

Oregon's Agricultural **PROGRESS**

**New Pear Varieties
Worth Trial**

More Savings With Beet Pulp Silage

How Much Nitrogen Wheat Farmers Are Using

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COVER STORY: Seven pear varieties appear worthy of commercial trial, after 45 years of screening at Medford. Of the 7, 3 appear most promising. Story, page 14.

(Photo: Ray Atkeson)

OREGON FARMERS have more planting than usual to do this spring, but the long rise in the nation's farm output probably will be interrupted this year.

National production of both crops and livestock seems likely to be smaller than last year's record. Credit for the cuts goes mainly to the new Soil Bank, drought, and past prices.

Meanwhile, population will continue increasing. Spending for food and clothing probably will rise some more, too. Even though jobs aren't quite as plentiful as a year ago, pay is holding up well. Consumers still spend about a fourth of what is left after taxes for food.

A larger marketing bill may absorb part of the expected rise in consumer spending. The portion not absorbed by marketing should raise farm prices for many items and, along with Soil Bank payments, should boost farm income a little.

Prospects for a better balance between supply and demand are already showing up in higher prices for cattle, hogs, lambs, wool, milk, wheat, hops, and some of the fruits and vegetables. Eggs, and perhaps broilers, should join this list soon, but prices of feed grains, hay, turkeys, strawberries, mint, and several of Oregon's favorite seed crops are likely to stay under a year ago.

Altogether, the nation's plantings for harvest in 1957 may be the smallest in 40 years. The total will be around 12 million acres, less than last year, if farmers carry out their March intentions about like they usually do. That would be a decrease of 3½ per cent. The cut in crop output may not be as large as the cut in acreage, but higher yields are not likely to offset fully the acreage reduction. This is especially true for wheat, corn, cotton, rice, and tobacco. These crops are providing large areas for Soil Bank reserves.

Here in Oregon most of the land held out of wheat, potatoes, and corn will go into barley, oats, sugar beets, and hay. Oregon's barley and oats plantings for harvest this year will be well above a million acres for the first time in history. Most of this acreage will be seeded this spring.

Wheat

Across the country, some 12½ million acres of wheat have been signed up under the Soil Bank acreage reserve

Nation's '57 crop plantings may be smallest in 40 years . . . wheat prices likely to stay above supports . . . egg prospects bright.

Farm Outlook

By Agricultural Economist M. D. Thomas

program. Much of this acreage in summer fallow areas will go into barley and grain sorghums this year, but this shift may be enough to hold this year's national wheat crop around a fifth under last year.

Wheat prices depend on changes in government programs but are likely to stay above supports in the coming season. Odds are the market for soft white wheat will stay near the government's minimum domestic selling price.

This minimum is the support price, plus 5 per cent, plus a carrying charge. It is highest in June when the old marketing season ends, and lowest in July when the new marketing season starts. It is raised 2 or 3 cents each month. For instance, last July the minimum on No. 1 soft white at Portland was \$2.33 a bushel; in March, it was

\$2.52 and the March market was around \$2.61 a bushel most of the time.

Spreads between prices of wheat and other grains are becoming large enough to tempt some growers to exceed allotments and pay penalties on excess wheat. The main things now keeping growers from yielding to this temptation are a loss of Soil Bank payments and their conscience. By conscience, we mean a sense of moral responsibility for helping to reduce the wheat surplus.

Feed grain

Current prospects are for less corn and oats and more barley and sorghum in the nation's 1957 feed bins. Yields like the average for the past 5 years on the prospective feed grain acreage

would produce a total crop between 5 and 10 per cent smaller than last year. Even so, a larger carryover may keep supplies for the coming season near this year's record levels.

In the Northwest, supplies of feed grain in the coming season are almost certain to be larger than they were for the current season. Large carryovers and larger plantings are the reasons behind these prospects. So, prices for the coming barley and oats crops are likely to follow supports down. This means bids at harvest time around \$3.00 to \$3.50 under last fall.

Barley and oats prices are likely to be working toward these lower levels most of the time between now and harvest. Combining of a large California barley acreage will start the latter part of May.

On many Oregon farms, barley fed to cattle or hogs this year is likely to return more than barley sold for cash.

Forage

A comparatively open fall and winter have stretched Oregon hay supplies. Reserves left at the end of this feeding season should be back near normal, and prospects for a moderate increase in hay acreage should help keep them that way.

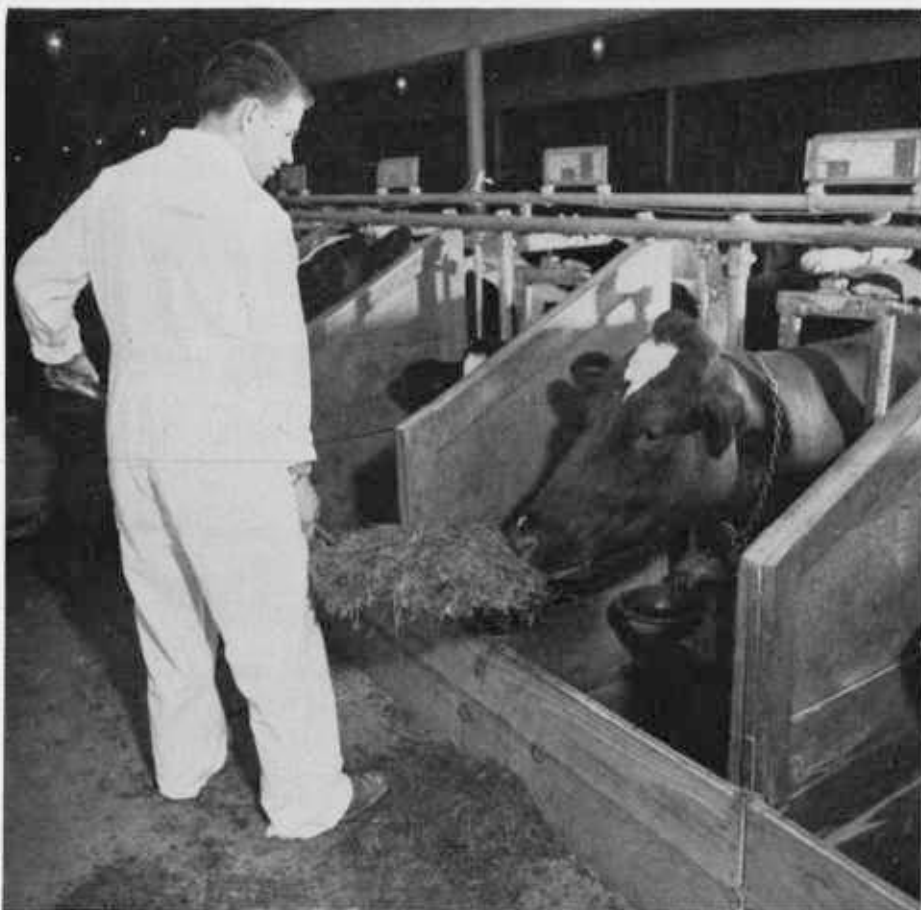
This means hay prices this spring and summer probably will stay lower than either of the past 2 years. Once again, hay fed on the farm where grown should bring more money than hay sold off the farm.

