



Iowa

Liam is a farmer in Cedar Valley, Iowa. As in many Midwest states such as Ohio, Illinois, and Nebraska, corn is an important crop. Much of the corn grown in these Midwest states is used for livestock feed and fuel, as opposed to direct human consumption. Optimum planting time runs from mid-April to mid-May, taking advantage of warmer soil temperatures. Liam is looking for a set of cover crops to plant in the spring after the corn has had time to get established. He is hoping for help with weed suppression, erosion control, and adding organic matter to the soil. Overall, precipitation has been low and unpredictable the last few seasons, so Liam would like to make sure his cover crops will last. Your task as a group is to choose a combination of three cover crops to help Liam with his soil needs. You will need to provide a justification for all three choices.



Kansas

Darius is a farmer in Sunnydale, Kansas. As in Great Plains states such as Oklahoma and Nebraska, wheat is often grown here thanks to fertile soil. Kansas leads the nation in winter wheat production, growing more than 23% of the US crop. Winter wheat is milled into all-purpose flour used in baked goods. Optimum planting time runs from late September to early November, taking advantage of the cooler, wetter growing conditions of fall and spring. Darius is looking for a set of cover crops to plant with during the summer that would also act as a livestock forage crop. Darius is hoping to improve weed suppression, water infiltration, and nitrogen capture. Overall, precipitation has been relatively stable the last few seasons. Your task as a group is to choose a combination of three cover crops to help Darius with his soil and livestock needs. You will need to provide a justification for all three choices.



Oklahoma

Henry is a farmer in Silver Creek, Oklahoma. As in Great Plains states such as Kansas and Nebraska, wheat is often grown here thanks to fertile soil. Hard red winter wheat is the main variety of wheat grown in Oklahoma and is often used to make bread. Optimum planting time runs from mid-September to early November, allowing crops time to get established before the full effects of winter set in. Henry allows his cattle to graze on young wheat plants during the dormant period; with proper management crops are not damaged. Henry is looking for a set of cover crops to plant with his wheat crop to help maintain his soil during the dormant period. He is hoping for help with erosion control, moisture-holding capacity, and increased nitrogen in the soil. Overall, precipitation has been low the last few seasons, so Henry would like to make sure his cover crops have at least some drought resistance. Your task as a group is to choose a combination of three cover crops to help Henry with his soil needs. You will need to provide a justification for all three choices.



Texas

Sebastian is a farmer in Willowbrook, Texas. The state of Texas has many diverse soil types and sustains multiple crop types, with corn being the number two cash crop. Optimum planting time depends on where in the state you are located, ranging from mid-March in South Texas to May or early June in the Panhandle/High Plains. Sebastian is located in central Texas, so his optimum time runs from late March to April, when soil temperatures are consistently above 60° F. Sebastian is looking for a set of cover crops to plant with his corn crop in the fall, taking advantage of the warmer temperatures. Sebastian is hoping to suppress weeds, reduce erosion, and get help with pest control. Texas heat has caused a drought the last few seasons, so Sebastian would like to make sure his cover crops will tolerate both heat and drought. Your task as a group is to choose a combination of three cover crops to help Sebastian with his soil needs. You will need to provide a justification for all three choices.



North Carolina

Amelia is a farmer in Golden Acres, North Carolina. Soybeans have been a number-two cash crop in this state for decades. North Carolina does grow a variety of other crops and has become a leading producer of tobacco as well. Optimum planting time for soybeans runs from late March to early May, depending on the specific region in the state. Amelia is looking for a set of cover crops to plant after soybean harvest in the fall, providing ground cover, reducing erosion, and improving soil health for the next crop of tobacco planted. Overall, precipitation has been mid-low to average the last few seasons, so Amelia would like to make sure her cover crops have at least fair drought tolerance. Your task as a group is to choose a combination of three cover crops to help Amelia with her soil needs. You will need to provide a justification for all three choices.



Arkansas

Fiona is a farmer in Cloverfield, Arkansas. Thanks to the Mississippi Delta region in eastern Arkansas, rice can be cultivated in fertile alluvial soils. More than 50% of the rice grown in the US comes out of Arkansas, making it an important part of the state's agricultural economy. Optimum planting time runs from late March to early May, when soil temperatures consistently range from 60°F to 65°F. Fiona is looking for a set of cover crops to plant after rice harvest which usually occurs from September to October. Fiona would like her cover crops to help fix nitrogen, provide ground cover, and break up soil compaction. Overall, precipitation has been average to slightly above average, causing no issues with the flood irrigation often used. Your task as a group is to choose a combination of three cover crops to help Fiona with her soil needs. You will need to provide a justification for all three choices.



Tennessee

Jasmine is a farmer in Stonebridge, Tennessee. Well-distributed rainfall, fertile soils, and ease of use in crop rotation with other major crops have made soybeans the top crop in Tennessee. Soybeans are a versatile crop and are often used in animal feed production. Optimum planting time runs from April to early May, avoiding late frosts that could damage the crop. Jasmine is looking for a set of cover crops to plant after bean harvest in the fall using species that can overwinter. Jasmine is hoping to increase biomass production, reduce weeds, and provide ground cover. Overall, precipitation has been average the last few seasons within the region. Your task as a group is to choose a combination of three cover crops to help Jasmine with her soil needs. You will need to provide a justification for all three choices.

Florida

The Weber family owns a farm in Belle Glade, Florida. While Florida is well known for its citrus, the top field crop in Florida is sugarcane. Sugarcane is restricted to a small region of the US that only includes Florida, Louisiana, and Texas. All Florida sugarcane is processed in four mills in south Florida. Optimum planting time runs from September to November, taking advantage of more stable temperatures and the end of the rainy season. The Webers are looking for a set of cover crops to plant in the spring after the sugarcane has time to get established. They are hoping to add nitrogen to their soil, suppress weeds, and build overall soil structure. Since these cover crops are growing in Florida, they need to tolerate heat well. Your task as a group is to choose a combination of three cover crops to help the Webers with their soil needs. You will need to provide a justification for all three choices.