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THE CROP REPORTERS MAGAZINE
U.S. DEPARTMENT OF AGRICULTURE ● CROP REPORTING BOARD

WEATHER FOR THE COMING CROP SEASON





WEATHER FOR THE COMING CROP SEASON

What will the weather be? For a farmer, the question is one of more than passing interest: He knows that weather is the only major production input over which he has no control.

At USDA's annual outlook conference in mid-November, Dr. Richard E. Felch, weather analyst with the Department's World Food and Agricultural Outlook and Situation Board, discussed the weather outlook for 1978 and its possible effects on major U.S. field crops. The following is Dr. Felch's assessment, based on conditions at the time of the conference. . .

If it were possible to make accurate and timely long-range weather forecasts, a farmer could make certain adjustments to overcome potential problems, or at least to minimize their impacts. But such forecasts are still beyond our grasp and will probably remain so for many years.

Therefore, we're not at all sure about what kind of weather patterns to expect next spring and summer. The record books can only tell us what "normal" weather would be, but it's the unexpected shifts and turns that ultimately determine production levels.

It's possible, nonetheless, to begin planning and preparing for next season and making some adjustments for potential weather impacts. By examining current weather developments, reported soil conditions, and probabilistic weather data, we can reach some conclusions about crop prospects for 1978.

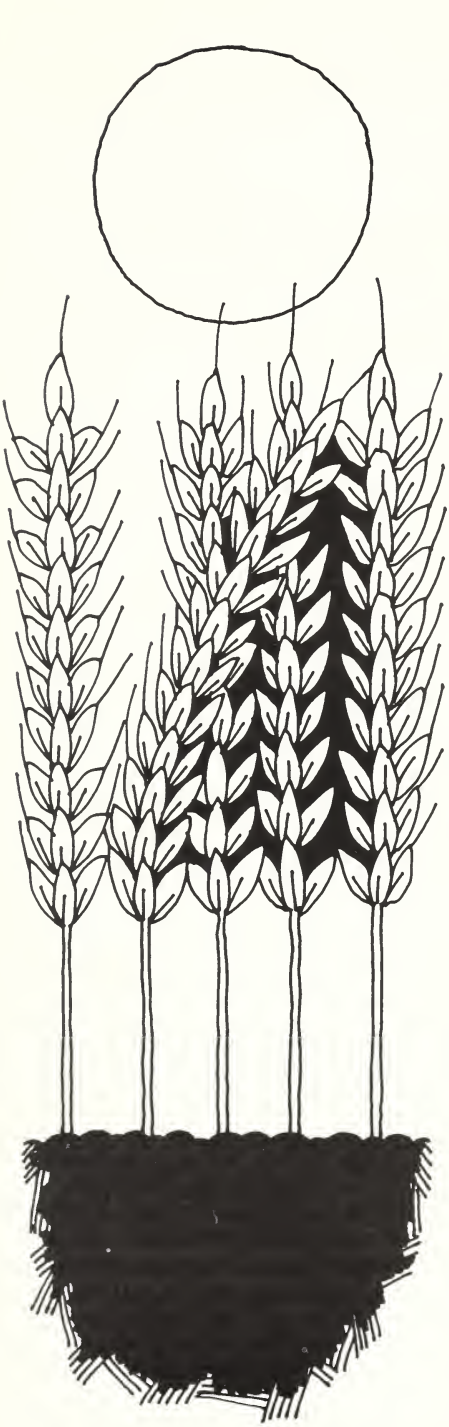
Recent weather events form the starting point for this evaluation. For example, the rainfall patterns of September and October have helped determine how much soil moisture the corn and soybean crops will have in 1978.