Silage and pasture have been replacing hay as an economical source of forage on many Oregon farms. Farmers find low-cost forage, and grain priced right, are a double-barreled combina-

(Continued, page 16)

LAMBS that can make the market before the Fourth of July should show more than the usual profit over those marketed later. Creep feeding might pay, too. Although the early lamb crop in Oregon is a little bigger than last year's, it is much smaller in moisture-short California and Texas.





COWS ate more beet pulp-preserved silage, produced an average of 3.2 more pounds of milk daily.

A TWO-YEAR silage study comparing dried molasses beet pulp, sodium metabisulfite, and no preservative has shown:

¶ Dried molasses beet pulp reduced juice losses and absorbed enough nutrients to more than pay its cost.

¶ Beet pulp produced silage higher in dry matter.

¶ Beet pulp silage was more digestible and more palatable.

¶ Beet pulp-fed cows produced more milk than cows fed sodium metabisulfite-preserved silage.

¶ Sodium metabisulfite slowed the normal development of silage-preserving bacteria. The silage, however, was of good quality, with a mild odor and bright color.

¶ Sodium metabisulfite did not protect silage against damage from rain in uncovered silos as much as beet pulp.

These are the main results found by dairy husbandmen J. V. Bateman and I. R. Jones.

Sodium metabisulfite and beet pulp were compared in 1954-55. Ensiled forage was first-cutting alfalfa containing about 20 per cent grass. In one silo, 200 pounds of beet pulp was added per ton of forage. Beet pulp was spread atop the forage in the wagon before blowing in the silo. Eight pounds of sodium metabisulfite per ton of forage was added in another silo by a funnel-shaped hopper mounted above the blower. Both silos were wood stave, upright, 12½ by 33 feet.

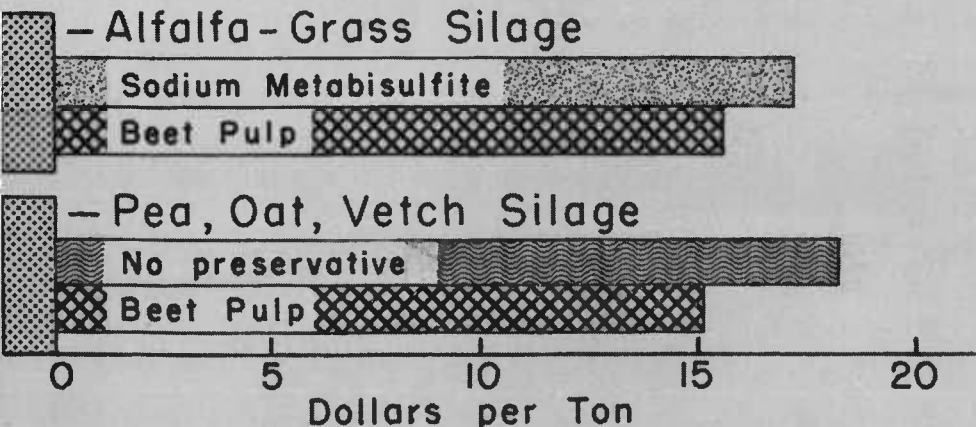
In 1955, the bottom halves of the two silos were filled with oats and peas, the top half with oats and vetch. Two hundred pounds of beet pulp per ton

Save . . .

With Beet Pulp Silage

A two-year study shows that beet pulp absorbed enough silage juices to more than pay its cost.

Cost of Preserving 17 Per Cent TDN Silage Compared



COSTS PER TON*

20 per cent dry matter forage	\$ 7.00
Beet pulp	60.00
Sodium metabisulfite	200.00
Chopping and ensiling	3.24

* Costs were adjusted for TDN value, so comparisons are estimated costs of silage made with different preservatives.

Juice Losses, Total Digestible Nutrients Compared

Type of loss	Alfalfa, grass silage		Peas, vetch, oats silage	
	Sodium meta-bisulfite	Dried molasses beet pulp	No preservative	Dried molasses beet pulp
Total ensiled dry matter (tons)	21.6	24.7	20.3	22.5
Dry matter lost in juice (tons)	3.2	0.9	3.1	0.5
Dry matter lost in top spoilage (tons)	1.0	0.8	0.3	0.3
Dry matter lost in fermentation (tons)	1.2	1.8	1.6	1.8
Total dry matter lost (tons)	5.4	3.5	5.0	2.6
TDN in silage (per cent)	17.8	20.4	14.3	17.7

of forage was added to one silo, no preservative to the other.

Two groups of 12 cows, paired according to age, weight, milk and fat production, and stages of lactation and gestation, were fed 7 weeks in 1954-55. Each cow received—morning and night—all the silage she could eat. Grain was fed according to milk and milk fat production. Five pounds of hay were fed to each cow either the first 3 or the last 4 weeks.

Results of the 1954 feeding are graphed. Note that cows that ate more

beet pulp-preserved silage gained more weight.

Cows fed beet pulp-preserved silage averaged 3.2 more pounds of milk a day than cows fed sodium metabisulfite-preserved silage the first 3 weeks. The difference was 2.6 pounds per day, favoring beet pulp silage, the next 4 weeks of feeding.

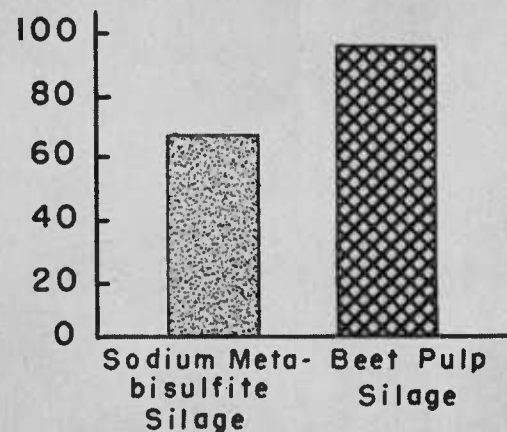
Beet pulp absorbed more juices, resulting in higher quality silage in terms of Total Digestible Nutrients (TDN), and, depending on costs, will pay for itself. See charts and table.



DAIRY HUSBANDMAN John Bateman weighs a sample of silage after it has been dried. Researchers also found that beet pulp silage costs less to preserve than no preservative or sodium metabisulfite.

