## Tips for Managing a Cereal Rye Cover Crop in Cotton

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### When to plant:
- August 15 to November 15 (Central and South Arkansas)  
- August 15 to November 1 (North Arkansas) or Mid- to Late-Boot

### Seeding rate:
- 25 – 30 lbs/A drilled or 50 – 60 lbs/A broadcast

### How to terminate:
- 1.0 lb ai/A glyphosate (56 lbs per bushel)

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| Produces large amounts of biomass | Produces large amounts of biomass | Select a southern cereal rye variety  
- Elbon Rye (OK)  
- Wrens Abruzzi Rye (GA) | Soil structure improved |
| Easy to terminate | Requires deeper setting and slower speed when planting cotton | Spread cereal rye over the top of the cotton prior to defoliation | Internal drainage of soil improved |
| Reduces soil loss | Rolling terminated cereal rye prior to planting cotton is not recommended while rolling green standing rye in front of planter may be beneficial | Early planting at defoliation by air adds $6 - $7/A, but allows for greater biomass production as a result of more favorable temperatures | Soil health improved  
- Lower soil temp  
- Increase biological activity  
- Earthworm population increases |
| Reduces soil loss | Rolling terminated cereal rye prior to planting cotton is not recommended while rolling green standing rye in front of planter may be beneficial | Early planting at defoliation by air adds $6 - $7/A, but allows for greater biomass production as a result of more favorable temperatures | Soil health improved  
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| Scavenges nutrients | A coulter mounted ahead of planter units will increase the ability to achieve desired stand of cotton | Late planting after harvest with fertilizer buggy can impact the potential to develop desired biomass as a result of cooler temperatures | Effective rooting depth of cotton improved which greatly reduces occurrences of nutrient deficiency symptoms |
| Improves soil organic matter | Can be rougher at planting because of root crowns. Can roll green to address crowns and existing stalks as green rye will stand back up | A coulter mounted ahead of planter units will increase the ability to achieve desired stand of cotton | Water infiltration from rainfall and irrigation improved |
| Physical barrier  
- Weeds  
- Retains moisture  
- Reflects heat  
- Reduces crust  
- Reduces sand blasting | A coulter mounted ahead of planter units will increase the ability to achieve desired stand of cotton | A coulter mounted ahead of planter units will increase the ability to achieve desired stand of cotton | Water infiltration from rainfall and irrigation improved |
| Allelopathic properties  
- Smaller the seed the more susceptible  
- Most effective if residue left on soil surface  
- High levels released as rye starts dying until it is dead | Consider early burndown timing application to address broadleaf weeds to facilitate a clean stand of cereal rye lessening issues with green bridge | Spread cereal rye with fertilizer buggy on freshly hipped rows to ensure soil covers seed with next rain for uniform germination and emergence | Furrow irrigation water movement down the row slowed |
| Reduces thrips | Termination timing is important in managing allelopathy | Using a 40 ft swath on fertilizer buggies may present a challenge in reducing flow of seed to achieve desired seeding rate. We have experienced very good results in our tests using a 60 ft swath on a Willmar buggy to spread 1.0 bu/A | Weed control benefits may be reduced if cereal rye is terminated too early |
| Fits many rotations | Can be difficult to achieve desired stand of cotton in wet spring using conventional cotton planter with no modifications with excessive biomass production | Fertilizer efficiency improved and eases fertility management | Sediment and nutrient loss from irrigation reduced |

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