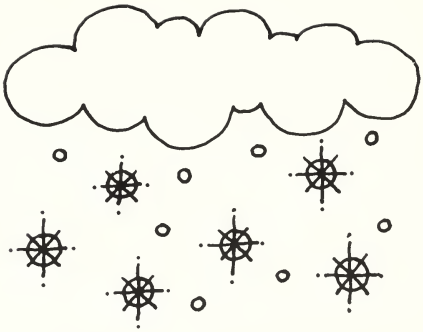
These patterns have already regulated the amount of fieldwork completed for next spring. They've also influenced the condition of the winter wheat crop, and in turn will partly affect how well the crop stands up to winter conditions.

The past summer brought mixed weather. Nearly every part of the country experienced some drought damage, but overall production reached record or near-record levels. In some areas, soil moisture remained unusually low throughout the growing season, but timely rains pulled the crops through. The Southeast was particularly hard hit, and pockets of intense drought also plagued the Corn Belt and Great Plains.

Present drought concerns focus on the Western States, particularly on the water supply outlook for 1978. A third year of below-normal precipitation could be devastating.

While not a major problem at the moment, drier than normal conditions prevail in the southwestern Great Plains. This area, which experienced some problems in planting winter wheat because of dry-





ness will bear close watching during the winter and early spring months.

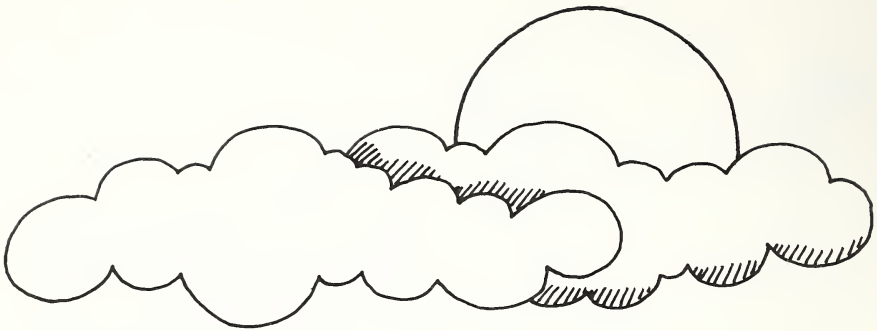
Meantime, rains in September and October sharply reversed the drought picture in all areas east of the Rockies. September moisture proved heavier than normal in the Pacific Northwest, the northern Great Plains, the Great Lakes region to the Gulf, and New England.

October was a month of extremes, marked by very wet conditions in some areas and extreme dryness in others. Over twice the normal rainfall soaked much of the western Corn Belt and eastern Plains. The area from the Deep South to the Ohio River was also soggy, and October rains relieved drought conditions in the Middle Atlantic States. Temperatures remained mild.

The upshot of all this precipitation is a soil moisture situation with conditions near or well above normal over most of the country from the Plains eastward. However, excessive wetness in some areas could have serious implications for 1978.

Of particular concern is a six-State area spanning parts of Nebraska, Kansas, Iowa, Missouri, Indiana, and a substantial section of Illinois.

This fall's rains have produced conditions as wet or wetter than the fall of 1973, which was followed by a very wet winter and spring and record flooding along the Mississippi River. As a result, 1974 corn and soybean plantings were



delayed, and the crops later endured extreme summer dryness and an early frost. This, of course, does not mean the situation will repeat itself in 1978.

With moisture conditions ranging from adequate to excessive across the central United States, what can we expect over the next few months?

During the winter, moisture loss is generally minimal, particularly in northern and central areas. The cooler temperatures reduce drainage and evaporation, and vegetation uses little water. Once the ground freezes, the water is trapped as ice and held until spring. Meantime, very little winter moisture penetrates the frozen soil.

In our major grain areas, the soils can usually absorb additional moisture when the ground opens up in the spring. And by planting time, spring rains have typically filled the soils to near capacity, particularly in the Corn Belt.

In 1978, however, soils will be nearly saturated when the ground thaws. Spring rains would maintain this situation, making fieldwork very difficult. This could be particularly troublesome, since fieldwork completed this fall lagged the normal amount.

