

studying any legislation which would affect fertilizers in any way.

Profit and Service Problems

Declining profit margins have emerged as the major problem facing the fertilizer industry in all sections of the South. The problem of satisfactory profits to allow the industry to move forward in finding better fertilizers and in giving better service has several facets.

Creating sufficient market demand to absorb the increased production capacity completed in the past three years, or due on stream in the next two years, is a major requirement for obtaining satisfactory profits. Overhead on unused capacity adds to the difficulty of overcoming rising costs.

To a point, extra productive capacity proves valuable; it enables the industry to cope with the increasing tendency of farmers to wait until they actually need fertilizer to purchase it. Farmer financing of fertilizer as well as equipment, seeds, and pesticides, becomes more abrupt in the South each year, say some company sales managers.

An additional factor in financing

and credit extensions which may affect fertilizer sales in the future is the possibility of further decline in farm income. Although money has eased slightly in the drought areas of the Southwest, many operators have had difficulty in getting money to buy fertilizers to go with the favorable weather experienced this spring.

Service of many kinds by manufacturers continues to expand as part of efforts to elevate or maintain sales levels. Many of these services—demonstrations, special application recommendations, and in a surprising number of cases, soil testing—are expected on a regular basis by farmers. These services contribute further to the cost squeeze as the need for more sales training and equipment goes up.

Freight rate increases will have the expected results. More fertilizer will be moved by privately owned trucks and by barges. Increased freight rates are thought by some manufacturers to cause more imports of high analysis foreign fertilizers.

On the technological side, development of new fertilizer materials brings the manufacturer more problems in mixing, processing, and sampling.

To overcome declines in demand

or to speed rising demand, manufacturers and distributors put more emphasis on pasture fertilization. A qualification made by some is that meat prices must hold firm or improve to justify increased use of fertilizers on pastures. Occasionally mentioned along with pasture fertilization as a potentially large use is forest fertilization, especially in pine.

For the southern market as a whole, nitrogen in the form of granular materials or in solutions of several types is expected to grow fastest in the next two years. Anhydrous ammonia is expected to continue to grow, but at a slower rate. In Texas some dislocations may have occurred in the phosphorus and potassium picture through use of very heavy quantities of nitrogen, says a state official. There more stress is being placed on the importance of a complete fertilizer program.

Throughout the South, weather and farm prices will be the big factors in future fertilizer sales. By now Soil Bank effects have been pretty well determined—little effect in the Southwest and a decline in the Southeast. Regardless of these influences, the “hard sell” is on to make use of expanded capacities.

Narrowing Margins in the West; Tonnage Will Be Up, Profits Down

FERTILIZER TONNAGE will increase in the West this year, but profit margins are narrowing. In California tonnage passed the 1-million mark for the first time in 1956 and most observers in the industry expect the

figure to top 1.1 million in 1957. In spite of steadily increasing consumption, the West is an area of fertilizer surplus and will continue to be so as new plants come on stream.

Since last season, over 2600 tons

per day of basic fertilizer manufacturing capacity has been added in the West (see box) and the resulting competitive pressure is expected to depress profits. Seasonal shortages, which are usual in the West, have been local and temporary this year and confined to special situations.

Tonnages will continue to rise with a normal or better growing season expected throughout most of the West. Water shortages in some areas, particularly Southern California and Arizona, may have some local effect, but this will not be significant in the over-all picture. The Soil Bank program is not expected to have any serious impact on the western fertilizer industry this year, although here again some local situations may be exceptions. Withdrawal of acreage under this program will be counterbalanced by more intensive use of fertilizer on land remaining under cultivation. And the general western trend toward more fertilizer usage will help.

The profit squeeze is coming not so much from lower prices, but from increased costs of manufacturing, selling, and distribution. Anhydrous ammonia prices declined early this year, but further decreases now appear to be unlikely. Solid fertilizer prices have held steady and several observers believe that phosphate prices will increase by midyear or early fall.

Recently developed equipment injects soluble fertilizer into sprinkler irrigation system in California pasture. Ammonium sulfate and diammonium phosphate were used to meet the plant food requirements of this particular field





In California, helicopter is being tested for application of liquid fertilizers to rangeland. Nurse truck loads helicopter in less than a minute. Helicopter can reach land not accessible with ground equipment or airplane, and solutions stick without drift

Manufacturing costs are being pushed up, not only by steadily rising labor and overhead charges, but also by below-capacity operation in many plants. Ammonia plants in the West are reported to be operating at an average of 70% of capacity—of course with wide individual variations. Selling costs will move upward as more intensive selling effort is employed in the competitive market.

