ture alone will be consuming almost 3.5 million tons of nitrogen in 1960.

While there is a strong likelihood of an oversupply of nitrogen for 1956, the zooming agricultural consumption curve for the U. S. indicates that there is equally a danger of a nitrogen shortage in 1960.

Chemicals for Conservation

Agricultural Conservation Program spending $55 million this year to encourage farmers hit by acreage allotments to start conservation practices

FARMERS faced with acreage controls are putting their idle land into better shape with the help of agricultural chemicals. And the Government is sharing the costs of these good conservation practices with them.

This year the Agricultural Conservation Program is getting an additional $55 million, which is earmarked for farmers hit by acreage allotments. ACP does not pay farmers just for diverting their acres from wheat, corn, or other supported products. The farmer must institute some approved conservation practice—such as planting permanent cover, terracing, or erosion control—before he can get government help.

Even when the farmer does decide to put in these conservation practices, he cannot sit back and wait for government checks to roll in. The Government's share of the cost usually comes to less than half the total cost. Conservation practices that have become a part of regular farming operations in a given area don't count, either. Costs generally are shared only on practices which farmers probably would not carry out unless given government assistance.

This fiscal year (1955), Congress has authorized $250 million for the ACP. The figure includes $195 million to carry out regular conservation programs, plus the extra money to take care of farmers with diverted acres. In the budget for fiscal 1956, President Eisenhower requests only $175 million for the entire program. He feels the emergency program for next year will not require as much money. By a bookkeeping change ACP also hopes to do as much conservation work with about $20 million less.

The national program of ACP is designed to meet the various conservation needs of the nation. Programs are planned for every county and state. Naturally, all the programs are not alike because of differences in need. As a rule of thumb, the programs are limited to the conservation practices on which Government cost sharing is needed most to achieve maximum conservation benefits for the state or county.

Conservation programs are developed on a year-to-year basis. But long range objectives are not overlooked. Local plans are worked out to provide the most enduring benefits which can be attained within any given year. The over-all conservation plan for the area may include the establishment of permanent protective cover, controlling shrubs, or constructing wells for livestock.

Establishing vegetative cover is one of the most common conservation practices supported by ACP. One of the first steps in establishing a good cover is the application of fertilizer and liming materials. This is not done indiscriminately. Soil tests are generally required so the individual requirements of farms can be met.

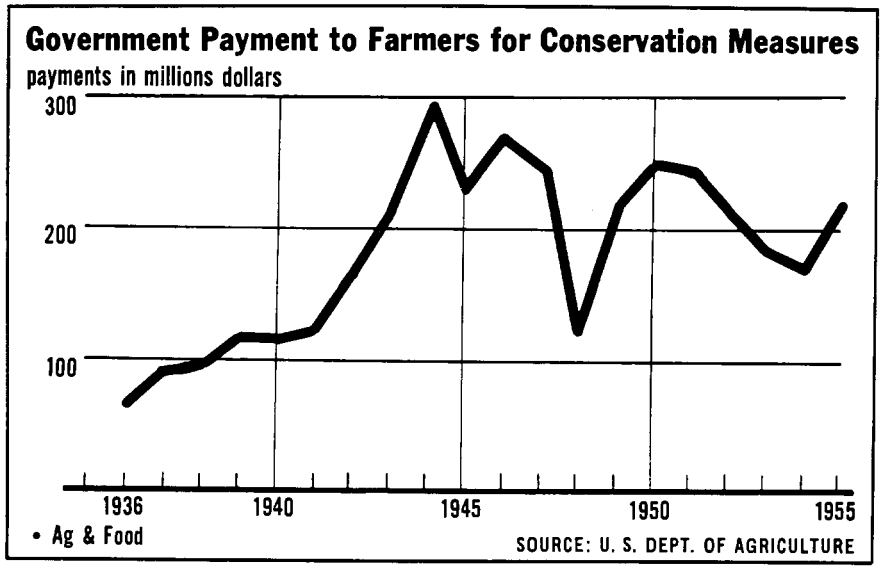
Before 1936, when ACP began, the use of lime on pastures was less than 6 million tons a year. Lime use on pastures went up immediately after the program started and now it is more than 25 million tons a year. (However, total agricultural use of lime has dropped in the past few years. See page 190). The use of superphosphate is more striking. Before ACP, the use of "super" on pastureland was negligible. But now it runs on the order of 3 million tons a year.

