

# CARINATA FACTS

## Carinata — A new opportunity for southern US farmers to lead the way in delivering renewable energy solutions through sustainable agriculture

Southern US farmers now can become champions of energy independence by delivering sustainable feedstock for renewable energy solutions while generating additional farm revenue in the winter. Sustainable renewable energy solutions separate food from fuel production, minimize indirect land use impact, manage soil and water to maximize carbon sequestration and ecosystem services, and minimize greenhouse gas emissions throughout the supply chain. There is tremendous demand for feedstock for renewable diesel and sustainable aviation fuel (SAF). Particularly useful among these feedstocks are those in the “fats, oils, and greases” category due to proven and approved conversion technologies that are ready to scale. The southern U.S. has a unique ability to produce a high percentage of these feedstocks due to year-round favorable environment and suitable production systems. The southeastern U.S alone has over 12 million acres of row crops with the potential to provide suitable land for winter production without interfering with traditional summer cash crops.

*Brassica carinata (Carinata; Ethiopian mustard), is a leading SAF and renewable diesel feedstock especially suited to the southern US for the following reasons:*

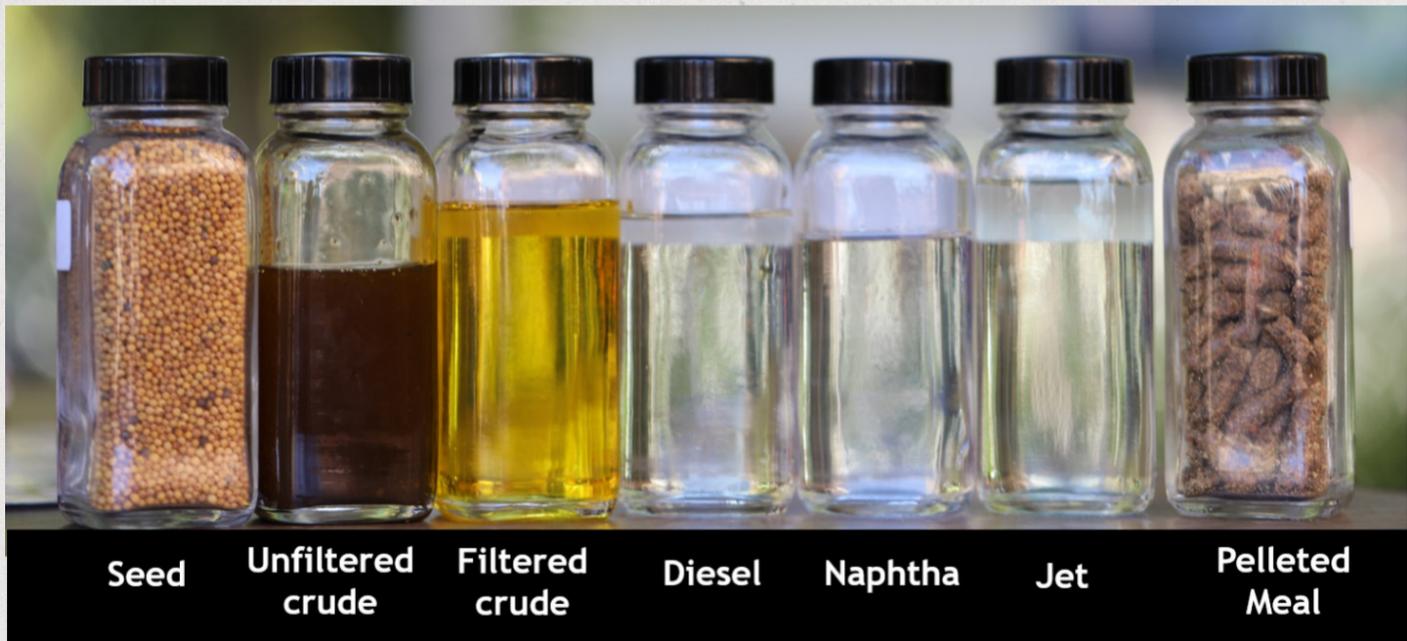
1. Purpose-grown non-food oilseed crop that can be grown on underutilized land in the winter;  
Does not compete with or displace other cash crops
2. Superior to canola and rapeseed in terms of seed size, drought and heat tolerance, low water use, and low rates of seed shattering
3. Compatible with current agricultural infrastructure (harvest, handling & storage, transportation, processing) in the region
4. Improves soil quality and reduces nutrient leaching relative to winter fallow lands
5. High oil content (>45%); Highly desirable chemistry to produce “drop-in” SAF, renewable diesel, naphtha, and other byproducts
6. Several ASTM approved pathways for conversion of carinata oil to fuel including Applied Research Associate’s (ARA) CHJ process
7. Meal (after oil extraction) is high in protein (40-45%) and can be used as beef, dairy, and poultry feed
8. Roundtable of Sustainable Biomaterials (RSB) certified feedstock for sustainable oil and meal

The Southeast Partnership for Advanced Renewables from Carinata (SPARC; [www.sparc-cap.org](http://www.sparc-cap.org)) is a USDA-NIFA funded public-private consortium whose goal is to provide alternative revenue and soil building options for Southern US farmers through the commercialization of winter carinata as a renewable fuel and bioproducts feedstock. Nuseed is SPARC’s industry partner that has developed Nuseed Carinata to provide maximum impact in the soil, on the land and in the air. With strategic deployment, a trusted carbon stewardship program, scalable global supply, and regulatory excellence, Nuseed Carinata is accelerating the shift to net zero energy sources. By keeping carbon in the soil and using its oil as a renewable biofuel source, this is a powerful crop when it comes to reaching carbon positive goals. Nuseed is focused on quantifying and decreasing carbon emissions, specifically focusing on soil carbon capture, and measurable GHG reduction achieved through traceability in supply and the ability to generate the data required to demonstrate ‘net zero’ or better performance. Nuseed Carinata is currently grown commercially as a cover crop in South America. Commercial production in North America is anticipated in the near term.

Research and Extension through SPARC in collaboration with Nuseed has led to the establishment of best management practices for successful production of carinata in the Southern US. Through systematic social science approaches the team has identified gaps to crop adoption that can be addressed through continued participatory research. This team has demonstrated the conversion and successful use of drop-in fuel from carinata in commercial and military aviation. Research continues to support and sustain commercial carinata production and SAF and other biofuel and bioproducts in the region.



Carinata in full bloom



Carinata: Seed to fuel and meal

For more information on carinata commercial production, fuels and coproducts from carinata and SPARC activities check out our resources and contacts at [www.sparc-cap.org](http://www.sparc-cap.org).