



## Possible anti-diabetic and anti-hyperlipidemic efficacy of blended Rice Bran Oil with sesame oil (RBSO) in comparison with Soybean oil (SO): A clinical investigation in pre-diabetic and diabetic individuals

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### ABSTRACT

**BACKGROUND:** In a path-breaking research by Dr Devarajan Sankar et al, published in the highly rated the American Journal of Medicine (2016) under the title “A Blend of Sesame and Rice Bran Oils Lowers Hyperglycemia and Improves the Lipids”, it was reported that a novel blend of 20% cold-pressed unrefined sesame oil and 80% physically refined rice bran oil as cooking oil, lowered hyperglycemia and improved the lipid profile in type 2 diabetes mellitus. Based on this research, Adani Wilmar Limited launched their ‘Fortune Vivo Blended Oil with 20% unrefined cold-pressed Sesame Oil and 80% Physically Refined Rice Bran Oil. Subsequently, Fortune Vivo Blended Oil was clinically tested by AIIMS-Bhubaneswar AIIMS- Bhubaneswar for their critical clinical evaluation of the usefulness of the said oil in prevention and management of Type-2 Diabetes Mellitus (T2DM, adult onset diabetes) – which is over 90% of all the Diabetes cases in India

**STUDY:** AIIMS-Bhubaneswar Internal Ethics Committee after due presentation and compliance of all regulatory requirements admitted the clinical evaluation of the oil and its health claim as an extra mural study. Totally 108 adults (type-2 diabetic n= 51, prediabetic n=28 and healthy (non-diabetic) participants n=29) were subjected to an Investigator Initiated, Randomized, Comparative, Double Blind, Crossover Study, in which the participants consumed the experimental and the control (Refined Soybean) oils as the sole cooking oil for 12-weeks. Fasting- and Post Prandial Blood-sugar levels, and Glycated Hemoglobin (HbA1c), as well as Lipid Profile and Systolic- and Diastolic Blood Pressure were checked at the beginning (baseline) and the end after 12-weeks. A due washout period of 21-days was provided to the Crossover Groups. The data was expressed as mean + SD. Analysis of data was done using SPSS software. Pair t test, t test, ANOVA with multiple comparison using LSD, and  $P < 0.05$  was considered statistically significant.

**SALIENT CONCLUSIONS:** While there was no significant change in the Fasting- and Post Prandial Blood Sugar levels as well as in HbA1c in non-diabetic group, there was significant drop in FBS & PPBS levels in Pre-diabetic and Diabetic groups. The drop in Diabetic Group was several times more as compared to the Pre-diabetic Group i.e. the experimental oil lowered blood sugar levels more efficiently as the blood sugar levels increased above normal levels. By logical extrapolation, the experimental oil namely Fortune Vivo Blended Oil when consumed by a non-diabetic person as the sole cooking medium will remain just a healthy cooking oil till the person progresses to Pre-diabetic stage where Fortune Vivo Blended Oil will start lowering the Blood Sugar Levels towards the Non-diabetic levels – thereby retarding the progression of this chronic condition from Pre-diabetic to the Diabetic stage. Lifelong consumption of this blended oil has therefore the potential to significantly reduce the actual number of persons reaching the full-blown T2DM stage. The groups consuming the control oil (refined Soybean Oil) showed insignificant change in FBS and PPBS in Non-, Pre- and Diabetic Groups, and actually an increase in the HbA1c in the Diabetic Group over base levels after 12-weeks of consumption. It is thus evident that the blood sugar lowering effect of the Fortune Vivo Blended Oil is unique and is not possessed by common vegetable oils like Soy Bean Oil. In toxicological study on Kidney & Liver functioning, actually significant improvement was noticed in Non-, Pre- and Diabetic Groups consuming the experimental oil for 12-weeks. There was no change in the Kidney and Liver functioning in the groups consuming the control oil (refined Soybean Oil). No adverse effect was noticed in any of the groups.

**Keywords:** Diabetes, Edible Oil, Hyperglycemia; Lipids; Sesame oil blend; Type 2 diabetes mellitus patients