Also, the fall's mild temperatures have kept soils open, so that those areas of excessive moisture could expand further. Given this information, it's possible to outline potential problems facing wheat, corn, and soybean producers in 1978. . .

Winter wheat. The eastern portions of the Wheat Belt show above-normal moisture and well-advanced crop growth. Excessive moisture may have caused some damage, and root growth may be stunted. Dry areas in the western Plains should also be watched closely.

Given the abundant moisture supply, growing conditions should be excellent when the crop breaks dormancy in the spring. With no additional moisture, current supplies should be sufficient for major growth. Only one or two good rains would be needed to carry the crop to maturity.

However, excessive moisture could make the crop more vulnerable to winterkill if the weather turns extremely cold and dry. Heavier soils might experience some heaving, exposing plant roots.

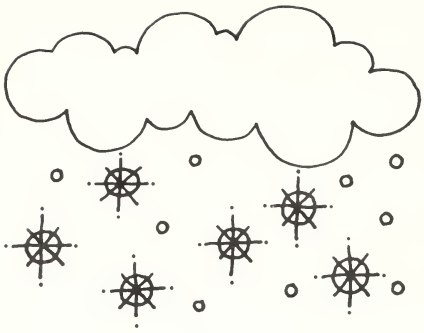
Overall prospects for winter wheat are good.

Spring wheat. Generally normal to above normal moisture prevails in the primary spring wheat areas. These conditions should not cause any major difficulty to fieldwork and seeding. But the crop must have normal to above normal moisture during spring and early summer.

Corn. Current moisture conditions now point to some delays in spring fieldwork and planting.

Producers in the excessively wet six-State area could experience significant delays with normal or above-normal rainfall. They stand





about a 40-percent chance of getting this amount.

A warm, relatively dry April would help a lot by allowing soils to dry sufficiently for fieldwork and planting. It would also speed the warming of surface soils, since wet soils tend to remain cold.

With today's equipment, U.S. corn producers can get the crop in the ground within 2 weeks if necessary—but only if the soil is drained. Therefore, the current situation indicates some problems, even with normal precipitation.

If planting is delayed beyond May 10, the general rule of thumb points to a yield loss of a bushel for each day thereafter that the crop is not in the ground. Cold, wet weather during or after planting also reduces or slows germination and enhances disease and weed problems.

Assuming that producers can get their corn in with minimal difficulty, soil moisture should be ample to carry the crop through the first few weeks of growth. However, the critical period is the reproduction phase which generally occurs 9-11 weeks after planting, and soil moisture must be ample at that time.

Soybeans. Any delay in corn planting could be passed along to soybeans, which are normally planted afterward. And while soybeans aren't affected as much by late plantings, delays push the reproductive period into the hotter, drier parts of the summer, upping the chances of reduced yields.

A CHECK ON RELIABILITY

Root Mean Square Error isn't exactly a household expression. . .unless maybe you're a regular user of Crop Production reports.

If you are, you probably know that the Root Mean Square Error (RMSE) is a statistical measure that first appeared in the June Crop Production report and now forms a regular part of each monthly issue.

The RMSE's purpose: to help data users evaluate the reliability of production forecasts. What it does is indicate how close the current forecast may be expected to come to the final production figure, and the odds of that happening.

The Crop Reporting Board began using the RMSE as a way to point out potential production variations that can occur between early season crop forecasts and the final estimate. Often these changes stem from unusually favorable or unfavorable weather or other factors that can't be anticipated, such as insects or crop disease.

Forecasts can also turn higher or lower based on the fact that more becomes known about a crop as it matures. For example, ear counts and kernel row measurements made late in the growing season reveal more about the size and condition of the upcoming corn crop than early season stalk counts.

The RMSE is based on the past performance of early season forecasts in relation to final estimates and therefore forms a logical range in which current forecasts are likely to fall.

