Nitrogen fertiliser survey

Department of Agriculture, Western Australia

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THE DECEMBER, 1968 issue of the "Journal of Agriculture" included, as part of an article on the economics of nitrogen fertiliser use, a lift-out section for farmers to complete and return to the Journal. In the lift-out, farmers were asked to calculate their fertiliser costs and answer a series of questions about the use of nitrogen on their farms.

In any postal survey a limited response is expected, and this one was made more difficult because it required farmers to make what at first glance appeared to be some complicated calculations before filling in a questionnaire and posting the lift out pages. Some 90 usable returns were received, representing about one return for each 70 farmers thought to be using nitrogen fertilisers.

Obviously this is not a fully representative sample but it is a reasonable guide to the approach to nitrogen fertilisers adopted by quite a high proportion of thoughtful farmers. It also gives an indication of whether or not farmers generally follow the Department of Agriculture's nitrogen fertiliser recommendations.

Some of the replies received also gave interesting insights into the problems met by individual farmers. Some of the solutions adopted presented useful ideas to be followed up by research workers.

Rate of application

Two-thirds of the farmers who returned the lift-out plan to use fertiliser rates recommended by the Department of Agriculture. The proportion appears high, but it still leaves 33 per cent. who will apply too much (24 per cent. of farmers) or too little (9 per cent.) fertiliser.

Certainly the best rate for a particular situation can vary from the recommended rate, so some farmers not following recommendations are possibly applying the right rate for their farms. About half the farmers made their choice of rates on the basis of experience with crops and more than a fifth had conducted their own trials. About one in six based their rates purely on the advice of the Department of Agriculture or its advisers—often after seeing the Department's trials in their district.

Time of application

Eighty per cent. of farmers intend to apply nitrogen at the correct time for their situation—at seeding time in areas with a short growing season; slightly later in areas with a longer growing season.

Of the remaining 20 per cent., two per cent. will apply their nitrogen too early and 18 per cent. too late. With the early applications there is likely to be a loss of nitrogen to the atmosphere, or by leaching. When the applications are made too late the young cereal seedlings will miss the chance of an initial boost from nitrogen applied close to seeding.

Method of application

The most common way of applying solid fertilisers will be from a combine immediately after seeding. Usually the combine's tubes and/or floats will be removed to allow a more even coverage. Topdressing from a drill before seeding will be the next most popular method.

Other farmers will use various methods to apply the fertiliser at seeding. Those using urea will mostly place it in the combine with the seed, in spite of a risk of reducing wheat germination. Others will attach a separate box or pull a second combine. Two farmers returning lift-outs intend to attach fertiliser spreaders to combines and two will use aerial spreading services.

This variety of methods indicates the practical problems facing farmers trying to apply solid nitrogen fertilisers at seeding time.
Sources of nitrogen

Nearly 88 per cent. of farmers returning lift-outs will use urea again this year, because of its cheapness and because they are satisfied with it. However 20 per cent. will also apply compound fertilisers, mostly on a trial basis, because of their ease of handling and application, or on areas where the ground is likely to be too wet to apply urea after seeding.

Conclusions

From the results it seems that most farmers who returned questionnaires use practices in line with the Department's recommendations. However, this does not mean that every farmer, or even the "average" farmer, is employing the correct practices for his situation. The latest recommendations for each soil type and situation are freely available from the Department of Agriculture's district agricultural advisers, who are familiar with soils and conditions in their own districts.

They should be consulted where any doubt exists about the form, rate or time of application of nitrogen fertiliser.

Useful information is also available in these recent Journal articles which are now available in Bulletin form:

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