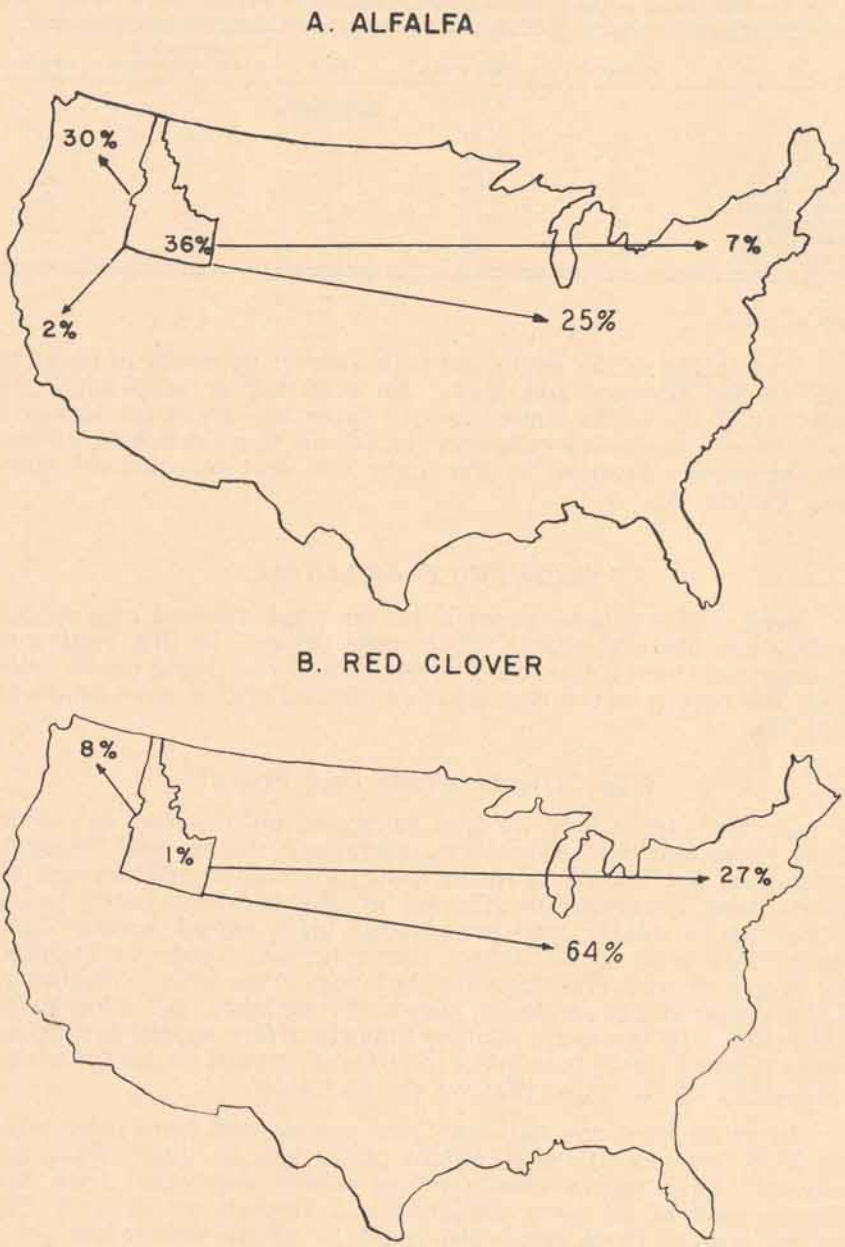

Figure 4—Destination of alfalfa and red clover seeds produced in Idaho, 1952-53 crop. The big market for alfalfa seeds is in the Northwest. Much of the red clover seed goes to the Midwest.

Table 4—Marketing areas of small seeds produced in Idaho 1952/53 crop year.

