

Vegetal Cover Factors

The terms cover factor and vegetal cover factor are used interchangeably throughout this chapter and the Waterway Design Tool in the Engineering Field Tools.

The cover factor used for grassed waterway design is an important variable in the design process. Table 7-3 in the EFH provides cover factors and stem densities for a few common grasses used throughout the United States. However, it does not include brome grass. Brome grass is the most common type of grass used to stabilize waterways throughout Iowa.

After a review of research completed by the Agricultural Research Service in the development of grassed waterway design procedures and discussions with ARS personnel, the decision was made to assign a cover factor of 0.87 for brome grass and brome grass mixtures. Likewise, if tall fescue is used as the selected vegetation, it would also have a cover factor of 0.87.

The vegetation retardance factors used in designing grassed waterways should reflect the expected condition of the vegetation after the grass is established. Generally, for stability design, a “D” retardance value is selected. This reflects a condition in which the grass has just been mowed and is the worst case or most erodible condition that is expected after grass establishment. For capacity design, the designer must consider how the waterway will be managed. If the producer plans to mow the waterway several times a year, it is reasonable to use a “C” retardance value. If the waterway will not be mowed, or possibly only mowed once in the spring and once in the fall after harvest, a “B” retardance value should be used. In all cases, the selection of the retardance values to use in design is a site specific critical decision which the designer must make.