In distribution, the major part of the increased costs will be in the larger amounts of working capital which the basic suppliers have tied up in receivables and in inventory. Bank credit continues to tighten, and many distributors and dealers are looking to their suppliers to carry a major part of the credit load. Most producers report substantial increases in credit extended, and at least one manufacturer finds his credit to dealers and distributors at an all-time high.

Closely allied to the direct extension of credit are the growing practices of delayed billing and field warehousing. In some cases these policies have permitted the establishment of financially unsound dealers and distributors. This is generally recognized as an unhealthy situation, but under the competitive pressure of a buyers' market it is doubtful that manufacturers will do much about it.

In California, at least, basic producers are moving further into distribution—in many cases in a further effort to reduce costs. There is no clear pattern as yet, but there is a trend toward shortening the traditional producer - distributor - dealer - grower chain. This has usually taken the form of the producer's assuming the functions of the distributor, although in a few instances basic producers are selling direct to the grower.

The increasingly competitive market, particularly in ammonia, seems to have cooled the ardor of the farmers'

cooperatives for expansion in basic production. Several of these in California's San Joaquin Valley were actively considering the construction of ammonia plants last year. Under present conditions, however, it seems doubtful that any of the coops will be able to arrange the financing.

Export Markets Get the Eye

Several producers are eyeing the export market as an outlet for excess capacity. Thus far, export volume has been a negligible factor in the western picture, except for western Canada producers. Opinion is divided, but some producers feel that sizable markets can be developed in Central and South America, the Philippines, and Korea. Others, looking at the intense Japanese competition in the export market, believe that the solution lies in increasing use of fertilizer by growers in the West; general usage is still far below the amount which would provide the greatest economic return to the farmer.

An important trend in the West is the continuing swing to anhydrous ammonia and to liquid fertilizers of all types. In California, for example, while total fertilizer use rose some 8% between 1955 and 1956, use of anhydrous and aqua ammonia increased some 20% each. Mixed solid fertilizers were up 7%, but mixed liquid fertilizers jumped almost 30%. With the dry mixes, the move toward higher analyses is also continuing.

Minor element deficiencies are receiving increased attention. The use of molybdenum on legumes in northern Idaho and the wetter parts of eastern Washington is becoming common. In Washington, additions of this element were made on 5000 acres of peas in 1956. The 1957 usage will be extended to nearly 100,000 acres. Zinc deficiency is being recognized as

a serious problem in Arizona, southern Idaho, and parts of California. In certain areas of the latter state it has been particularly severe where applications of water soluble phosphate at planting time have been heavy.

In parts of the West some producers are advertising the presence of minor elements in their dry mixed fertilizers. In spite of rather widespread deficiency problems, however, this approach is generally regarded by soil scientists to be of value chiefly as a selling device. Ordinarily, they say, it fills no real agronomic need, since the trace elements required vary so widely with area and crop. Most research workers and members of state agricultural experiment station staffs believe that individual minor elements should be added separately as needed rather than introduced with the fertilizer in a "shotgun" application.

Water Solubles in Irrigation

Other technical trends in the industry include the application of water soluble fertilizers (such as urea-diammonium phosphate mixtures) by sprinkler at the time of irrigation. This technique is probably too new to have been thoroughly evaluated, and opinion is divided. The method has the obvious advantage of ease of application. But some experts wonder about the loss of ammonia in alkaline water and the fixing of phosphate on the surface of the soil. In the latter case, unless irrigation is followed by proper tillage, the fixed phosphate would not be available to the plant roots.

The production of nitric phosphate fertilizers has recently been started in the West. Again, the development is too new to permit definite conclusions to be drawn. In California, greenhouse tests have shown a very favorable performance on some soils, but

further information from field tests is needed. Grower interest is high. There has been little work on these products, either in the greenhouse or in the field, in other western states.

In several areas of the West there is growing recognition of carry-over of nitrogen and phosphate—sometimes for several seasons. This is particularly true with grass crops when heavy application rates have been used. Several of the state universities are now considering this factor when making recommendations for kind and rate of fertilizer application.