	Northwest	Midwest	East	California & Rocky Mountain	South
			percentage		
Alfalfa	66	25	7	2	—
Red clover	9	64	27	—	—
Other clovers	19	34	40	7	—
Brome grass	100	—	—	—	—
Fescue grass	3	25	3	—	69
Wheatgrass	98	—	—	2	—
Other grasses	53	—	—	47	—
All seeds	32	39	19	3	7

Other seeds

Two-thirds of the white and ladino clover produced in Idaho is used in the Midwest and East. An even higher proportion (98 percent) of the alsike clover goes to these two areas for farmers' use. Brome seeds are consumed locally in the Northwest as are wheatgrasses. Fescues, in the main, are sent to southern markets (Table 4).

SEED PRICE ANALYSIS

Seed growers need information on what demand and supply factors are likely to affect future seed prices. In this section is summarized these influences for alfalfa and red clover seeds. We refer the reader to the statistical supplement for a more complete analysis.

What Affects Alfalfa Seed Prices?

On the supply side we find supply of alfalfa seed can come from three sources—production, carryover stocks, and imports. Acreage is the big factor influencing production, and acreage of alfalfa seed harvested is affected by the previous year's price. If last year's alfalfa seed prices were high, expect acreage harvested this year to be large. Large acreage tends to increase the supply of seed, and large supply brings a low price. Similarly, if carry-over stocks are large, supply will be large, and a low price will result. In the same manner imports affect supply and price. These supply factors may move in different directions, and it is the total effect of the three that we should watch.

In years when the national farm income and farm price level are high, chances are that alfalfa prices will be high. Past experiences have shown alfalfa prices closely associated with the general level of all farm commodities. Predictions, then, of the general level of farm prices also apply to alfalfa seed prices.

Alfalfa seed prices have been subject to year-to-year price rises because demand for alfalfa seed has been increasing. If this trend continues, we can expect alfalfa seed prices to increase about 21 cents per hundredweight per year.

Many people interested in seeds believe red clover seed prices are a price standard for other small seeds. There is no evidence that alfalfa seed prices are influenced by red clover seed prices. In fact, evidence shows alfalfa the price standard rather than red clover.

What Affects Red Clover Seed Prices?

Supply of red clover seed helps determine red clover prices. Supply may come from production, carry-over stocks, and imports. Acreage harvested largely determines production, and since much of the red clover seed comes from the Midwest where acreage harvested is erratic, production of red clover seed is difficult to forecast.

Carry-over stocks contribute to supply and have the same effect on price as supplies from production or imports. When carry-over is large, stocks have a depessing effect on market prices. Imports of red clover seed vary from year to year, and depend on production in Canada, New Zealand, and other seed exporting countries. It is total supply of seed which affects price and the greater total supply the lower the price.

Alfalfa seed has a price trend, i.e. over the years there has been a tendency for price to rise gradually. There is no evidence that a trend such as this exists for red clover. If a price trend should develop in red clover, it is likely to be a downward one.

Red clover seed is affected by the general level of agricultural prices and incomes. To a seed grower interested in future prices of red clover seed, this is one of the first things he should check. Several government agencies estimate future level of agricultural prices and income and this information is available for farmer use.

Alfalfa seed prices influence red clover seed prices. If supply of alfalfa seed is large in any particular year, alfalfa prices will be down, and this tends to lower red clover seed prices as well.

SEASONAL PRICE VARIATIONS

Alfalfa price shows two seasonal highs and one seasonal low. High points are in April and May and again later in July. Red clover price had its high point in mid-April and its low in September. Logically, this relation is about what would be expected. In northern United States alfalfa is usually sown in the late spring months with the spring grains as nurse crops. In the South, where winters are milder, alfalfa is planted in the late summer months with winter grains. Both seed crops are harvested in early fall, and low points coincide with harvest periods. Thus demand is strongest just before planting time and a low point is reached when the new seed crop is harvested.

Production largely determines supply of seed so the net result of these forces is that the new crop coming on the market causes low prices in the fall. High demand in spring, at planting time, raises prices in this season.

Does It Pay to Store Seeds?

