



# The miracle of the blessed seed



The world is grappling through a pandemic which has turned into an unprecedented health crisis like never witnessed before. The healthcare system is struggling to cope up with the tremendous pressure. The situation only seems to be worsening with every passing day.

Although we still do not have any approved anti-viral therapy for effectively curing Covid-19, some recent findings have offered a sliver of hope. New studies indicate that thymoquinone, the active ingredient in *Nigella sativa* (black seed/ black cumin/ kalonji) besides being an immunity booster, antioxidant and an anti-inflammatory agent, also has potential anti-viral activity.



## *Nigella Sativa*- The seed of blessing

*Nigella sativa* has been used traditionally in different parts of the world to treat various human conditions pertaining to respiratory system, digestive system, liver, and immune function. It has been found to be medicinally effective against cancer, diabetes, inflammatory conditions, and various infections caused by bacteria, fungi, parasites, and viruses.

The seeds of *N. sativa* have been reported to contain several bioactive compounds the most important one among these being thymoquinone which possesses antihistaminic, antioxidative and immunomodulator properties that can help treat a wide range of health conditions.

## Adjuvant therapy for Covid-19

The causative agent of the ongoing global pandemic – the SARS-CoV-2, is a corona virus which is an enveloped RNA virus, characterised by spikes on its surface. Recent findings indicate that the subunits of the spike glycoprotein of SARS-CoV-2 utilise human angiotensin-converting enzyme 2 (ACE2) as the receptor to infect human cells. New molecular docking studies have proposed that thymoquinone because of its high affinity to ACE2 receptor interferes with the binding of the viral protein to its molecular target, preventing the entry of SARS-CoV-2 and its replication inside the host cell. Given the potential benefits and established safety profile of thymoquinone, it can be used as an adjuvant therapy in Covid patients.<sup>1</sup>



## Immunological effects

Optimum performance of the immune system requires functioning of both the innate immunity and adaptive immunity. Innate immunity is non-specific that acts against all microbes the same way and does not involve specific recognition of a pathogen. It consists of non-specific cells, (such as natural killer cells). Adaptive immunity on the other hand is based on specific responses to specific antigens and is comprised of antibody-mediated immunity where B cells secrete antigen specific antibodies, and cell-mediated which has helper T (CD4) cells and cytolytic T (CD8) cells. Helper T cells are responsible for devising an immune response, whereas cytolytic T cells are the killer cells that travel to sites of infection and lyse infected cells. Together, they are critical for eliminating infections and are critical in antiviral immunity.

A study found that the majority of subjects treated with *N. sativa* oil for 4 weeks showed a 55% increase in CD4 to CD8 T cells ratio, and a 30% increase in natural killer cell function, suggesting that *N. sativa* can enhance immune responses in human if administered on an ongoing basis.<sup>2</sup>

## Market opportunity

As interest in proactive healthcare is growing among consumers, immune health will continue to remain in focus even in the post-COVID era with a strong inclination toward herbal and botanical ingredients. Of the many natural immunity boosting ingredients, blackseed or black cumin (*Nigella sativa*) has generated immense attention among scientists. The black seed oil market size that was over USD 15 million in 2018 is expected to reach at 25 million USD by 2026, growing at a CAGR of 8.5%.<sup>3</sup> 2020 witnessed an estimated 37% increase from 2019 in the launch of dietary supplements containing blackseed.<sup>2</sup>



# The goodness of purity

The entire blackseed oil product range formulated by Vantage Nutrition uses blackseed oil extracted from naturally sourced blackseed. This blackseed oil containing 5% thymoquinone is filled into two-piece hard capsules. Thymoquinone in liquid form offers greater bioavailability than it would have in the form of powder. Besides blackseed oil, our products also contain other known immunity boosting ingredients which together provide the goodness of necessary nutrients essential for speedy recovery from Covid in a single power packed capsule, enhancing patient convenience.

## Our unique power-packed blackseed product range

1. Black Seed Oil with Vitamin E
2. Black Seed Oil with Vitamins & Minerals
3. Black Seed Oil with Ashwagandha Extract
4. Black Seed Oil with Curcumin