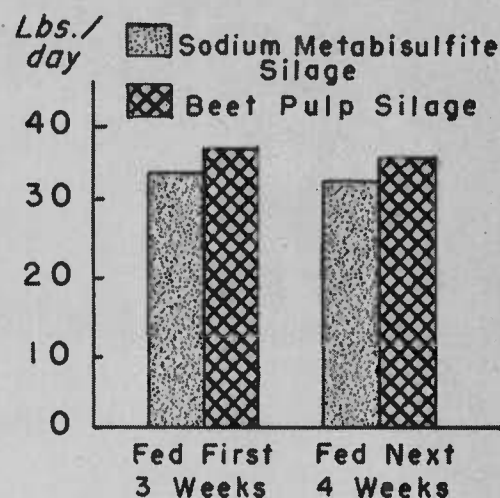
Silage Consumption

Lbs./day



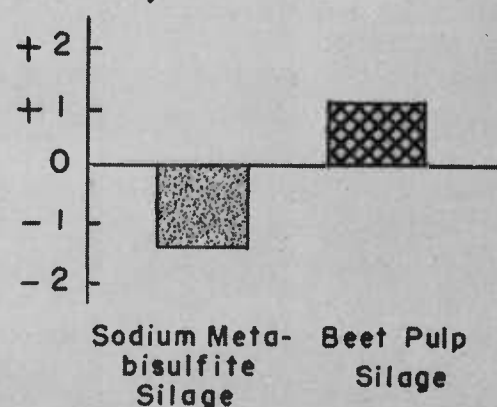
Milk Production

Lbs./day



Cow Weights

Lbs./day





ADDING a wetting agent may increase plant kill, but it also reduces a chemical's selectivity. To avoid crop injury, do not use a wetting agent unless specifically recommended. Agricultural chemist Virgil Freed is now classifying certain wetting agents for use with certain weed-killing chemicals.

Help Chemicals Kill Weeds Better

Water alone is a poor material with which to wet weeds, according to an OSC agricultural chemist. He has found that wetting agents added to the spray mix can help increase a weed kill.

ALTHOUGH TODAY'S weed killers are highly effective, they occasionally fail to kill weeds as they should. Among the reasons is the plant's failure to take up enough chemical.

And this is largely because the spray fails to wet the plant properly, according to agricultural chemist Virgil Freed. His preliminary research indicates a way to insure a better kill.

Freed explains that many plants are difficult to wet because a waxy material covers the leaves and other plant parts. This waxy covering—called the cuti-

cle—protects plants about the way skin protects an animal.

The cuticle prevents rapid water loss and prevents foreign material from entering the plant. Water doesn't wet this waxy covering too well. That is why dew or rain gathers as droplets, rather than spreading out in a film.

On young plants, a cuticle is thin and easily penetrated, but as the plant grows older, the cuticle becomes thicker, more difficult to penetrate. Also, plants growing in direct sunlight or under dry conditions usually have

a much thicker cuticle than those growing under moist conditions.

Water poor wetting agent

Water is a poor material with which to wet plant cuticles, but Freed reports you can wet better by adding a wetting agent, a soaplike material, to your spray mixture. Wetting agents are called a number of things—soaps, detergents, and surfactants. Some related compounds—emulsifiers—also will increase wettability of water. Actually, emulsifiers are used to mix oil-like ma-

terials so they will suspend evenly in water.

When wetting agents are added to a spray mixture, they bring about a contact between the weed-killing chemical and the plant. Film formed from such a spray not only makes it easier for the herbicide to penetrate the plant, but more herbicide is deposited on and gets into the plant.

Freed reports the effectiveness of three common herbicides with and without wetting agents:

**Plant Absorption of Amino Triazole (ATA)
(93 hours)**

Mixture	Per cent absorbed
ATA alone	13.0
ATA plus 0.1 per cent wetting agent	43.5

**Plant Kill by Sodium Chlorate
(96 hours)**

Mixture	Per cent killed
Sodium chlorate alone	10
Sodium chlorate plus 0.1 per cent wetting agent	52.5

**Plant Absorption of 2,4-D
(72 hours)**

Mixture	Per cent absorbed
2,4-D alone	10.1
2,4-D plus 0.1 per cent wetting agent	36.5

The chemist found that plant kill followed about the same pattern as the absorption rate, and thinks using a wetting agent would help kill foliage of brush and perennial noxious weeds.

But he also emphasizes that wetting agents lower a weed killer's selectivity while it is increasing its effectiveness. *To avoid crop injury, Freed recommends not using wetting agents unless specifically recommended. Check the label on the herbicide container or consult your County Extension Agent.* Many commercial weed killers contain wetting agents.

Use only suggested amounts

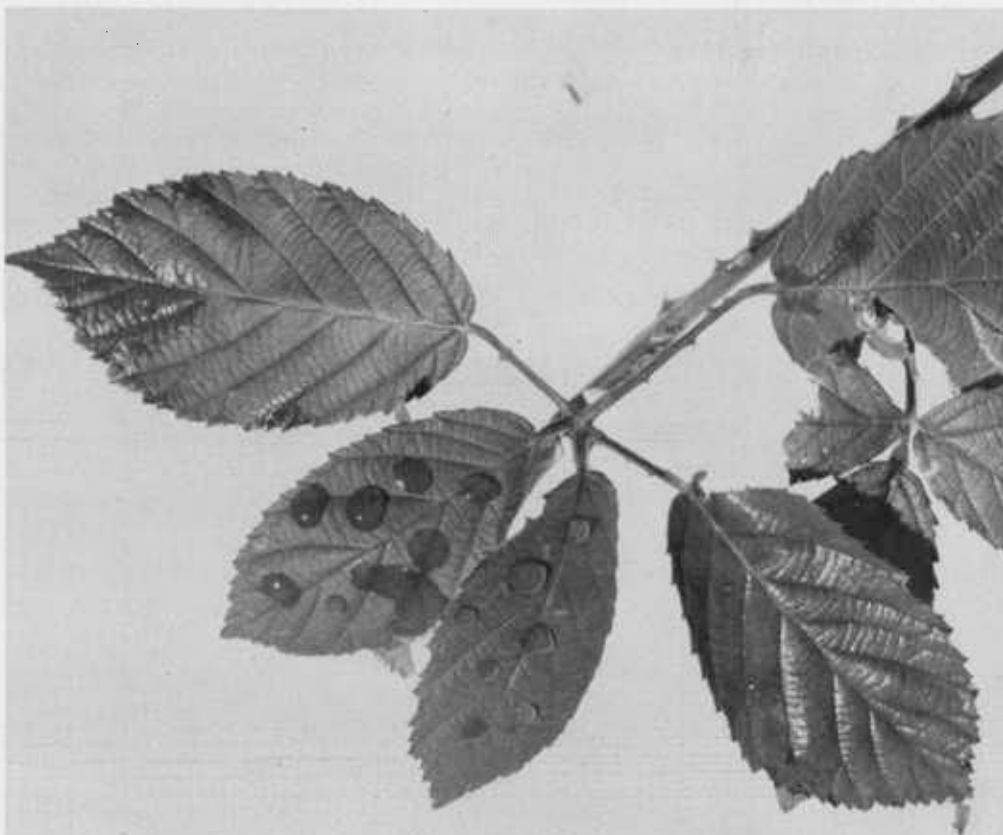
Freed has found there is a limit to a wetting agent's ability to make water wet better. Use only recommended amounts. Any more won't help much.