The Crop Reporting Board computed an RMSE for major field crops for which it publishes monthly forecasts during the growing season. For example, to find the RMSE for the June winter wheat forecast, statisticians squared the differences (expressed as a percent of final production) between the June forecast and the end-of-the-season estimate over the past 20 years.

Statisticians then figured the average of these squared deviations. The square root of this average became the RMSE for the June winter wheat forecast. The same procedure was used to compute RMSE's for other major field crops.

Here's how it works, using the November corn forecast as an example: The RMSE for this crop and month works out to 2.2 percent. To this, statisticians associate what they call a "67-percent confidence level."

What it means is that the chances are two out of three that the November forecast of 6.4 billion bushels will not be either above or below the final production figure by more than 2.2 percent, or about 140 million bushels.

Three or 4 months before harvesttime, the RMSE's for most field crops average 6 to 7 percent. They drop to 2 or 3 percent in the last couple of months as the chances become smaller that the crop size will change significantly from the forecast figure.

Crop Production reports also show what can be expected at a 90-percent confidence level. For example, again using the November corn forecast, past experience shows that the chances are 9 out of 10 that the forecast will not vary from the end-of-the-season estimate by more than 3.8 percent, or about 242 million bushels.

THE TOP TEN

California has again earned more money from farm product sales than any other State. Collecting more than 9 percent of all 1976 marketing receipts, the Golden State ranked first in cash for crops and third in livestock sales. Total sales of $9.1 billion carried California past Iowa and Texas in a market that rang up $94.3 billion.

Iowa's No. 2 position meant $7 billion in sales, while third-place Texas notched $6.3 billion and led the Nation in cash receipts from cattle and calf marketings.

The remainder of the top ten boasted some familiar members:

Fourth-place Illinois, at $6.1 billion, led the way in corn and soybean earnings.

No. 5 Minnesota ranked high in dairy products, hogs, and barley and sold the most turkeys to boost receipts from all farm goods to $3.9 billion.

Nebraska fell just behind Minnesota, retaining the sixth slot mainly on strong sales of cattle and calves, corn, and sorghum.

Kansas captured the No. 7 spot with $3.5 billion in cash receipts, mostly from wheat, sorghum, and cattle and calves.

Newcomer Wisconsin knocked Ohio off the list with a $3-billion market built around dairy product sales totaling $1.8 billion.

Closing out the top ten was North Carolina, at $2.8 billion, backed strongly by first-place finishes in tobacco and forest products.

Honors for realized net income per farm went to Arizona once again, as producers averaged more than $67,000. California scored second at about $42,000 per farm, followed by Florida, $28,000, and Delaware, $24,000.

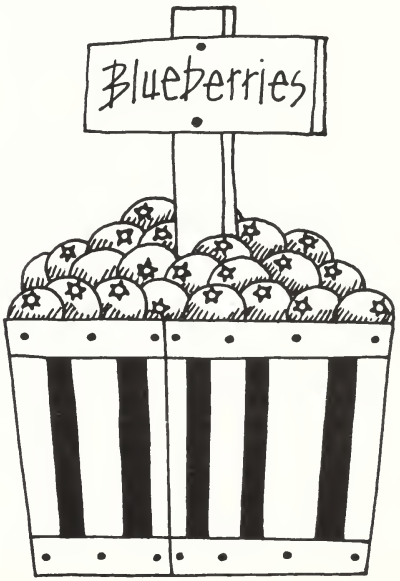
For the United States as a whole, realized net farm income averaged $7,885 per farm, up from 1975's $7,410 but well below the $9,801 earned in 1974 and the record $10,529 of 1973.

As California produces the most, so it also spends the most. Farm production expenses ran more than $6.8 billion there, while Iowa farmers had expenses of $6.5 billion, and Texas producers, about $6 billion.

