

The Big Change in Agriculture

Not so very long ago, a wheat grower in Arlington spent 60 days plowing his 4,000-acre spread. In Douglas county, it took three acres of pasture to support one ewe, and all of the snap beans in the state were picked by hand.

Things have changed.

Today, the Arlington wheat farmer can complete his plowing in two weeks. One acre of improved pasture is supporting three ewes, and a mechanical bean picker is doing the work of 250 laborers.

It's all a part of the big change in agriculture, harnessing test tubes, computers and machinery to produce more bushels per dollar—a change that is putting Oregon farm products into everything from breakfast foods to pizza dinners.

"The change in agriculture is still accelerating," says Walter Leth, State Director of Agriculture, "and we see no reason why it should slow down."

Agriculture is Oregon's second largest industry, with cash receipts of \$524 million in 1967. One out of four Oregonians owes his job to agriculture, and farmers in the state have invested over \$2.5 billion in their businesses.

Oregon's bountiful lands have made food processing the state's second largest manufacturing industry. It now employs 23,500, markets about 50 different foods and contributes more than \$300 million to the state's economy each year. (One out of eight of the nation's frozen food packages comes from Oregon.)

Food processing also has created Oregon's most valued farm hand—the food technologist. Campus researchers have helped make Oregon products taste better, keep longer and go into more shopping bags each year. It was an Oregon State staff member who assisted formation of Oregon Freeze Dry Foods five years ago. Today the Albany plant has become the world's largest of its type, with annual sales of \$8 million.

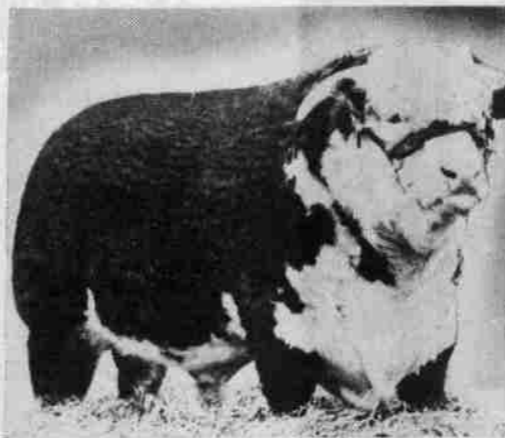
Some research is for the berries. Like at the Foamat Food Corp. plant at Corvallis, where through a new process developed by U.S. Department of Agriculture scientists, a box of raspberries is reduced to a spoonful of tasty crystals for use in cake mixes, dry cereals and other foods. And the same treatment is being applied to other Oregon berries, fruits and vegetables.

Oregon farmers are producing more food than ever before on fewer but larger farms. Farms have decreased by 21,300 in the last 20 years to a current figure of 41,500—average farm acreage is up from 335 acres in 1950 to 504 acres. Machines are replacing men, so much so that the average annual employment in agriculture has decreased 31% in the last 20 years.

With sophisticated machinery, a farmer today can provide enough food for 40 people whereas he used to produce only enough for 15.

"No industry has gone as far as agriculture in terms of better management and higher production," says Allen P. Wheeler, Master of the Oregon State Grange. Fred A. Phillips, first vice-president, Oregon Cattlemen's Association, said, "We keep trying for a little more efficiency. We've got to grow what people want; and what they want is high quality meat at as low cost as they can get it."

Machines are picking hops, husking corn, and sorting cherries. Fifteen years ago in Madras, it took two men four hours to feed 500 head of cattle, today, in less time they feed five times that number. A wheat grower today has six men on his harvest payroll, one quarter the number he needed in 1945.



Computers are programming high protein diets for feedlot cattle and storing breeding records of pure-bred Herefords.

Environmental control is another part of the technological revolution. According to Dr. G. Burton Wood, director of Oregon State University's Agricultural Experiment Station, "Today, we are developing the ability to control and manipulate change." As a result, controlled atmospheric storage at Hood River keeps apples fresh nine months after they were picked.

Irrigation in Umatilla County has doubled wheat yields. The introduction of bees has expanded alfalfa seed crops. And throughout the state, the test tube has replaced the manure spreader as the chief fertilizer distributor.

"Twenty years ago, I didn't use an ounce of fertilizer on my fields," says one farmer. "Last year, I spent \$12,000 on it."

The high price for soil enrichment points up one uncomfortable fact of life for today's Oregon farmer: farming today costs money, and lots of it. Land costs are moving up. So are taxes and equipment prices. A tractor that cost \$6,100 two decades ago now carries a price tag three times that amount. All in all, it takes 64 percent more cash to operate a farm than it did 10 years ago. In short, as Allen Wheeler sees it, money is the farmer's biggest problem.

"He's having to pay higher costs, and yet he's not getting paid any more for his product," Wheeler says. Less, in some cases. One wheat farmer recalls that 20 years ago he got \$2.60 a bushel for his crop. This year he got \$1.40.

And no technologist has provided the farmer with an umbrella that safeguards him from the vagaries of weather. 1968, for example, dealt out drought; floods and freezes that pared Oregon's crop value of production by almost 9%, and in some cases—like apples—resulted in a 34% drop over previous years.

But more than weather, it's the price squeeze that is forcing farmers off their lands. Farmers are selling out at the rate of about 1,100 a year, and, when farm families leave, the rural communities suffer.

So with all the advances in technology, the Oregon farmer still maintains a worried watch over the weather and hopes for a bountiful crop plus a decent price to enable him to start the whole cycle over again next year. And somehow he maintains an optimism born of a profession in which nature is both benefactor and adversary.

Thus change is accepted, nurtured and welcomed. As Marion T. Weatherford, wheat grower, cattle rancher and past president of Oregon's Agri-Business Council, says:

"What's going on in agriculture is the most exciting thing that ever happened, and we're just on the threshold of change."

We're part of the Big Change. Like the farmer, we rely on the technologist to improve our product and to expand its markets. We don't depend on weather for a crop, but we must be prepared to cope with its vagaries. And in order to continually market a better product, we too must be ever conscious of the rising costs of technological talents and equipment.

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