So far, wetting agents have increased kill with all materials. Freed is attempting to classify certain wetting agents for use with certain chemicals. Until he has more information, he suggests checking with your County Extension Agent for the best one to use with the weed killer you plan to apply.



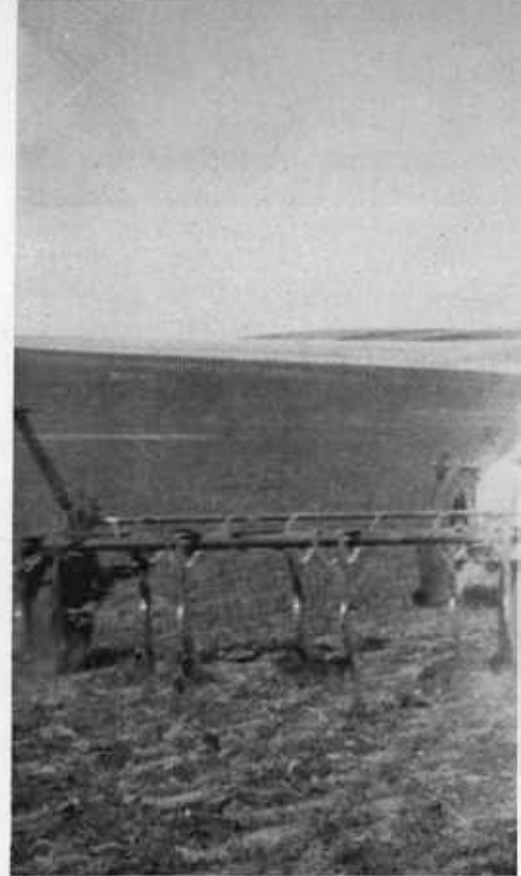
AGRICULTURAL CHEMIST Virgil Freed checks a reading on a tensiometer, an instrument he uses to measure a solution's surface tension. A low surface tension means better wettability, higher kill.

WATER is a poor material with which to wet plants, as shown below. Water forms as droplets, while a wetting agent forms as a film on the leaf below, permitting a closer contact between chemical, plant.



How Much Nitrogen Are Wheat Farmers Using?

This story of fertilizer use in the Columbia Basin reports how much, in which form, and when farmers began using nitrogen, plus what they think of it.



FARMERS ESTIMATED their yield increases from nitrogen bushels per acre. More than three-fourths reported they v

NINETY PER CENT of the Columbia Basin summer-fallow wheat farmers applied fertilizers for the first time after 1950. About half who now use fertilizers began using them between 1950 and 1953.

Small-acreage farmers and those in Wasco and western Umatilla Counties began using fertilizers earliest. But now, a higher proportion of those operating medium to large wheat farms are using nitrogen.

These are a few of the findings

Henry Stippler, USDA agricultural economist at Oregon State College, reports. He surveyed 318 wheat-fallow farmers in Wasco, Sherman, Gilliam, Morrow, and western Umatilla Counties, asking them how much, when, and which kind of nitrogen fertilizers they have used or are using.

Stippler's sample was adjusted so a representative number in different-sized wheat farms were contacted. Information was obtained from those operating small farms (720 acres and

under), medium farms (721 to 1,440 acres), medium-large farms (1,441 to 2,400 acres), and large farms (2,401 acres and over). Only use of fertilizers containing nitrogen was surveyed.

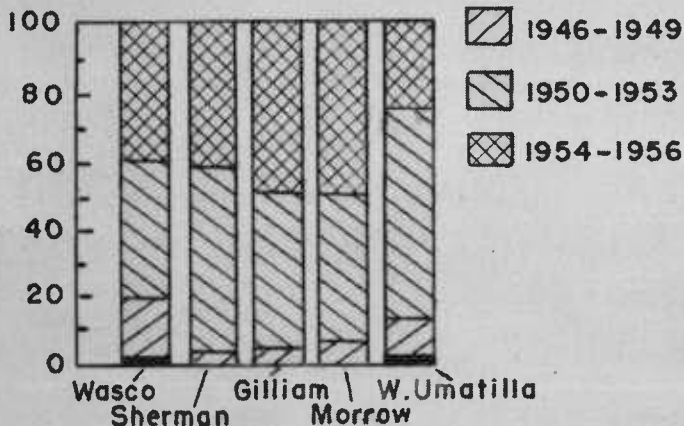
Results are graphed.

Fertilizer applications limited

He found that many farmers limit fertilizer applications to that part of their wheat acreage they think will boost yields most, especially if they are just "trying" fertilizers. Differences