Closely allied to the carry-over question is the practice of fall fertilization, particularly in Idaho, Montana, and parts of California. In California fall fertilization of range lands and irrigated pasture lands is increasing. And in the Montana sugar beet areas it has become common to plow down phosphate and sometimes nitrogen in the fall.

Company & Location	Products and Capacities (tons/day)	Start-up Date	
California State Chemical Richmond, Calif.	Complete pelleted fertilizer	300	Oct. 1956
	Ammonium nitrate (liquid)	300	
	Calcium-ammonium nitrate (liquid)	300	
	Ammonium sulfate	150	
	Aqua ammonia	425	
Northwest Nitrochemicals Medicine Hat, Alta.	Ammonium nitrate	100	Nov. 1956
	Ammonium phosphates	300	
Phillips Pacific Chemical Finley, Wash.	Anhydrous ammonia	200	May 1957
Shell Chemical Ventura, Calif.	Urea (pellet)	100	April 1957
Standard of Calif. Richmond, Calif.	Anhydrous ammonia (sold through Calchem)	300	Oct. 1956
United States Steel Columbia-Geneva Div. Geneva, Utah	Anhydrous ammonia Ammonium nitrate (pellet)	200	Jan. 1957

Sales Steady, Profits Down In the Midwestern States

SALES IN THE MIDWEST are as good as or slightly better than last year's. But profits? Not so good. In a year of almost no sustained major trends and as many separate situations as there are states in the Midwest, the dim price and profit picture draws the most attention.

In the words of one sales manager, fertilizer prices are in a chaotic state—much worse than they were last year. Mixed fertilizers in particular are making very little money. Rough competition is usually given as the reason. In some areas general price cutting has prompted many farmers to hold off buying until a later time, figuring that prices will continue to drop. One major manufacturer says that prices have been cut to the bone. And he feels that his company will be lucky if it breaks even. His guess is that it will be two or three years before things get back to where a fair return can be obtained.

Increases in freight rates may not help matters. Up until now, most of the rate increases have been absorbed by producers, and most people along the distribution chain like to think this will happen on the next round. But consensus is that should rates go up again, it's almost certain that prices will go up, too. Immediate effects of an increase in prices due to freight rates will be to bring about a higher percentage of fertilizer delivery by

truck. Also, freight rate increases are expected to bring about more trading of tonnage (mostly in nitrogen between regional producers) in an attempt to fight equalization. Another effect may be to spur the trend to higher analysis fertilizers, a trend which was already marked over several years.

Producers and distributors in the Midwest list these prices per ton for nitrogen fertilizers:

- Anhydrous ammonia—\$105 to \$140 plus application
- Ammonium sulfate—\$45
- Ammonium nitrate—\$73 to \$80
- Urea—\$120 to \$125

In the sales and promotion area, all the fertilizer makers are stepping up activity. Some of the major producers are shifting slightly more toward direct sales. No headlong rush in that direction is expected, however, since it is an expensive proposition requiring a huge sales force.

Along credit lines, a growing trend is for basic suppliers to take on more of the credit load while distributors and dealers use their own cash. The trend isn't limited to fertilizers, but applies to goods and services for most phases of farming. Consignment selling also is growing.

The Soil Bank has generally had little effect on fertilizer sales in the

area. In instances where it has been felt, the net result has been to hurt sales. Kansas and Nebraska provide examples. In these two states, the acreage planted to wheat is the lowest in the last 25 years. Because of this, considerably less ammonium nitrate is being used as top dressing. Also, in Nebraska, 26.2% of the state's allotted corn acreage is in the Soil Bank, or 1.4 million acres out of about 5 million.

That fertilizer volume is good this season (even if no one is making much money) can be credited mainly to two influences:

- A large quota of weather, most of it wet
- Intensive promotion and sales campaigns by fertilizer makers, and educational work by agricultural colleges.

For the first time since 1949, most of the Midwest has had enough snow and rain. Drought relief may be only temporary, but for this year it means a great deal to the fertilizer industry. Rainfall may work two ways, of course, as in Kentucky. There, the expected larger spring fertilizer movement has been delayed because of abnormally wet weather.

With generally better weather, stepped-up advertising is paying off. One method of promotion is the banding together of fertilizer companies in a joint sales-promotion effort. An outstanding example of this method is a campaign carried out by the Nebraska Fertilizer Institute. Last summer, all of Nebraska's fertilizer makers and one in Kansas formed a