THERE'S MONEY IN BLUEBERRIES

Blueberries may provide a new source of income to residents of the rural South. Agricultural Research Service scientists in Mississippi report that several varieties of rabbiteye blueberries are potential moneymakers in what could be a new Gulf Coast small fruit industry.

The berries should flourish in the warmer climes because they are relatively disease and insect free, require little cultivation, and grow well in acid soils. ARS scientists forecast a yield of 14 pints per plant after 6 years of growth. Producers could earn nearly $7,500 from a 5-acre pick-your-own operation based on 600 plants per acre at peak production.



KEEPING COYOTES AWAY

U.S. sheep producers might find coping with coyotes a lot easier with the help of a new electric fence currently being tested and refined by USDA's Agricultural Research Service (ARS). The fence alternates electrified and ground wires from top to bottom, making it impossible for a coyote to avoid simultaneous contact with both. Previous attempts at coyote-proof fencing failed because all wires carried a charge. Intruders could climb such a fence without being repelled since they must be grounded to receive a shock. Powered by a battery energizer, the shock fends off, but doesn't harm, coyotes and dogs—or sheep that may accidentally brush against the fence. Developed by an Australian and modified to this country's needs by ARS veterinarian Norman Gates, the new fence costs considerably less to install than conventional sheep fencing. To save energy and cut costs further, Dr. Gates has successfully used a wind generator as a power source and plans to try solar energy next. The new fencing should prove particularly useful on Federal lands, where nearly half the West's sheep and lambs graze. Poisons—once the chief means of coyote control—were banned on these lands in 1972 and since then, flocks grazing there have experienced the highest rate of lamb losses ever recorded. In tests so far, the fence has proven 100-percent effective in keeping coyotes out and sheep safely within. Currently, an estimated 55 percent of all U.S. sheep are kept in confinement, either on fenced rangeland or in farm flocks.





Left. Scaling this fence poses no problem for a coyote—as long as the power's off. When charged, the fence stops all coyotes from getting across.

Above. Snug in their electrified enclosure, sheep graze in total safety.





Above. After being fitted with a special radio-transmission collar, this coyote will be turned loose in a 160-mile test enclosure. Signals from the collar will tell researchers his whereabouts.

Left. Dr. Gates checks to see that wires are taut and securely attached to posts. Batteries for this fence are charged entirely by small windmill in foreground.



BARGE TRAFFIC GATHERS STEAM

Bigger barges moving a bigger volume of farm goods. That's what a USDA economist found when he examined the Nation's inland waterway system and the role it plays in getting products to and from American farmers.

Barges now carry almost three times the volume of major grains and soybeans as they did in 1960. Since 1966, barge shipments of fertilizers have doubled.

In a recent report, the economist cited a number of reasons for the increased flow of farm traffic on our navigable rivers and canals. Chief among them is a dramatic rise in grain exports, which move primarily out of ports along the Gulf Coast.

In 1975, barges carried 20.5 million tons of corn, versus only 4.7 million in 1960. And during 1973-75, strong export demand boosted barge shipments of wheat 188 percent, while soybean volume grew by over a third.

Also contributing to the heavier barge traffic is the fact that a large part of the total increased production of grain and soybeans during 1972-75 was concentrated in Midwestern States that either border the Mississippi River and its tributaries or are only a short distance away. Roughly 75 percent of all grain and soybeans sold from American farms in 1974 came from this area.

Barge operators also saw more agricultural business come their way when farmers began applying larger amounts of fertilizer. Between 1966 and 1974, U.S. fertilizer use climbed by a third, with a major portion moving by barge to Midwest grain-producing areas.

Still another factor is cost: As a rule, it's relatively cheaper to ship large volumes of bulk and liquid commodities by barge than by truck or rail. In fact, railroads introduced the cost-saving unit train concept several years ago to compete with barge traffic to the Gulf ports.