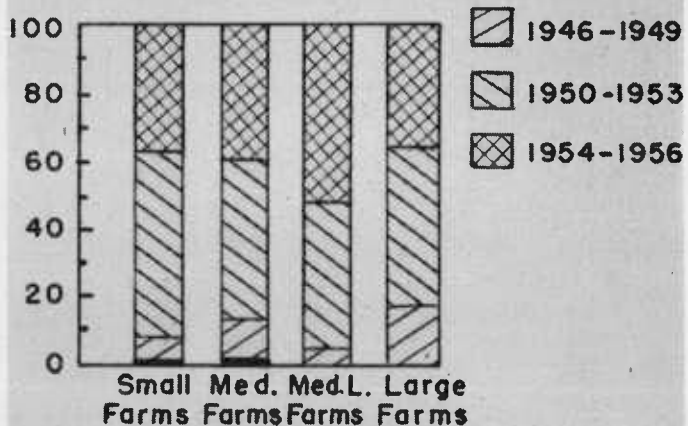
First Fertilizer Use

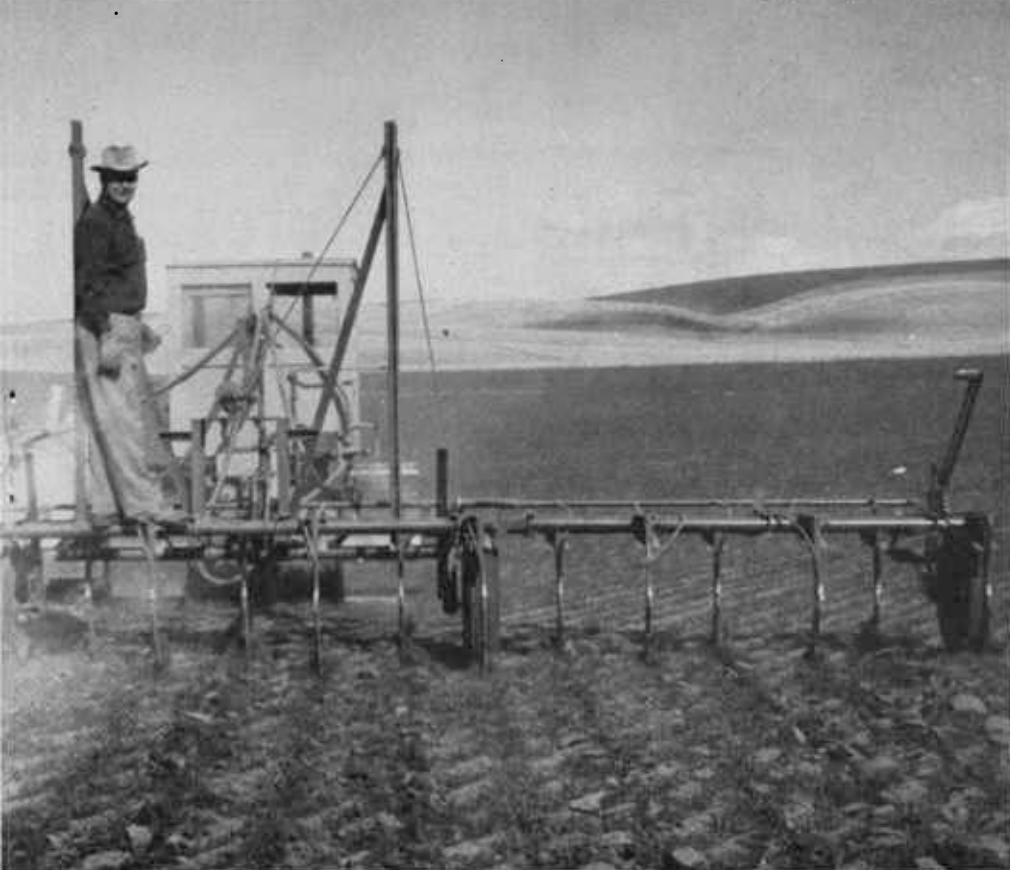
Per cent



First Fertilizer Use

Per cent





men ranged from 6 to 15 per cent were satisfied with fertilizer results, while 12 per cent said they were still "experimenting." Some 5 per cent questioned the benefits of nitrogen, and 6 per cent reported unsatisfactory results.

in soil and moisture between fields, in amounts of straw mixed in the soil, and in ability to pay for fertilizers are some of the reasons he thinks fertilizer use varied from year to year and from farm to farm.

The economist gathered more information about specific fertilizer use in 1955 and 1956.

Most farmers applied nitrogen the fallow year. Only a few applied in the spring.

About 61 per cent used the gas form

in 1955-56. Dry fertilizers averaged 28 per cent; liquid forms, 11 per cent. About the same percentage was found by figuring use in acres fertilized and in actual nitrogen applied.

Applications averaged 30 pounds of actual N per acre, regardless of type of material used. Few farmers exceeded 40 pounds, but many applied less than 30 pounds. When lack of money restricted the amount they spent for fertilizers, farmers cut the rate applied per acre rather than the total acreage.

Farmers also described some of their experiences with nitrogen. Most believed available soil moisture prior to seeding, soil texture, and depth were equally important and this seemed uppermost in their minds when it came to deciding whether to fertilize, how much, when, and in which form.

Additional benefits considered

Those who had used fertilizers for a long time recognized that nitrogen applications, even under favorable conditions, will not always insure enough increased yield to cover costs. Many felt nitrogen should be applied only after considering summerfallow handling methods and other wheat growing practices. Included was the method of mixing crop residues in the soil. Benefits from storing moisture and from preventing soil erosion were considered by some to be equal in value to yield increases.

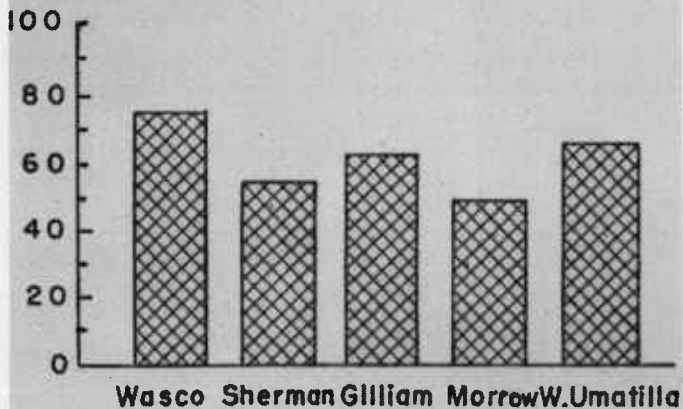
Farmers estimated their yield increases from nitrogen ranged from 6 to 15 bushels per acre. More than three-fourths reported satisfactory results. Twelve per cent said they were still "experimenting" or had completed their first large-scale test in 1956. Some 5 per cent questioned the benefits of nitrogen; 6 per cent reported unsatisfactory results, and were discontinuing fertilizer use.

Of those who had not used nitrogen in the past, about 90 per cent did not indicate any plans for future use. A few opposed increasing wheat yields this way. But the remaining 10 per cent said they intended to try nitrogen.

Detailed results will be published in an experiment station circular.

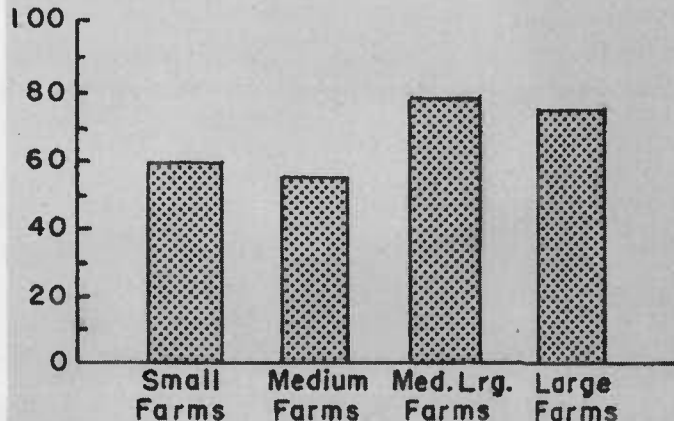
Farms Now Using Fertilizers

Per cent



Farms Now Using Fertilizers

Per cent



Better Gains From Irrigated Pastures

A low-protein supplement increased beef cattle gains, according to last summer's irrigated pasture results. Drenching probably increased gains only when parasite loads were high during the feeding period.

PHENOTHIAZINE drench lowered worm counts, but failed to up gains. All worm loads were low.



PHENOTHIAZINE—either drench or mixed in cubes—and fed to cattle on irrigated pasture reduced stomach worm loads, but failed to increase gains when parasite loads are apparently low during the feeding period.

That is what veterinarian Paul Allen and animal husbandman J. E. Oldfield report from last summer's irrigation pasture research.

