

Wheat Stem and Head Injury in Southern Indiana
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Stem necrosis (death) was visible in several fields I visited in southern Indiana on 4/20/07. There was substantial variability between fields, varieties, and across the landscape, so each field should be assessed individually. In some fields very few stems were injured, whereas in other fields the main stem, primary, secondary, and tertiary tillers were lost. I was also able to find head injury in several wheat fields (Image 1). To assess stem injury, dig several wheat plants and identify the main stem on each plant (it will usually be the largest stem). Carefully peel away leaves to expose the lower most visible node. The stem below the node will appear normal, mottled and white (Image 2, 4), or begin to turn brown and flat (Image 4). Those stems that are completely brown are most likely dead and with warm weather will quickly lodge (Image 3). The mottled stems may be a precursor to stem death or may just show symptoms of cell damage to the epidermis (outside cell wall). It is uncertain if this damage will lead to weakened stems and lodging once we approach harvest. Follow this same procedure for each tiller to assess overall freeze damage and yield loss. Unfortunately, I was unable to locate a yield loss equation to assist growers in making the decision to keep or destroy a wheat field. If you have crop insurance, follow their recommendations implicitly. If you **do not** have crop insurance, my **best guess** is as follows: Loss of the main stem ~10 to 15% yield loss, main stem + primary tiller ~15 to 25% yield loss, main stem + primary + secondary tiller ~25 to 50% yield loss, main stem + primary + secondary + tertiary tiller > 50% yield loss. Realize that loss of main stem and tillers will also lead to decreased test weight and delayed wheat maturity (~7 to 10 days). These factors should be taken into consideration when deciding whether to keep or destroy a wheat crop.

