



GreenPave

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INTRODUCTION

- There is no substitute for sustainable and environment friendly roads for globalization and urban development. The prevention of asphalt pavement distresses, various researchers have numerous findings.
- Kenaf Fiber is mainly use to increase the tensile strength of pavement composite.
- The fiber asphalt mixture has better resistance cracking degradation under loading.
- According the definition of the Federal Highway Administration (FHWA), sustainable development should meet three requirements: meeting performance standards, utilizing resource effectively and preserving the ecosystem. Kenaf fiber is ecofriendly and sustainable material.

MATERIALS & METHOD



RESULT

The tests data are given for four different jute fiber percentage 0%, 0.1%, 0.2%, 0.3%,0.4% and 0.5%. Here 0% means plain asphalt mixture with no fiber.



Fig: Dynamic Creep Test Result

Fig: Marshal Stability Test Result

PROBLEM STATEMENT

- Ravelling is the main problem of dense graded asphalt pavement
- Air voids
- Steel fiber, Cellulose, polyester fiber etc. are used in various researches but among them kenaf fiber is eco-friendly and more sustainable among others.

INNOVATION



CONCLUSIONS

In this study, different percentage of kenaf fibers has added in asphalt mixture and analyzed in different loading conditions. The result shows that addition of kenaf fiber has increased the tensile and comprehensive strength. The significant improvement has been done when 0.5% kenaf fiber using in asphalt mixture. It appears kenaf fibers, that has good adhesion with bitumen, reinforce the asphalt mixture and preform as "Bridge" which make a bond both sides of the crack.

OJECTIVES

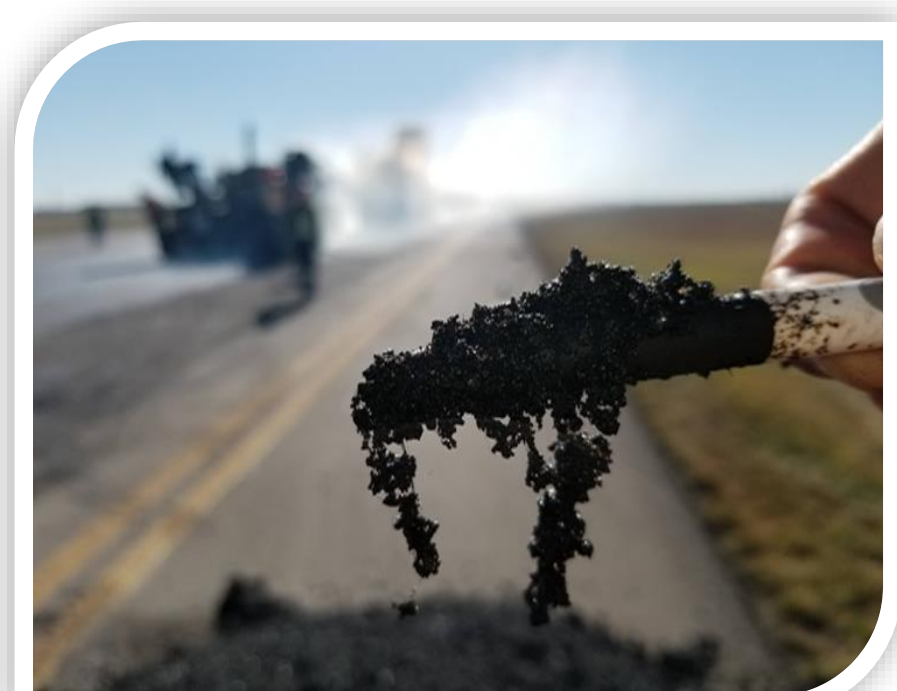
- Analysis the typical asphalt mixture with fiber reinforce asphalt mixture
- Reduce the Air voids of pavement
- Steel fiber, Cellulose, polyester fiber etc. are used in various researches but among them kenaf fiber is eco-friendly and more sustainable among others.

COMMERCIAL VALUE

- The performance of eco-friendly kenaf fiber reinforced asphalt as a sustainable pavement material. It is cheap and available than other fibers.
- As the world continues to urbanize, dramatic increases in traffic volume. So this fiber asphalt pavement subsequently increases the quality, durability as well as comforts driving.
- Available and environment-friendly fiber-reinforce asphalt is rutting resistant and durable in coolest weather in developed countries.

NOVELTY

Kenaf fiber asphalt mixture results in the increase of stiffness, tensile and compressive strength, fatigue life and cracks resistance against permanent deformation.



EXPERIMENTAL DESIGN

Marshal Stability Test :

- Density test
- Stiffness test
- Stability test



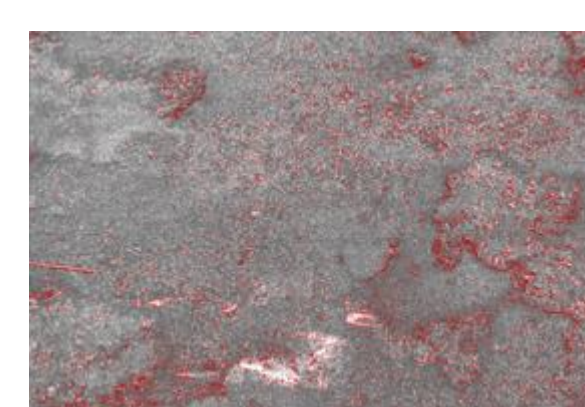
Dynamic Creep Test:

Percent of strain and loading cycles are examine incorporating different fiber in different temperature.



Digital Image Processing(DIP):

Digital image processing technology can analyze the cross sectional image of aggregate distribution, and the fracture condition of asphalt mortar.



INVENTORS



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