Figure 5 shows the seasonal nature of alfalfa and red clover seed prices. Red clover seed has a greater fluctuation than alfalfa seed, and other studies have shown it profitable for users of red clover and alfalfa seed to purchase their seed in the fall rather than in the spring.

These figures alone, however, do not help a farmer decide when to sell his crop. The first column in Table 5 shows assumed prices based on the seasonal index. Column two shows storage cost at 5 cents per hundredweight per month.* Column three shows return to the farmer for storing.

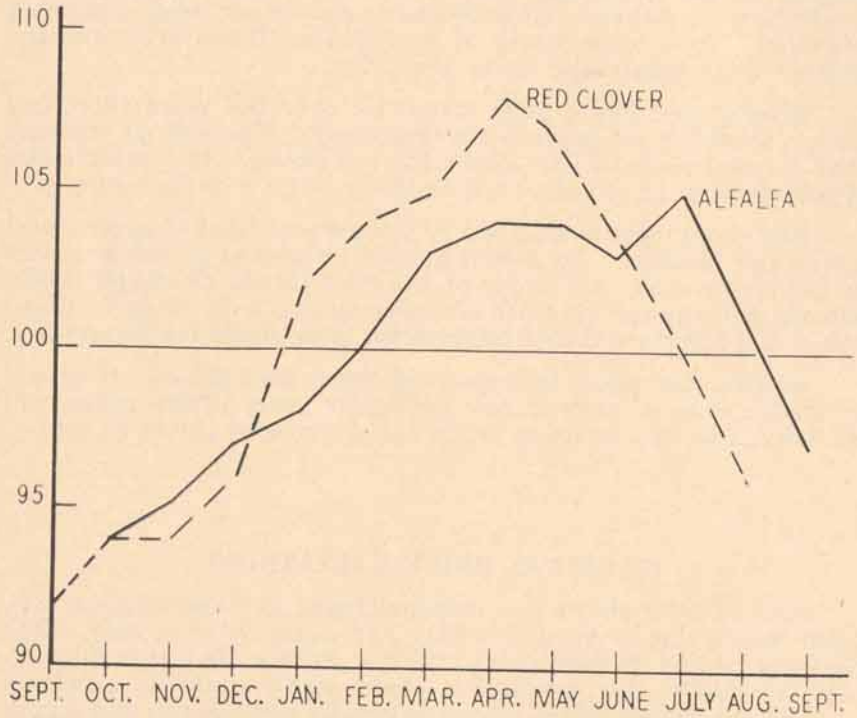

Figure 5—Seasonal price indexes for alfalfa and red clover seeds, United States, 1929-53. For both seeds, prices were lowest at harvest season and highest at planting time. The best time to sell alfalfa seed is between March and July. Sell red clover seed in the January to June period.

*An average cost in Idaho during the summer of 1953. This cost includes insurance as well as storage.

The farmer realizes his greatest income by holding alfalfa seed until July, a return of $2.55 per hundredweight over direct costs of storage. Indirect costs such as insect damage are not included.

This does not say that in each year a seed grower would net this much money, nor does it imply that July is always the best month to sell alfalfa seed. It does state that using historical relations, in most years it would pay to store alfalfa seed, and a farmers' best estimate of the month to sell would be July. Note that April and May are also high return months. Before holding seed to sell in these periods a grower should inquire about local conditions to see whether his seed dealer will buy seed then.

Table 5—Alfalfa seed storage returns and costs, using 1929-51 average seasonal relationships and 1953 Idaho storage costs.

Month	Seasonal prices using Oct. as $25 per cwt.	Cost of storage at $.05 per month per cwt.	Return through storage per cwt.
October	$25.00	$ .00	$ .00
November	25.26	.05	.21
December	25.80	.10	.70
January	26.06	.15	.91
February	26.60	.20	1.40
March	27.39	.25	2.14
April	27.66	.30	2.36
May	27.66	.35	2.31
June	27.39	.40	1.99
July	28.00	.45	2.55
August	26.86	.50	1.36
September	25.79	.55	.24

Table 6—Red clover seed storage returns and costs using 1929-51 average seasonal relationships and 1953 Idaho storage costs.