To accommodate the increased flow of farm products and other traffic, the Nation's waterway system has done some expansion of its own. Between 1963 and 1975, barge capacity swelled by 87 percent. A typical covered barge for hauling grain now measures 195 feet, claims a 1,500-ton capacity, and can haul as much as 25 conventional boxcars or 15 jumbo hopper railcars.

The industry also added muscle to its tugboats and towboats by way of a 73-percent hike in total net horsepower since 1963. Boats added to today's fleet boast up to 6,000 horsepower and can push a line of barges with cargo capacities ranging from 40,000 to 50,000 tons.

WINE GRAPES: SLOW ROAD TO MECHANIZATION

Machine harvest or hand pick? This was the question put to wine grape growers by USDA economists in California's San Joaquin Valley. The answers seemed to point to the side of manual laborers—at least for now.

The mechanical harvester was introduced to the Golden State in 1969, and by 1974, picked 5 to 10 percent of the crop. Mechanization has slowed, however, and no increase is seen in the immediate future.

Researchers conducted a series of interviews with producers prior to the 1973 grape harvest. Here's what they found—machine advocates pointed to freedom from labor problems and more control over their operation. But economics apparently tilted toward the grower who hired field laborers.

Economists calculated production costs for Thompson seedless grapes. Farms were grouped into sizes ranging from 40 to 240 acres, and costs were based on an average yield of 8 tons per acre.

Hand picking resulted in total production costs of $690 to $759 an acre, and mechanical harvesting, $687 to $926. At a farm price of $75 per ton, losses were incurred through both systems. A yield of 10 tons per acre, however, brought positive net returns to larger vineyards. If farmworkers' wages were to rise by 25 percent relative to other costs, the competitive advantage of machine harvesting would increase.

Farm size and yield were determining factors on when machine harvesting could compete economically with hand picking. On small farms, mechanized harvesters cost more per acre than hand systems. The break-even point at the 8-ton yield was reached at a farm size totaling no less than 220 acres.

Machine harvesting requires only 19 percent as much labor as hand harvesting. But there were some drawbacks to taking the mechanized route. Equipment maintenance was one. Also, vine damage and bruised grapes have plagued growers and brought complaints from wineries.

A NEW LOOK AT EATING OUT

The traditional scene of a family clustered around the dining room table for an evening meal may be going the way of the corner grocery. Or is it?

To be sure, eating out has become an American passion, but USDA economists say the trend may be overstated.

For example, most of what's said about the extent to which Americans dine out is based on dollar figures for expenditures. And since the price of a restaurant meal includes much more than the cost of food, comparisons of dollars spent for eating out versus eating at home tend to exaggerate the proportion of meals consumed away from home.

Economists "removed" this distortion by using the same price level for all food when estimating both at-home and away-from-home expenditures. They found that all food eaten out took 25 percent of the food dollar, up from 20 percent in 1955.

Going a step further, the economists subtracted out military and institutional meals, businessmen's expense account meals, and food eaten by restaurant employees—thereby leaving only the food paid for and consumed by household members who decide to dine out rather than eat at home.

The results: Only 17 percent of the food dollar went for eating out last year, up from just 14½ percent in 1955.

Briefings

RECENT REPORTS BY USDA OF ECONOMIC, MARKETING, AND RESEARCH DEVELOPMENTS AFFECTING FARMERS.

MILK SHAKES RECORD BOOK. . .World milk production is expected to rise to record levels for the seventh consecutive year. USDA's Foreign Agricultural Service says that output in the 36 major producing countries will probably climb 2% in 1977 to more than 395 million metric tons. A 2-3% increase in the U.S. and a 2% hike in the European Community should couple with a 4% upturn in the U.S.S.R. to boost total output. Forecasts show the U.S. with 55.6 million metric tons; the U.S.S.R., 92.4 million; and the European Community, nearly 103 million.