Past research was reported in the Spring 1954, '55, '56 issues of *Oregon's Agricultural Progress*.

This last year, 72 yearling Herefords from eastern Oregon were turned out to irrigated pasture May 2.

They were divided into 6 groups:

Group 1, no treatment.

Group 2, each animal was fed 5 pounds of a low-protein supplement* daily.

Group 3, each animal received 5 pounds of the low-protein supplement daily. This supplement also contained 4 grams of phenothiazine in each 5 pounds of mix.

Group 4, each animal was drenched with 60 grams of phenothiazine once every 2 weeks.

Animals rotated among pastures

Animals in groups 1, 2, 3, and 4 were routinely rotated among pastures. Rotation was such that each pasture was free of cattle 3 weeks or more.

Group 5, animals were strip-grazed daily.

Group 6, animals were held in a dry lot (no forage) and fed fresh-cut, green chop daily from similar pastures.

Animals on dry lot (fed green chop)

*Wheat mill run, 1000 lbs.; ground oats, 600 lbs.; ground alfalfa, 200 lbs.; cane molasses, 100 lbs.; cottonseed oil meal, 100 lbs.



GREEN CHOP-fed cattle gained the least, graded poorest, yet had the lowest worm load. Lower quality feed was reason given for low gains.

SUPPLEMENTED cattle gained most, graded highest, yet had the highest worm load. Worm loads apparently weren't high enough to affect gains.

were taken off feed August 23. Those in the first five lots were taken off pasture September 6 and slaughtered.

Uniform fertilization and irrigation were carried out on all pastures. Each pasture was clipped, then animals were removed.

Here's what Allen and Oldfield found:

¶ Feeding phenothiazine in cubes or drenching biweekly meant lower parasite loads but did not increase weight gains.

¶ Feeding 5 pounds per day of low-protein cattle cube increased weight gains but did not lower parasite loads.

¶ Strip-grazing did not increase weight gains or decrease parasite loads.

¶ Cattle fed green chop gained the least. Reason: grass was clipped from the same pasture, but at different stages of maturity. Grass later in the summer was of lower quality than the grass cattle grazed when they were rotated from pasture to pasture.

Detailed figures are in the table.

Allen and Oldfield found that parasite loads were under 22,000 per animal, apparently not enough to decrease gains.

Low initial worm loads possible

They offer no reason for low worm loads this past year. Animals probably had less than 2,700 parasites when they were put on pasture. The workers estimated low initial worm loads from a slaughter of three animals just before the others were turned out to pasture in May.

Supplemented Cattle Gained Most, Graded Best

Treatment	Average total gain	Average daily gain	Average stomach worm load per animal	Slaughter grade			
				Top standard	Standard	Low standard	Utility
				Per Cent	Per Cent	Per Cent	Per Cent
Pasture only	Pounds 236.5	Pounds 1.74	17,082	44	56		
Pasture plus 5 pounds supplement	277.9	2.05	21,150	70	30		
Pasture plus 5 pounds supplement and phenothiazine	259.0	1.91	10,170	58	42		
Pasture plus phenothiazine drench	225.5	1.66	12,065	22	22	44	12
Strip grazed	237.1	1.75	19,671	50	50		
Green chop, dry lot	181.5	1.52	4,850				100

What can you expect from spraying several thousand acres of range? An OSC range researcher reports . . .

Increased Grass Yields By Spraying Sagebrush



ABOVE is typical dense sagebrush range near Monument before it was sprayed in May 1955. Chemical applied was 1½ to 2 pounds of butyl ester 2,4-D. Several thousand acres were sprayed.

BELOW is same area one year after spraying. Researcher found best increase in grass came from such areas with a good understory of plants. Big increase, however, was in less desirable grasses.



HOW MUCH INCREASE in grass can you expect from spraying several thousand acres of sagebrush range? Do all perennial grasses produce more forage immediately? And, how much bitterbrush is killed?

A 1955 spraying trial in Grant County can help answer some of these questions. County extension agent Bill Farrell, cooperating with several ranchers, arranged for the spraying. Ranges were sprayed in May, 1955, with 1½ to 2 pounds of butyl ester of 2,4-D per acre. Test plots to check results were established by OSC range researcher Don Hedrick. He clipped plots in 1955 and 1956.

They found:

¶ Don't expect big first-year yield increases from valuable grasses, such as bluebunch wheatgrass and Idaho fescue. Big increases usually come from less valuable grasses, such as bluegrass, junegrass, and squirreltail.

¶ Avoid spraying bitterbrush range until more is known about how this valuable browse reacts to hormone brush killers.

¶ Select areas to spray that have fairly dense sagebrush and a good understory of plants which increase immediately—junegrass, squirreltail, and bluegrass.

¶ Provide enough ground control so pilots won't skip or miss spraying strips.

Slow regrowth of more important grasses confirms what research workers have found in other areas. Even drought-stricken ranges don't recover immediately after a year or two of normal rainfall. But rapid improvement can be expected from sagebrush ranges where well distributed bunches of less desirable grasses remain. While quality of this feed is not as good as that of better grasses, a threefold yield increase is often obtained a year or two after spraying. (See charts, next page.)

Some bitterbrush set back

Bitterbrush on sprayed Grant County ranges suffered a third to a half top kill the first year. Hedrick and Farrell are not yet sure this will seriously set back this valuable browse. The sprouting strain of bitterbrush may react similarly to rabbitbrush—early spraying for sage may not damage as much as late spraying. But un-



CATTLE grazing Bear Valley range that was sprayed in 1955. Test results indicate it's best to select areas with fairly dense sagebrush that have a good understory of plants which increase immediately—junagrass, squirrel-tail and bluegrass. More desirable grasses increase after the first year.

til more is known, they suggest ranchers avoid spraying ranges that have large amounts of bitterbrush.

Ability of 2,4-D to kill rabbitbrush varied. Best kills were obtained near Monument at lower elevations and on lighter textured soils. These results confirm present recommendations to avoid spraying sagebrush areas containing large amounts of rabbitbrush. (See *Oregon's Agricultural Progress*, Summer 1955.)

If rabbitbrush areas are sprayed, apply chemicals near the end of the effective killing period for big sage-

brush. (See *Oregon's Agricultural Progress*, Spring 1956.)