This does not mean that ACP will pay a farmer's fertilizer bill. The fertilizer used in conservation programs must be needed by the land to be improved. None of the farmer's regular purchases for land under cultivation can be included. The idea behind the whole ACP program is to achieve additional conservation methods on land now in

CHEMICALS USED IN CONSERVATION PROGRAMS (1952)

Fertilizers and Trace Elements	Amount in Tons
Liming materials, standard ground limestone equivalent	10,718
Phosphate materials: 20% P_2O_5 equivalent	1,518
Superphosphate, 20% P_2O_5 equivalent	1,184
Rock phosphate, 28% P_2O_5 equivalent	561
Colloidal phosphate, 28% P_2O_5 equivalent	4
Basic slag, 10% P_2O_5 equivalent	125
Heat fused phosphate—20% P_2O_5 equivalent	3
Potash, 50% K_2O equivalent	260
Gypsum or sulfur, 18% sulfur equivalent	31
Boron, 100% boron equivalent	44
Manganese, oxide equivalent	6
Copper, oxide equivalent	16
Zinc, oxide equivalent	3
Magnesium, oxide equivalent	6
Nitrogen in mixed fertilizer	880
Weed Control Chemicals	
Sodium chlorate equivalent	2,228
Borax	775
2,4-D, 100% parent acid equivalent	626
Carbon bisulfide[a]	30,174
TCA	53
2,4,5-T	5
Oil[a]	114,349
Paint thinner[a]	55,099
MCP	.2
Ammate	1
Sodium arsenate	5
Calcium chlorate	.5
Polyborchlorate	8
Copper sulfate	2
Iron sulfate	5

[a] Amount in gallons



Here's another aid for

We have just published a bulletin containing typical starting formulations for the preparation of emulsifiable concentrate and wettable powder forms of herbicides and insecticides.

Developed through the combined efforts and experience of ANTARA technical service and research groups, the formulas in this booklet will guide formulators in developing suitable liquid and powder forms of pesticides.

As always, we have trained men available to consult with manufacturers and compounders on specific problems of formulating insecticides and herbicides using ANTARA emulsifiers, spreaders, wetting agents and dispersants.

for the new booklet, "Antara Surfactants in Insecticides and Herbicides."

From Research to Reality

ANTARA® CHEMICALS

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

SALES OFFICES: New York • Boston • Providence • Philadelphia • Charlotte • Chattanooga • Chicago
Portland, Ore. • San Francisco • Los Angeles • IN CANADA: Chemical Development of Canada, Ltd., Montreal

production rather than to bring more land into production.

ACP is not an annuity, either. At first, the Government shares the cost of conservation measures that individual farmers probably could not afford, but which are in the national interest. These practices are slow to bring in returns on the conservation dollar. But as the project becomes more self-supporting, the Government withdraws its interest and the farmer assumes responsibility for maintaining the project.

With world populations rising, planners must look to the land to produce more food. But there is only so much land available for cultivation. It is becoming more important to save the fertility in the land we already have.

Erosion is one of the land's greatest enemies. Each year erosion ruins land that could feed millions of mouths. The same goes for once-fertile soil. "Tired" land that once produced rich crops is now practically barren. Conservation practices must be put into practice to save these lands for the future.

The short range view for farm production appears bright, sometimes even too bright, when troublesome surpluses are threatened. But the long range look requires planning. Conservation goes above the interests of individual farmers who use the land. Those who will use it later, perhaps to produce much more food, must also be considered.

Selling the farmer on conservation isn't always easy. Initial costs of some projects are high and returns are not always immediate. In hard times, conservation practices are among the first to go.

