

DIAGNOSIS
CHARACTERISTICS OF THE GROWING SEASON

May, 1984

1. PLANTING DATE

Planting date is determined by weather conditions, labor availability, and other factors. These have been discussed in the outline on "Stand Establishment", section 6. Researchers should be aware of these factors in relation to the characteristics of the varieties sown by farmers. Relevant characteristics include time to flowering and maturity, photoperiod sensitivity, tillering characteristics, and tolerance to insects and diseases.

Questions and Observations (For each variety the farmer plants)

- Describe the characteristics of the farmer's variety: days to flowering, days to maturity, plant height, ear height, stalk strength.
- What climatic conditions (rains, frosts, etc.) determine the earliest and latest dates that the farmer's variety can be planted?
- How do the critical periods in the plant's development (flowering, tillering, etc.) coincide with dry spells?
- How do other weather conditions (heavy rains, wind, hail) interact with the growing cycle?
- If lodging is a problem, what type of lodging is it? Does it seem to be caused solely by external conditions, or is there also evidence of nutritional, disease, or insect problems as contributing factors?
- Is plant development in the farmer's variety determined by photoperiodic, photothermal, or other factors which may interact with possible planting dates?

- How does the farmer's variety perform in relation to disease or insect attack caused by changes in planting date?
- Are there other pests (birds, rodents) which affect the crop when planted outside the normal planting dates?

2. HARVESTING DATE (For each variety the farmer plants)

Harvest date of course depends on time of planting, but can also be affected by such factors as weather conditions, labor availability and end use of the crop.

Questions and Observations

- When is the farmer's variety usually harvested?
- Is the crop harvested all at once, or is harvesting staggered? Why?
- How does end use of the crop affect harvest date?
- Do heavy rains or other climatic conditions ever delay harvest?
- What losses are incurred if the crop is left in the field past the optimum harvest time?
- Is anything done to make the crop dry faster (e.g. doubling)?
- Are any by-products (e.g. leaves) harvested before the crop?
- Are any preparations made before the actual harvest of the crop?
- What method is used for harvesting?
- Is labor available for harvest, or does this sometimes cause delays?
- Is machinery available for harvest? What is its source?

3. END USES AND PREFERENCES (For each variety the farmer plants)

Farmers choose varieties taking into account a number of factors. A primary consideration is, of course, yield. But beyond this, farmers are

interested in varieties that meet their needs for home consumption and/or for sale. These factors can severely restrict the varieties that farmers are interested in planting.

*

Questions and Observations (For each variety the farmer plants)

- What is the approximate yield of the farmer's variety in a normal year?
- What proportion of the grain harvest is devoted to home use and what is for sale?
- What proportion of the by-product harvest is devoted to home use and what is for sale?
- What are the most common types of foods prepared with the crop? What characteristics of the crop are desirable for each of these foods (color, grain type, grain size, etc.)?
- What grain characteristics are desirable for marketing? How does price vary with grain characteristics?
- Does the farmer ever buy the grain for home use?
- How important are the crop by-products to the farmer? How does this influence choice of variety?
- What are the by-products used for in the home? What special characteristics are desired?
- How are the crop by-products marketed? How dependable is the market?
- Does the farmer ever buy the crop by-products for home use?

4. STORAGE

Farmers are also concerned about the storage qualities of the crops they grow. Whether the crop is stored for home use or for sale, farmers want to make sure that losses are kept to a minimum.

Questions and Observations

- How is the crop shelled/threshed?
- How is the crop stored?
- How long is it usually stored for?
- Are there any preliminary operations, such as drying or eliminating insect-damaged parts, before storing?
- What is the degree of insect damage in the crop when it is harvested? What causes this?
- What are the most common insect pests in storage? How are they controlled?
- Are there any problems with fungus or other moisture-related problems in storage? What is done to control them?
- Are there problems with rodents in storage? What control methods are used?

5. INTERCROPPING AND ROTATIONS

The type of variety that a farmer chooses to grow may also be dictated by other crops that are grown in rotation or association. Rotations may determine planting and harvesting dates. Associations may also determine crop cycle as well as dictate other characteristics of the variety.

Questions and Observations

- Do any crops grown in rotation impinge upon planting or harvesting dates for the target crop?
- Is any intercropping, relay cropping, etc. done with the target crop?
- What are the other crops? When and how are they planted?
- When is the intercrop or relay crop harvested?
- What are the end uses of the intercrop?
- What are the yields of the intercrop? What causes variation in yield in the intercrop?
- Are the crops that are intercropped ever grown in sole stands? If so, what are the results? If not, why not?
- What are the characteristics of the target crop that are desirable for its inclusion in the intercrop (in terms of support for other plants, light or moisture competition, cycle, etc.)?