Month	Seasonal prices using Sept. as $25 per cwt.	Cost of storage at $.05 per month per cwt.	Return through storage per cwt.
September	$25.00	$ .00	$ .00
October	25.54	.05	.49
November	25.54	.10	.44
December	26.09	.15	.94
January	27.72	.20	2.52
February	28.26	.25	3.01
March	28.53	.30	3.23
April	29.35	.35	4.00
May	29.08	.40	3.68
June	29.24	.45	3.79
July	27.17	.50	1.67
August	26.09	.55	.54

Table 6 shows red clover seed storage returns and costs. Using the same procedure as in the previous example, it shows storage until April yields a net advantage of $4.00 per hundredweight. Other good months to sell are March, May and June. Again we have used $25 as our hypothetical base price and 5 cents per hundredweight per month as the storage cost.

MARKETING MARGINS

Farm Products Marketing Costs

Before farm products are used, they pass through the hands of a number of marketing agencies. Marketing men assemble food products from farms, process, store, package, and ship them from producing areas to central markets and on to terminal wholesale markets. They distribute them through wholesalers and jobbers to retail stores, and so eventually to the consumer Appropriate channels for any particular product will vary, depending upon such factors as location of producing areas and major markets, bulkiness and perishability of product, and amount of processing required. In all cases, though, such services must be performed if these agricultural products are to be processed and moved to consumers. Development of the industrialized economy of the United States would have been impossible without the growth of an elaborate marketing system. It permits farm products to be located where soils, climate, and other physical and economic factors create advantages. These products are then made available at other locations where, when, and in the form desired.

Hauling, processing, storing, and selling agricultural products require the use of labor, machinery, buildings, fuel, and power. Marketing services are costly to perform and constitute an important use of the nation's resources. Recent trends in the total agricultural marketing bill for United States indicate that marketing charges amount to over 20 billion dollars—roughly 10 percent of the total national income.

Expressed in another way, marketing costs appear to be at least as important as original production expenses on the farm. In times of depression, prices received by farmers decline more rapidly than do the marketing margins. In these periods margins are high relative to farm prices. In prosperous times farm prices rise more rapidly than do marketing agencies' charges, and the farmer receives a higher proportion of the retail dollar.

Marketing Margins for Seeds

Figure 6, panels A and B, show the average share of the retail seed dollar going to the retailer, wholesaler, and farmer.

