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PROTEIN IN WHEAT IN PRIVATE INDUSTRY--  
A Breeding Survey

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This brief survey of private wheat breeding institutions was designed to help determine the emphasis, progress, outlook, and general philosophy of protein improvement in wheat. Six institutions--Cargill, DeKalb, NAPB, Northrup King, Pioneer, and Seed Associates--participated in the survey. Although there are additional private firms involved in wheat breeding, these six firms represent an adequate sampling for a survey of this type.

The answers given do not represent the official position of the companies, but they do reveal the philosophy of the wheat improvement teams working in those companies. The responses to questions are given on a group basis rather than by individual company. However, the individual company's response is included but not designated.

The questions and responses are given in the following:

1. Are high protein lines frequently utilized in crosses for the development of improved lines for varieties or hybrids?

Answer

5 yes

1 no (no intentional design in crosses for protein)

2. Are protein tests run on breeding lines prior to yield testing?

Answer

4 yes (1 extensive, 3 limited)

2 no

3. Are protein analyses made on lines, hybrids, or both, during the early yield-test stages?

Answer

6 yes

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4. Can genetic improvements be made in protein and yield simultaneously?

Answer

6 yes (1 replied new protein genes are needed)

5. In terms of percentage increase, what are your improvement goals for yield and protein?

Answer

Percent Yield Increase and + percent grain protein increase

10	more than current varieties
20	no improvement in protein
20	0.5 to 1
20	2
30	2
30	3.5

(note: a 2 percent increase in grain protein over a 12 percent base is 16.7 percent improvement)

6. Are State and Federal wheat workers giving proper attention to the breeding of high protein varieties?

Answer

5 yes  
1 no

7. Is the bread-baking industry adequately informed of the significant improvements made in the quality and quantity of protein in hard red winter wheats?

Answer

3 yes  
3 no

8. Are varieties now available that are genetically capable of producing high protein if fertilized and managed properly?

Answer

6 yes



9. Should more energy be directed towards alerting growers of ways to produce high protein wheat?

Answer

4 yes (1 - only if economic incentives exist)  
2 no (1 - growers are adequately informed)

10. Would a marketing system that consistently awarded growers a premium for producing high protein wheat alleviate the "protein problem" of processors?

Answer

5 yes  
1 no (need variability in protein levels)

A strong majority of the wheat breeding companies have indicated an emphasis toward developing higher protein wheats. In viewing the progress that has been achieved, indications show that Federal, State, and private wheat breeders have made genetically high protein varieties available to farmers. The outlook for future protein improvement consistent with improvements in yield is strongly optimistic in the majority's view. Most of the breeders surveyed feel that industries interested in high protein wheat should increase their efforts in encouraging growers in ways to produce high protein wheat. The concept is strongly supported that consistent price incentives for the growers would markedly increase the supply of high protein wheat.

