Method of Obtaining Cumin Seed Oil with Antimalarial Activity

UW ID: 14-078
Inventors: Valtcho Jeliazkov
Patent Status: Patent Pending

Description of Technology
Researchers from the University of Wyoming have developed a method of obtaining cumin seed essential oil with highly improved antimalarial activity. Antimalarial activity is doubled with this method, compared to common cumin seed oil extraction.

After ten distillation times (DT) are studied and compared each individual extracted sample is analyzed for chemical composition using gas chromatography. Antimalarial activity is then analyzed by the National Center for Natural Products Research at the University of Mississippi. Extracted oils from distillation times proved effective against Plasmodium falciparum, a protozoan parasite that causes malaria in humans. Antimalarial activity was doubled within cumin seed oil obtained at 5 minutes and 7.5 minutes compared to other oils extracted from other distillation times. Chemical compositions also differed with these two distillation times.

Applications
Improved antimalarial activity of cumin seed oil could prove effective for malaria prevention in Africa, Asia and South America. Cumin seed powder and cumin oil could potentially be encapsulated for malaria treatment.

Features & Benefits
- Production of cumin seed oil with twice the antimalarial activity as common cumin seed oil
- Widespread potential benefits
- Natural edible ingredients

Market Opportunity
The World Health Organization documents more than 200 million cases of malaria a year. Currently, the plant that is used for malaria treatment is Artemisia annua L. (Asteraceae), due to the active antimalarial ingredient artemisinin. Oil from cumin seed is edible, while oil from A. annua is not edible and resistance has been reported.

Production of cumin seed oil with double the antimalarial activity as common cumin seed oil has the potential of becoming the first line of defense against malaria throughout the world.