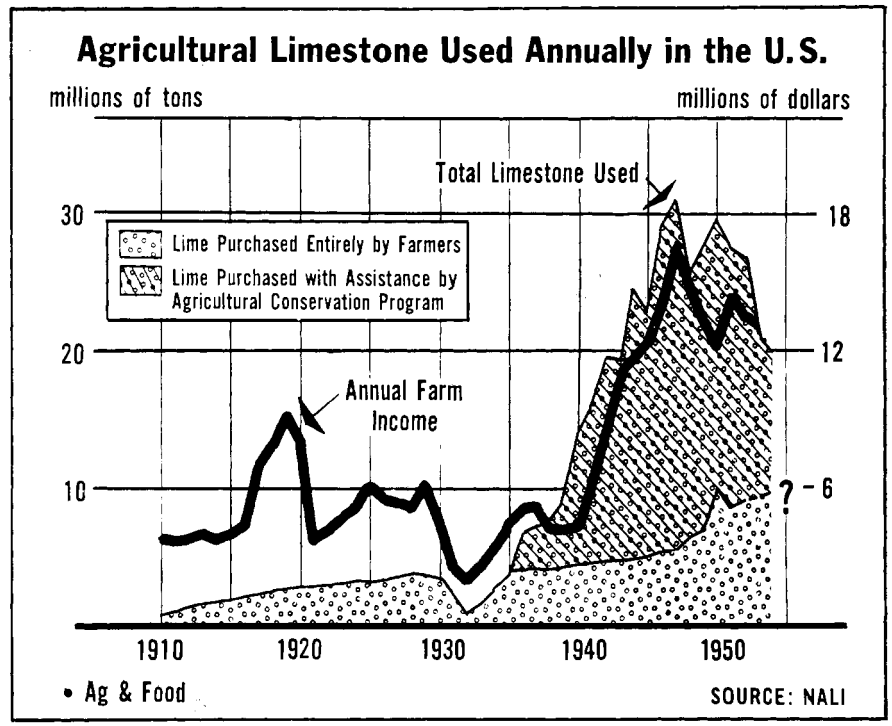
There to take up some of the slack will be the ACP. As the agency itself says, the 1955 ACP program has one purpose and one purpose only. It is to advance "the over-all conservation accomplishment of the nation."

Limestone Consumption

1953 cutback in Agricultural Conservation Program caused farm use of limestone to drop 25%

WHILE accurate data on 1954 consumption of limestone for agriculture are not likely to be available for several months, industry sources believe that a further drop occurred last year. Sales are off primarily because Agricultural Conservation Program funds have been tightened.

Nationwide consumption during 1955 is apt to go still lower. The Holland Amendment tacked onto the Agricultural Act of 1954, during closing hours of the 83rd Congress, now requires farmers to comply with all acreage allotments set up for their farms, if they are to be eligible for ACP payments. Farmers who grow wheat and corn for consumption on their farms are not likely to stay within allotments. Some sources estimate that over 50% of the farmers who normally qualify for payments will not be eligible this year.



Although the limestone industry hired more agronomists, more salesmen, and did more promotional work last year than at any time in its history, it can't seem to stall the downward trend. Consumption in 1953 dropped to 20.6 million tons, as compared with 27.3 million tons in 1952, according to the National Agricultural Limestone Institute.

The Secretary's office of USDA indicated in 1952 that only about 25% of the acreage needing lime was adequately treated in 1950—that 395 million tons of liming materials would be required for initial treatment of acreage then in need of lime. Once this acreage has been adequately treated, annual maintenance would take 47 million tons. NALI gives much higher estimates: over 500 million tons for initial treatment, and annual maintenance of about 80 million tons.

Consumption Closely Follows ACP Appropriations

Agricultural limestone consumption has tended to follow rather closely the fluctuations in ACP appropriations. In fact, ACP is generally given much of the credit for building lime consumption by farmers to its present level. Purchases by farmers on their own, however, have shown a steady increase, although the gains have not been spectacular.

So far, farmers haven't been encouraged to lime without government help, says an official of NALI. However, education itself is not the complete answer, if we are concerned about more closely approaching the goal which agronomists say we should be using. Until a better answer is found, the industry feels that ACP is the best, if not the only, way in which farmers can be encouraged to use the proper amounts.

NALI points out that the Extension Service has done an outstanding promotional job, in fact, better than anything the industry can or will do. From 1914 until 1936, when ACP began, practically every county agent in the eastern part of the nation advocated increased use of limestone. At no time during this period, however, did consumption exceed 3 million tons, and many times it went down to 1 million. ACP raised usage to 30 million tons shortly after it started.

Effect of ACP Tightening Has Been Widespread

In the Middle West, the decrease is due in part to tightening up by ACP. One effect of this action is to eliminate farmers who took advantage of ACP because they thought they were getting something for nothing. From a soil standpoint, the drop is not quite as serious as it might appear, because some inefficiencies in use are probably eliminated.

Midwest farmers in general are not convinced that lime will give them a