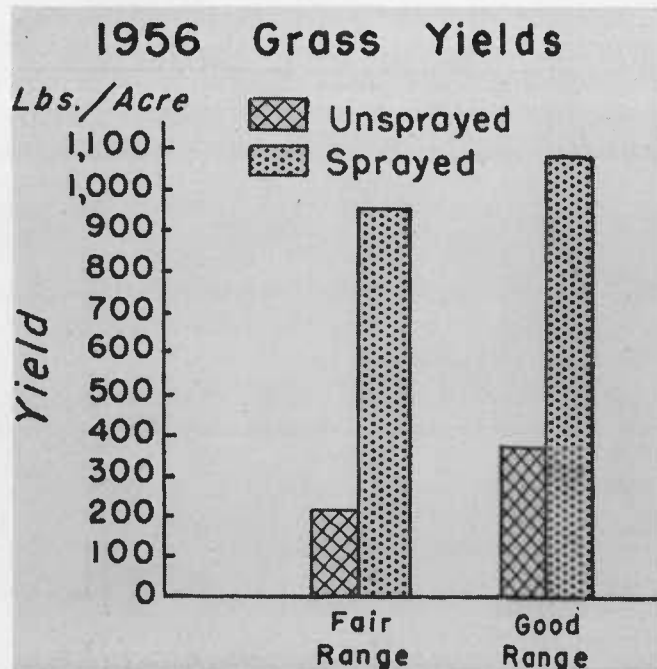
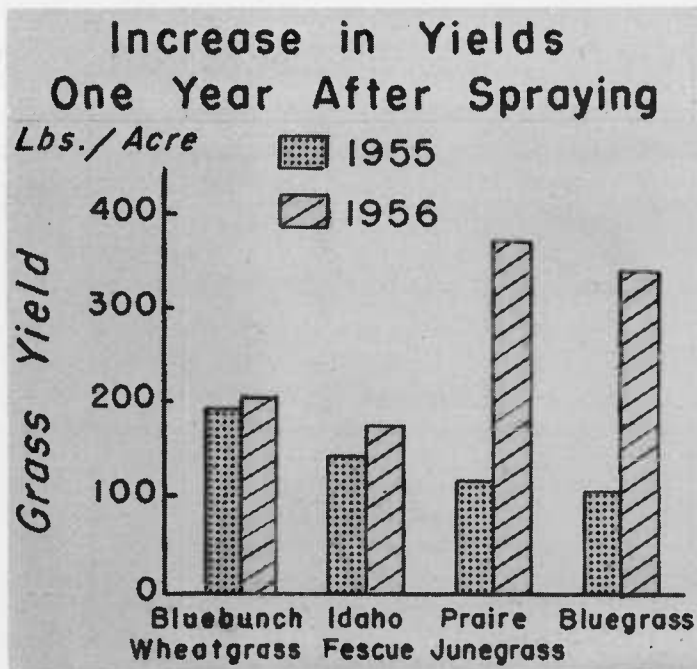
Grass easier to see

Where sagebrush is not dense, more grass may be present than is first apparent. One such Grant County range with a good understory of Idaho fescue was sprayed. Judging from general appearances, spraying had improved grass stands, compared to a nearby unsprayed range. But close checking showed the amount of grass had not increased—it was only easier to see. But as the chart shows, certain grasses

in some fairly dense sagebrush areas increased two to three times the first year after spraying.

And another chart of 1956 yields comparing 1955 sprayed vs. unsprayed ranges shows what spraying will do in dense, big sagebrush ranges. Grasses were mostly bluegrass and sedge.

Hedrick and Farrell also emphasize good ground control for guiding pilots. Many spraying strips were missed. Two men for ground control are suggested for uniform coverage, especially on rough ground or irregular brush stands.



Research Briefs

New Pear Varieties

• Higher Yielding Range Grasses

• Antibiotics for Feeder Lambs?

Three Pear Varieties Recommended for Commercial Trial

THREE PEAR VARIETIES now appear promising for commercial market trial in Oregon.

Horticulturist Henry Hartman reports that after 45 years of screening and testing more than 1,000 pear varieties at the Southern Oregon branch station, Medford, 7 appeared worthy of commercial trial.

Of the 7, 3 which appeared most promising were:

Nye Russet Bartlett. This bud sport originated in the Rogue River Valley, and is the best russet strain of Bartlett. The fruit is superior to Bart-

lett. Flavor is more spicy, and fruit is firmer when ripe. Skin texture resists mechanical injury and shelf life is fairly long. Storage tests indicate it keeps longer than Bartlett. Russeting is smooth with a deep yellow color.

Golden Doyenne. This is a bud sport of White Doyenne, but its fruit is higher in dessert quality, at least equalling Bosc. Russeting is smooth with a deep-gold color. Outstanding characteristic of this variety is its ability to withstand rough handling. Shelf life is long, and it resists pressure and friction bruising. This pear normally

keeps a month or six weeks longer than Bosc. While only medium in size, fruit is regular in size and shape. Like White Doyenne, the tree is thrifty and productive.

Grand Champion. This is a new russet sport of Gorham. Although under test for only a few years, Hartman thinks it will perform as well as Gorham. Tests indicate it is equal to Comice in dessert quality, but superior in remaining free of blemishes and resisting mechanical injury. Russeting is smooth, and the fruit develops a deep-gold color. Tests so far indicate it will keep up its appearance and remain in good condition at least through the Christmas holidays.

The horticulturist singled out these three varieties because of their high quality, plus their ability to withstand mechanical injury.

Other promising varieties include Packham's Triumph, Max Red Bartlett, Docteur Desportes, and Duchess de Bordeaux.

Hartman points out that a new variety must meet many drastic requirements to withstand rigorous, present-day competition. Some of the requirements for which these pears have been screened include eye appeal, dessert quality, shelf life, handling, fruit size, stem type, season, yield and grade, disease resistance, and trade and consumer acceptance.

Ability of Eastern and Midwestern pear areas to overcome pear blight and other market-damaging troubles has awakened interest in increased pear plantings, according to Hartman. He believes results of these trials may help Oregon pear growers meet new competition, if it comes. Some of these promising varieties should withstand mechanical packing, if this comes to the pear industry, too.

The horticulturist reports that the experiment station has no trees of these new varieties available for distribution now.



HORTICULTURIST Henry Hartman examines some Golden Doyenne pears, one of several superior varieties he thinks worthy of commercial trial. Some 1,000 varieties have been tested since 1912.

Antibiotic Increases Gains of Poor Quality Feeders



LAMBS fed an antibiotic gained more on less feed than lambs not fed an antibiotic. This result held true only for poor quality feeders. Better-quality range feeders on trial at the Union station gained just as fast and more efficiently than those fed an antibiotic. Pellets were fed at both locations.

ANTIBIOTICS added to a complete pellet ration increased gains and feed efficiency of poor quality feeder lambs.

That's a conclusion animal husbandmen C. W. Fox and J. E. Oldfield reached after a winter of lamb feeding at Corvallis.

Daily gains of good and choice range feeder lambs were not helped by adding an antibiotic, and feed efficiency decreased, according to results of a similar trial at the Union branch station by J. A. B. MacArthur.

No bloating

Lambs at both places soon became used to pellets self fed, and no digestive troubles showed up. No bloating was recorded, and feed intake was maintained throughout the test.

Pellets were a mixture of ground alfalfa hay, 60 per cent; ground barley, 30 per cent; and cane molasses, 10 per cent. Half the lambs in both places were fed pellets containing 30 grams of aureomycin per ton, half fed pellets without the antibiotic.

