

# THE ANALYTICAL COMPOSITION OF THE BIODEGRADABLE UNIVERSAL TRACTOR OIL BASED ON THE VEGETABLE OILS

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**UDC:665.334.9;621.892**

**ABSTRACT:** The basic function of the lubricant is the lubrication i.e. the diminishing of the friction between two surfaces in relative motion. Besides, they are also used to transfer power, heat transfer, cooling, corrosion protection and so on. Lubricating oils and greases are the third tribology element and their use is necessary for the proper function of almost every mechanical system. This paper presents development and testing of the biodegradable universal tractor oil based on the vegetable oils. The agricultural equipment is ideal for the use of biodegradable oils based on vegetable oils because it is used in the very proximity of the environment where the lubricant can come into contact with the soil, water and crops. This is the ideal opportunity to create permanent cycle where the agricultural equipment is lubricated by the oil from the plants grown in the fields cultivated by the very same equipment. Universal tractor oil (UTTO) is the multipurpose oil for the lubrication of the transmission, rear axle, differential, wet brakes, and hydraulic system fed by the common oil reservoir.

**KEY WORDS:** biodegradable universal tractor oil, oil analysis, physic chemical properties

## ANALITIČKA KOMPOZICIJA BIORAZGRADLJIVIH UNIVERZALNIH TRAKTORSKIH ULJA NA BAZI BILJNIH ULJA

**REZIME:** Osnovna funkcija maziva je podmazivanje, odnosno smanjenje trenja između dve površine koje su u relativnom kretanju. Osim toga koriste se i za prenos snage, prenos toplote, hlađenje, zaštitu od korozije itd. Maziva ulja i masti su treći tribološki element i njihova upotreba je neophodna za pravilno funkcionisanje skoro svih mehaničkih sistema. U radu je prikazan razvoj i ispitivanje biorazgradivih univerzalnih ulja za traktore (UTTO) biljnog porekla. Poljoprivredna oprema je idealna za upotrebu biorazgradivih ulja na bazi biljnih ulja, jer se koristi u neposrednoj blizini okoline gde mazivo lako može doći u dodir sa zemljištem, vodom i usevima. Ovo je idealna prilika za stvaranje trajnog ciklusa u kome se poljoprivredna oprema podmazuje uljem iz biljke koja raste na polju koje se obrađuje tom istom opremom. Univerzalno ulje za traktore (UTTO) je višenamensko ulje za podmazivanje transmisije, zadnjeg mosta, diferencijala, mokrih kočnica i hidrauličnog sistema sa snabdevanjem iz zajedničkog uljnog rezervoara.

**KLJUČNE REČI:** biorazgradljivo univerzalno traktorsko ulje, analiza ulja, fizičko hemijska svojstva

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<sup>1</sup> Received: November 2016, Accepted November 2016, Available on line December 2016

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