NO SIGN OF SOYBEAN FOE. . .Soybean rust has not invaded the U.S. yet. USDA's Animal and Plant Health Inspection Service (APHIS) surveyed 1,290 sites in 18 mainland States and Hawaii, but could find no evidence of the fungus which has caused crop losses of 50% or more in other countries. Officials checked soybean fields at 15-mile intervals in intensive growing areas and 20-mile intervals in areas with limited production. The good news—no sign of the rust. Certain bean crops which also act as hosts were inspected and found free of the infection as well. APHIS will continue the survey with special attention to legumes grown during the winter in the southern U.S. Soybean rust was first found in the Western Hemisphere last year in Puerto Rico.

WOODLANDS SUFFER. . .Gypsy moth caterpillars dined well on some of the Nation's forests this year. The pests defoliated 1.6 million acres of trees in eight Northeastern States, nearly double the 1976 tally. As usual, Pennsylvania was hit hardest, with damage to about 1.3 million acres. Several factors contributed: high winds in spring spread the moths over a wide area; severe cold killed off large numbers of the pest's natural enemies; a lethal virus failed to destroy its usual share of gypsy moth larvae; and reduced funds and manpower prevented massive chemical treatments. Experts in USDA's Animal and Plant Health Inspection Service say the pests, which have yet to reach their peak strength, are moving in a southwesterly direction along the Appalachians, where an abundance of oak trees provide an ideal habitat.

MORE MONEY FOR IMPORTS. . .The value of U.S. agricultural imports reached an estimated $13.4 billion in fiscal 1977 even though total volume rose only slightly. USDA economists report that higher prices for coffee, cocoa, and tea provided the surge past the previous year's $10.5 billion. Shipments of vegetables, fruits, and sugar increased while meat volume dropped a tenth. Further projections call for farm imports to approach $14 billion in fiscal 1978. Coffee and cocoa values will likely recede, offsetting upturns in meat and sugar.

TRACKING DOWN PLANT DISEASES. . .A pilot project to detect new diseases of major food crops in 10 Midwest States will be continued into 1978. USDA's Animal and Plant Health Inspection Service extended the program after turning up some potentially significant findings: maize dwarf mosaic virus—a corn hazard previously confined to the southern Corn Belt—in the Dakotas and Minnesota; apparent new soybean and corn viruses; and a fungus causing stalk rot of corn found in Illinois for the first time in many years. During 1978, the project will expand into Puerto Rico and parts of northern Mexico.

COUNTING SHEEP. . .As of November 1, 1977, sheep and lambs on feed in seven selected feeding States totaled nearly 1.2 million head. Data include figures from Arizona and Wyoming, which replaced South Dakota and Kansas for survey purposes because of declining production in those two States. Of the five States participating both this year and last, only Texas showed an increase. The remaining four—California, Colorado, Iowa, and Nebraska—registered declines, dropping the five-State total 4% from last year to just over a million head.

MOST FERTILIZER USED. . .Fertilizer use in the U.S. and Puerto Rico climbed to a record 51.6 million tons during the year ended June 30, up 5% from the year before. The 5 leading States in order of total consumption and change in quantity used were: California, up 7%; Illinois, up 8%; Iowa, down 12%; Indiana, up 23%; and Texas, up 5%. The Crop Reporting Board bases fertilizer consumption on all commercial tonnages sold or shipped for farm and nonfarm use.

FARM LABOR FORCE DECLINES. . .The Nation's agricultural labor strength dipped 4% to an estimated 4.1 million workers during the survey week of October 9-15, 1977. Farm operators plus unpaid family members working at least 15 hours made up the largest segment, about 2.8 million, and were supplemented by more than 1.3 million hired hands. Field and livestock tasks occupied 62% of the hired help. Family members, as a group, averaged 39 hours of work, compared with 38.1

hours last year. Farmers, on average, toiled 40.1 hours, while unpaid family members worked 36.8 and hirees 39.4. Wage rates for all methods of pay edged upward to $2.99 per hour, 19 cents more than last October. Those receiving only cash wages earned $3.08, an increase of 27 cents.