Lamb Feeding Results

	Av. daily gain	Feed per 100 lbs. gain
	Lbs.	Lbs.
Corvallis lambs:		
No antibiotic	0.23	1,160
Antibiotic	0.30	1,006
Union lambs:		
No antibiotic	0.36	872
Antibiotic	0.36	1,060

Lambs in both places were brought in off pasture last fall, vaccinated against enterotoxemia, and put on pellets in self-feeders. Corvallis lambs

were drenched with phenothiazine at the start of the trial.

Future studies will test use of low-quality roughage in pellets.

Two Range Grasses Outyield Crested Wheat

SIBERIAN WHEATGRASS and big bluegrass are two promising replacements for crested wheatgrass in a range re-seeding program, according to Scott Cooper, agronomist at the Squaw Butte-Harney experiment station.

Cooper reports 1953 to 1956 yield trials show Siberian wheatgrass outyielded the standard crested wheatgrass in all 4 years; big bluegrass in 3. Big bluegrass was slower to establish, but consistently outyielded all other grasses once established.

Yields were figured as pounds of air-dry matter (about the same as field-cured hay). Actual yields, along with total rainfall from September to August, are in the table below. Average precipitation for the 11 years preceding this experiment was 11½ inches per year.

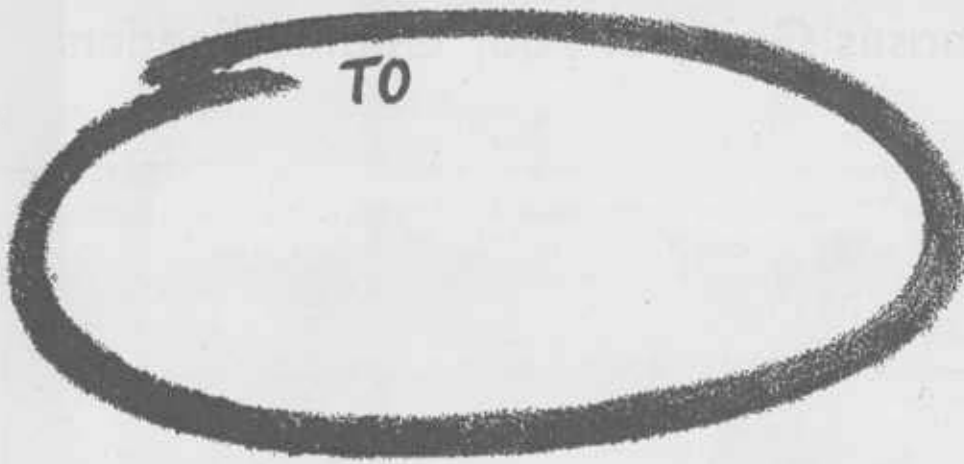
Big bluegrass begins growth much earlier in the spring than crested wheatgrass, but it is easily pulled up by livestock. Plant breeders will probably have to develop new strains to overcome this disadvantage.

Tall wheatgrass second

In addition to Siberian wheatgrass and big bluegrass, Cooper found that tall wheatgrass ranked second and third in the wetter years of '53 and '56, but was fifth and eleventh in the drier years of '54 and '55. Hard fescue ranked higher (fourth and seventh) in the drier years than in the wetter (eleventh). There was no important yield difference among the 6 strains of crested wheatgrass tested. A total of 12 grasses were tested by Cooper.

Yield Comparisons Among Wheatgrasses, Big Bluegrass

Year	Crested wheatgrass	Siberian wheatgrass	Big bluegrass	Sept.-Aug. rainfall
	Lbs./acre	Lbs./acre	Lbs./acre	Inches
1953	1,492	2,129	1,421	14.5
1954	406	820	1,336	10.0
1955	317	486	715	6.5
1956	1,368	1,991	1,997	15.1



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Farm Outlook . . .

(Continued, from page 3)

tion that goes a long way toward making livestock pay.

Cattle

Seven years of buildup in the nation's cattle numbers have ended. This shows what low prices and bad weather can do when they last long enough. Of course, this sort of thing isn't something new. It's happened in the cattle industry at least 6 times in the past 70 years. It happens more often in most other lines of farming but the effects may be less severe than in beef. It's part of the struggle to keep beef supply, demand, prices, and costs in satisfactory balance. The strain is rough on individuals. It sorts the men from the boys, but it helps keep the industry strong and efficient.

Anyway, the February 14 report that we were over the hump in cattle numbers was the nicest Valentine the Crop Reporting Service has been able to deliver cattlemen in several years. It brought a feeling of relief throughout the industry, and probably has helped to bolster prices.

Lambs

Lambs are sharing in the better prices growing out of the downturn in red meat supplies and continued strong consumer demand.

The early lamb crop in Oregon is a little larger than last year, but it is much smaller in California and Texas where drought has reduced stock sheep. This points toward a good finish for

the marketing season on last year's lambs carried through the winter, and a good start for the new lamb crop.

Lambs that can make the market before the Fourth of July may show more than usual profit over those marketed later. Creep-feeding to bring them along fast looks like a real moneymaker.

Hogs

Probably a big part of the firmness in the cattle market can be credited to the smaller supply and higher prices for pork. A sharp drop in hog slaughtering during the first 3 months of the year has more than offset a slight gain in beef and veal.

Wool

Surplus wool stocks will be out of government hands by the end of the year if sales move back up to quotas in the next few months. February sales fell below monthly quotas for the first time since last August.

Much local wool has been sold around 8 to 10 cents a pound, grease basis, above a year ago. Boston and other world wool markets advanced sharply last fall, but Australian auction prices were a little lower in March.

Government wool incentive payment in the year ahead will average smaller if prices hold recent gains. Biggest payments will still go to those who get the best prices for their wool.

Strength in lamb and wool markets keeps sheep in a favored spot on many Oregon farms. Sheep can't live on

fresh air and sunshine alone, but they make good use of pasture and crop aftermath that might otherwise go to waste.

Potatoes & onions

This year may be an exception to the old potato rule of "cheap seed—high prices." At least, that is the way March reports of planting intentions looked. They showed plans to plant practically the same acreage as last year. Growers in some states, like Idaho, planned increases while others planned less.

Unless some last minute changes are made, chances are potato prices at harvest time this summer and fall will be well under the same time last year. At the same time, the marketing season might end with prices somewhat better than this spring. If you are raising late potatoes, better see that your storage is sufficient and in good shape.

Onion growers have had a fairly good season but may be back in trouble next winter if growers go through with their early plans to increase plantings.

Poultry

Fall egg price prospects look better all the time. Hatch of egg-type chicks across the country during the past 3 months was off fully a fourth from the same months last year. March settings were down as much as earlier hatches.

Turkeys are headed for trouble this fall unless growers change earlier plans sharply this spring.