### What's in it for end consumers?

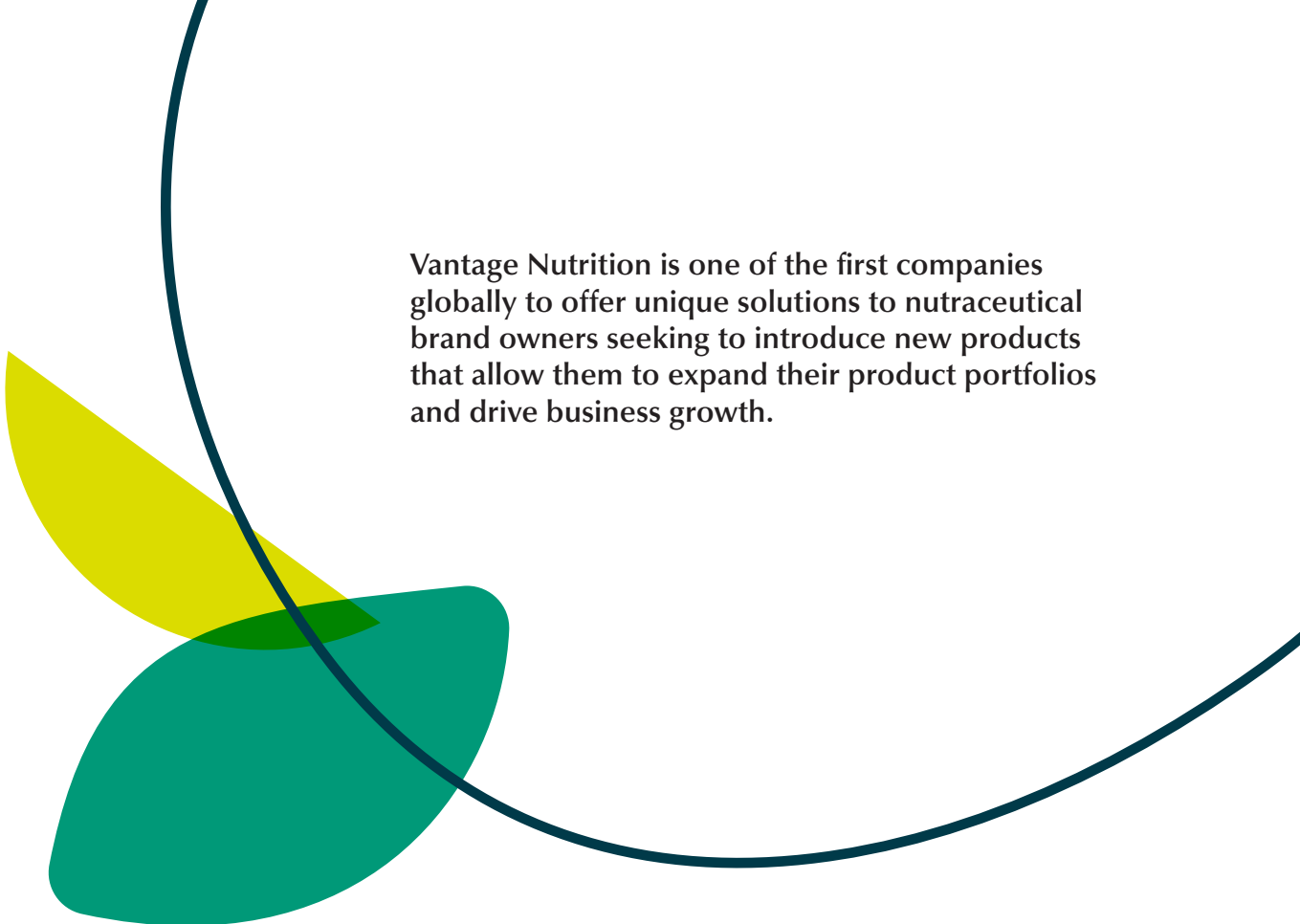
1. Goodness of natural ingredients delivered in a highly bioavailable form
2. Adjuvant therapy for Covid patients
3. Immunity booster for healthy individuals

### What's in it for Nutraceutical Brands?

1. Developed product, ready for commercial manufacturing
2. Complete support and necessary assistance for commercialisation
3. Get to market fast

#### References

1. Xu, H., Liu, B., Xiao, Z. et al. Computational and Experimental Studies Reveal That Thymoquinone Blocks the Entry of Coronaviruses Into In Vitro Cells. *Infect Dis Ther* 10, 483–494 (2021). <https://doi.org/10.1007/s40121-021-00400-2>
2. Salem M. L. (2005). Immunomodulatory and therapeutic properties of the *Nigella sativa* L. seed. *International Immunopharmacology*, 5(13-14), 1749–1770. <https://doi.org/10.1016/j.intimp.2005.06.008>
3. Global Market Insights; Black Seed Oil Market Share 2019-2025 Industry Trends Growth Report
4. Innova Database: Innova Consumer Survey 2020. Average of UK, US, Spain, France, Brazil, India, Germany, Mexico, China and Indonesia



Vantage Nutrition is one of the first companies globally to offer unique solutions to nutraceutical brand owners seeking to introduce new products that allow them to expand their product portfolios and drive business growth.

## The Vantage advantage



### End-to-end offerings

Right from product development to commercialization, we do it all. Our core offerings include product designing, feasibility assessment, formulation and development, stability studies, regulatory assistance, and commercial-scale manufacturing.



### Liquid-filled hard capsules

These capsules are a perfect solution for encapsulating a natural active ingredient or a combination of such ingredients that often pose significant formulation challenges in a single dosage form. A vegetarian variant of this capsule is also available.



### Speed-to-market

Our state-of-the-art manufacturing facility, well-equipped for liquid filling of hard capsules, coupled with our expertise in this area make it possible to scale-up quickly, which helps us to respond to rising market demand suitably and translates to shorter time-to-market.



### Concept to counter service

Our concept-to-counter service is a one-of-a-kind offering that meticulously focuses on consumer needs. We partner with our customers to help them create products that are consistent with the latest trends and offer strong differentiation for their brands.

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