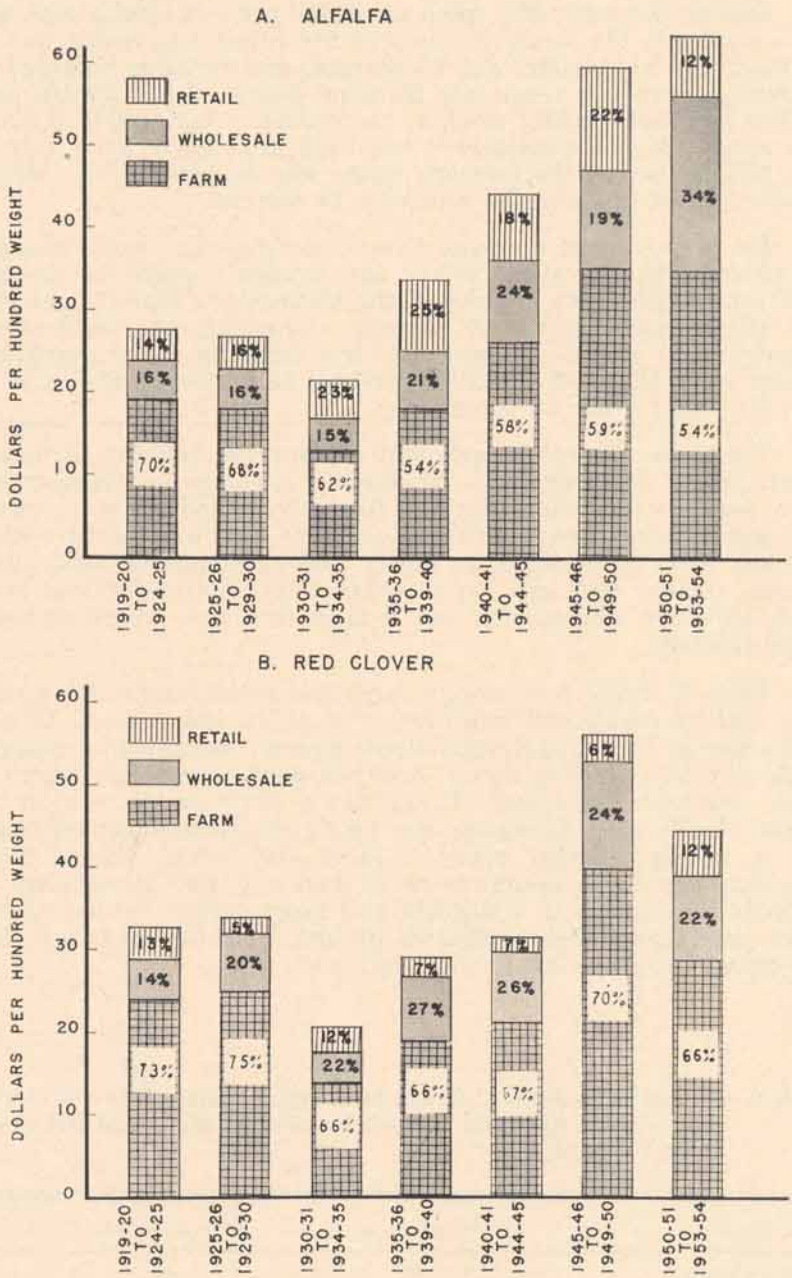

Figure 6—Marketing margins for alfalfa and red clover seeds, United States, 1919-53. For both seeds, the wholesalers' margin has been increasing. One reason for this is that wholesalers have been expanding their services.

During the early 20's when the retail price of alfalfa seed was at a low level, the farmers' share of the retail seed dollar was 70 percent, the wholesalers got 16 percent, and retailers retained 14 percent. Over the years the farmers' share of the alfalfa seed dollars has been getting smaller, the retailer's has remained about the same, and the wholesaler's has been growing larger. During the 1950-53 period the farmers' share was 54 percent, the wholesaler's 34 percent, and the retailer's 12 percent.

Red clover seed margins have undergone the same changes as alfalfa. In the early 1920's the retailer's share of the red clover seed dollar was 13 percent, the wholesaler's share 14 percent, and the farmer received 73 percent. Gradually the wholesaler's proportionate share increased and the farmer's share decreased. In the early 1950's the retailer received 12 percent, wholesaler 22 percent, and farmer 66 percent.

There are several reasons why the margin between farm and retail prices has increased. Marketing agencies are performing more services now than they did formerly. Handling more varieties and different grades of these varieties adds to expense. Other services have been added, as purity and germination tests, guarantees, smaller packages, and certification. Many services have been added by wholesalers, and it is in this area where margins have widened.

Table 7 shows how closely farm and retail, farm and wholesale, and wholesale and retail levels of prices are related. Wholesale prices of alfalfa seed were almost entirely explained by changes in farm prices, or vice versa. Analysis does not explain which is cause and which is effect. There was a fairly small relation between alfalfa seed wholesale and retail prices, and consequently not a strong relation between farm and retail prices What this means is that a change in retail price may not immediately be reflected downward to wholesale and farm prices. It also shows farm prices adequately reflected upward to wholesale prices, but not consistently upward to the retail level.

Table 7—Percent of variability* in one price series explained by other price series. Farm, wholesale, and retail prices of alfalfa and red clover seeds, United States.

