

1. **Title of paper presentation** : Genomic strategies for soybean oil improvement and biodiesel production
2. **Type of presentation** (one of the following):
 - a. Research paper presentation – Track Session
3. **Contact information of the presenter or author(s): name, address, phone, email, title and organization, indicating any corresponding authors**

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4. Track Subject Matter

1. Transportation Fuels

5. Abstract

Soybean oil, a promising renewable energy resource, comprises 73% of biodiesel in addition to other industrial applications. Missouri is the fifth largest state in the US for soybean plantation. With the target to produce 225 million gallons of biodiesel by 2015 from the current 75 million gallons produced in 2005, efforts should not only focus on expanding the number of oil crops to meet the demand but also to increase the amount of oil per hectare for each crop. Considering the ever increasing need for biodiesel and the potential for Missouri to play a major role in national and international demand, We, at the National Center for Soybean Biotechnology focus on discovering the genetic factors that are responsible for oil content in soybean using genetic and genomic strategies. The long term goal is to apply discoveries in breeding programs and biotechnology for the development of improved soybean cultivars with increased oil content that will make this crop more competitive in end-uses. Our multidisciplinary approaches include traditional Quantitative Trait Loci (QTL) mapping, association mapping, bioinformatics and transgenics by developing new resources and utilizing already available resources such as mapping populations, diverse germplasm collections, genome sequence information and transgenes. In addition to total oil content, we are focusing on improving quality traits such as

oleic acid which has direct human health benefits and application in biodiesel production. With the use of advanced genomic technologies, genetic materials, and synergistic efforts involving intra- and inter institutional collaborations, we believe that our current and future research will contribute substantially to biodiesel production. Increased production using high oil soybean cultivars will not only increase the economic gains to farmers/growers but also facilitate the US to emerge as the global leader in biodiesel production.