MORE FOR MOTORING. . .Farmers paid less for used cars and trucks in mid-November, but were paying more for new vehicles than they did 6 months earlier. The Crop Reporting Board's figures show that the average price paid by farmers for intermediate-size cars rose nearly $400 since May. Pickup trucks cost about $300 more, and 2-ton trucks took an additional $600. However, helping ease the price pinch were used cars, down $220 to an average of $1,870, and used trucks, with prices ranging $200 to $260 less than the previous May.

ALMOND UPDATE. . .Despite another record U.S. almond crop, 1977 world production is expected to decline 8%, due to sharply reduced crops in Spain—the world's second biggest producer—and Portugal. A cold wave gripped Spain last March, slashing production by more than half, while Portugal may show a 70% drop because of continuous rains and fungi infestation in major growing areas. Last year, American producers exported a record volume of almonds and signs point to further expansion this year due to the reduced Spanish crop and continued strong demand.

LABOR GETS THE LION'S SHARE. . .Labor costs became the biggest single component in the cost of marketing farm foods in 1977, topping the farm value of those foods for the first time. Total labor costs for processing, wholesaling, and retailing are expected to exceed $58 billion—from a food marketing bill estimated at $124 billion. USDA economists say the farm value will probably remain near $56 billion—a level maintained since 1974.

OUTLAYS FOR EXPORTS. . .Six States will share USDA grants totaling $164,843 to help develop export markets for their farm products. Made under the Federal-State marketing improvement program of USDA's Agricultural Marketing Service (AMS), the grants went to State agriculture departments in Alabama, Hawaii, North Dakota, Virginia, Washington, and Wisconsin. The funds will support projects ranging from helping Virginia boost its $200 million farm export market by as much as 10% to helping Hawaii determine the best time to promote papayas in Asian markets and the U.S. mainland. The six States will match the Federal funds with at least an equal amount of money to carry out the projects.

Statistical Barometer

Item	1975	1976	1977—latest available data	
Farm Food Market Basket:[1]				
Retail cost (1967=100)	174	175	179	October
Farm value (1967=100)	187	179	179	October
Farmer's share of retail cost (percent)	42	40	39	October
Agricultural Trade:				
Agricultural exports ($bil.)	22	23	1.7	October
Agricultural imports ($bil.)	10	11	.9	October
Farm Production and Efficiency:				
Farm output, total (1967=100)	114	117	121	November
Livestock (1967=100)[2]	101	106	108	November
Meat animals (1967=100)	102	106	108	November
Dairy products (1967=100)	98	103	105	November
Poultry and eggs (1967=100)	103	110	111	November
Crops (1967=100)[3]	121	122	128	November
Feed grains (1967=100)	114	119	124	November
Hay and forage (1967=100)	108	102	106	November
Food grains (1967=100)	142	140	131	November
Sugar crops (1967=100)	131	131	118	November
Cotton (1967=100)	112	142	186	November
Tobacco (1967=100)	110	108	98	November
Oil crops (1967=100)	153	130	168	November
Cropland used for crops (1967=100)	108	109	110	November
Crop production per acre (1967=100)	112	112	116	November
Farm Employment and Wage Rates:[4]				
Total employment (1967=100)	89	89	81	October
Family labor (1967=100)	83	83	78	October
Hired labor (1967=100)	92	97	89	October
Wage rates (1967=100)	190	208	220	October

[1]Average annual quantities per family and single person households bought by wage and clerical workers, 1960-61, based on Bureau of Labor Statistics figures.

[2]Gross livestock production includes minor livestock products not included in the separate groups shown. It cannot be added to gross production to compute farm output.

[3]Gross crop production includes some miscellaneous crops not in the separate groups shown. It cannot be added to gross livestock production to compute farm output.

[4]Seasonally adjusted.

Crop Reporting Board

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