Seed relations	Alfalfa seed	Red clover seed
Farm-wholesale	.95	.96
Wholesale-retail	.57	.98
Farm-retail	.37	.97

*Coefficient of determination

The prices of red clover in Table 7 are closely related. Ninety-six percent of the variability in the farm price is associated with the wholesale price. The wholesale-retail relation is even greater, 98 percent of the changes in one being explaind by the other factor. Naturally the farm-retail relation is close, 97 percent of variability in the one can be attributed to the other. This means that any red clover price change is consistently reflected to other levels of marketing.

Comparison of seed margins with margins of other crops

Many seed growers feel the share middlemen take out out the retail seed dollar—40 percent for alfalfa and red clover for the 1935-39 period—is inordinately large. Are these margins out of line with other farm commodities? A comparison of seed margins and margins of farm commodities is given in Table 8. Relative to other farm products seed margins do not appear excessive, poultry products being the only group with lower margins.

SEED MARKETING CHARGES

Scalping is a cleaning procedure intended for removing soil particles, chaff, and other miscellaneous debris. Most common rate was one cent per pound of seed in the dirt. Per pound of seed in the dirt means the rate is based on incoming weight rather than cleaned seed weight.

Finishing is another process which continues the cleaning by removing other seeds. Most common rate was one cent per pound of cleaned seed. Some seed cleaners had extra charges if the seed were hard to clean. One cleaner, for example, charged three-fourths of a cent per pound for running seed through a gravity mill, and one and a half cents for use of a magnetic mill.

Many cleaners did a combination job of both scalping and finishing. Rates for this varied somewhat, depending on kind of seed to be cleaned. For legumes the most common rate was two cents per pound in the dirt or four cents per pound of cleaned seed. For grass seeds the most common rate was two cents per pound in the dirt or three cents per pound of cleaned seed.

Other charges commonly made by seed cleaners are for storage and insurance. Some dealers had a single charge which covered both services and the most common rate was five cents per cwt. per month. Insurance alone was generally based on value and the most common rate was 15 cents per $100 value per month.

Some firms had a minimum charge for cleaning. Rates had no common pattern, varying from $1.00 to $20.00 per lot.

Table 8—Relative importance of marketing margins for agricultural products, 1935-39.

Farm product	Marketing margin as percent of retail price
Meat Products	46
Dairy Products	50
Poultry and eggs	34
Cereal products	78
Fresh fruits and vegetables	65
Canned fruits and vegetables	86
Navy beans	54
Beet sugar	61
Alfalfa seed	45
Red clover seed	34

Many firms charged a common rate which included scalping, finishing, storing, insurance, sacks, and handling. Rate for this combined package service was four cents per pound.

In summing up this section on marketing margins we may say that the "middleman" is not a villain as many farmers and consumers think. He performs services which must be done, and most of the margin is costs incurred in doing these services. Seed wholesalers have buyers' and salesmen's salaries to pay, transportation charges from the cleaning plants to the retail store, advertising and promotion, and storage costs. In addition they have to assume risks of price changes, deduct a certain amount for investment in buildings and equipment, and pay themselves a profit for management and ownership of the business. Our present system of specialized farm production has developed as a joint operation with specialized marketing. Together they have benefited both producer and consumer.

Other University of Idaho Seed Publications

Safflower Production. Experiment Station Bulletin 222.

The Establishment of Sweet Clover in Dry Land Areas. Experiment Station Bulletin 227.

Sodar Wheatgrass. Experiment Station Bulletin 234.

Controlling Perennial Weeds With Sodium Chlorate, Carbon Bisulfide, and Borax. Experiment Station Bulletin 271.

Controlling Perennial Weeds With Tillage. Experiment Station Bulletin 288.

How to Seed Abandoned Land for Pastures. Experiment Station Circular 112.

You Can Control Noxious Weeds. Extension Bulletin 204.

Innoculation of Legumes. Extension Circular 101.

Copies of these and other University of Idaho agricultural publications may be obtained from your county agent or by writing to the University of Idaho Experiment Station, Moscow, or the Agricultural Extension Service, Boise. Mention publication name and number.