



11/11/2022

NSX ANNOUNCEMENT

INDEPENDENT VALUATION REPORT

Manufacturing company Veratin Limited (**NSX: VTN**) ("**VTN**") is pleased to provide the following Independent Valuation Report to the market.

The valuation report was commissioned to determine the Company's value ahead of its planned ASX listing in 2023.

In summary, the Independent Valuation Report states:

1. The Discounted Cash Flow analysis estimates a current valuation of Veratin Limited between \$7.3 million and \$24.0 million, with a preferred valuation of \$14.6 million.
2. An analysis of publicly listed start-up companies operating in similar fields, although limited in number, suggest a valuation of up to \$100 million may be achievable once sustainable income is achieved.

Interested parties should read the Independent Valuation Report in its entirety prior to making an investment.

ENDS

Issued by: Veratin Limited

Authorised by: The board of Veratin Limited

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10 November 2022

The Board of Directors
Veratin Limited
Unit 1, 14A Hines Street
O'Connor WA 6163

Dear Directors

RE: Valuation of Veratin Limited

We have pleasure in presenting a current valuation of Veratin Limited. The Company is a recently listed public company developing products based on its discovery of a novel process for extracting soluble keratin from low grade sheep wool. Current products include fertilisers and soil enhancers which are largely sold into the domestic market through retailers.

This report was prepared at the Company's request for Company use and the reader should refer to the Disclaimer section when considering matters presented in the report.

In preparing the valuation, Acuity Technology Management Pty Ltd considered a number of valuation methods available for valuing intellectual property and early-stage companies, and determined that a Discounted Cash Flow (**DCF**) approach was the only reasonable method available in the current exercise. Veratin has limited trading history and is by no means selling product at a rate reflective of its potential. The Company is also actively undertaking research and development for new, higher value products, that have as yet to be brought to market.

The DCF analysis estimates a current valuation Veratin of between \$7.3 million and \$24.0 million, with a preferred valuation of \$14.6 million. The broad range reflects an inability to estimate future cash flows with any certainty. Risks to realising projected revenues include market penetration or consumer acceptance of the Company's fertiliser products, completion of new product development, and the granting of patents.

An analysis of publicly listed start-up companies operating in similar fields, although limited in number, suggest a valuation of up to \$100 million may be achievable once sustainable income is achieved.

This report has been prepared by Acuity Technology Management Pty Ltd (**Acuity**). Acuity specialises in the appraisal and valuation of IP and knowledge-based intangible assets. The company has experience in valuing technologies, projects and businesses in a diversity of industries including medical and life sciences. Details of our qualifications and experience are summarised at the end of this valuation opinion. Further details can be found at www.acuitytechnology.com.au.

Yours sincerely

A handwritten signature in blue ink, appearing to be "Dr David Randerson", with a long horizontal line extending to the right.

Dr David Randerson
Managing Director

INDEPENDENT VALUATION OF VERATIN LIMITED

November 2022

1. Background

1.1 Veratin and its Technology

Veratin Limited (**Veratin** or the **Company**) was founded in 2016 by Dr Ramiz Boulos to exploit discoveries made in relation to a cost effective way of extracting soluble keratin from wool. The Company listed on the National Stock Exchange (**NSX**) in February 2022 (NSX:VTN) issuing shares through a Prospectus that raised \$632,854 after fees and valuing the Company at \$9.5 million. The Company's first product, Verigrow®, generated \$64,062 in the 12 months to 30 June 2022, a 56% increase on the previous 12 months, and the Company recorded a loss of \$402,081 with ongoing research and development (**R&D**) contributing significantly.

Veratin is involved in the R&D of products derived from waste wool, including the development and sales of its initial product, Verigrow®, a wool-based liquid fertiliser and soil improver for domestic and commercial use. Veratin has developed and is developing products that are relevant to several unrelated industries including agriculture (Verigrow®), cosmetics, nutraceuticals and biodegradable materials. Consumer awareness and the push for sustainable, biodegradable and green raw materials has been a driving force for companies to find alternative and more benign approaches to developing their products.

Products and proposed products fall into the categories of agriculture, cosmetics, nutraceuticals and foods, and materials, as follows:

- Agriculture products (commercialised):
 - Verigrow® concentrate;
 - Verigrow® foliar spray; and
 - Verigrow® potting mix.
- Cosmetics (R&D completed and looking to manufacture):
 - Shampoos; and
 - Conditioners.
- Nutraceuticals and foods:
 - Alcoholic and non-alcoholic fermented products (proof-of-concept completed);
 - Amino acids powders (no R&D conducted to date).
- Materials (R&D almost complete – product launch in 2023):
 - Biopolymers – first products being plant pots.

The Company's strategy over coming years is to increase its marketing and promotional activities to grow its revenues from sales of Verigrow® while at the same time develop new products in the Verigrow® range, including potting mixes and foliar sprays for domestic use, while continuing the development of its other products.

Veratin owns its production equipment which has a current capacity of 500,000 litres a year. This is considered adequate for the next three to five years and could result in revenues of between \$2.4 million and \$7.5 million depending on whether sold as general consumer products, such as domestic sprays and concentrates, and potting mixes; or bulk material to farmers.

The Company claims a “simple, efficient and cost-effective” technology to rapidly convert solid wool, generally lower-grade wools, into liquid keratin, which can then be further processed to produce fertilisers and value-added products. In addition to those products listed above, Veratin’s keratin may be developed for use in other fields including:

1. **liquid keratin** used as a raw material in the cosmetic industry in formulations such as hair products, facial creams and sunscreens;
2. **keratin-based gels and composite material** as drug carriers used in the pharmaceutical industry;
3. **amino acids and peptides** extracted from the liquid keratin used in the nutraceutical, chemical and pharmaceutical industries;
4. **chicken feed** arising from any residue sold to the poultry industry; and
5. **biodegradable polymers** to be used as plastic replacement in several products.

None of these products are finalised or sold commercially.

All manufacturing for the Verigrow® range of products is in-house. For the potting mix product, the Company purchases a premium mix from a third party and adds several components designed to enhance the quality of the mix, including but not limited to Verigrow®. The biodegradable plant pots will be manufacture in house and moulding machinery has been acquired. The manufacturing of the shampoos and conditioners will be outsourced however Veratin will supply the base Keratin ingredient.

1.2 Commercial Rational

Keratin is a protein used in many cosmetic and pharmaceutical products with benefits for human hair, nails and skin. Wool is a source of pure keratin constituting up to 93% by weight of fibre. Australia produces 25% of the world’s sheep wool which makes it the most prominent wool producing country with China second at 18%. Not all of the wool harvested is of suitable quality for clothing and textiles, and finds itself in secondary uses such as mulch and fertiliser (it contains around 9% nitrogen (**N**), 1% phosphate (**P**) and 2% potash as well as minerals such as calcium and sodium), insulation products and in packaging.

Wool keratin has a distinct three-dimensional structure and contains approximately 95% protein, 0.5% minerals and 5% lipids or fats. As such it finds utility in products as diverse as agriculture,^{1, 2} human health and nutritional care³, medical biomaterials^{4, 5} and biodegradable plastics^{6, 7, 8, 9}.

The increased demand for keratin is of great benefit to the wool industry. Even wool that is coarse and doesn’t have high worth can still be developed into a high-end product as the quality of the fibre itself is no issue for Veratin and its keratin technology.

¹ Berecht MD, *et al.* Keratin Hydrolysates extracted from sheep wool with potential use as organic fertilizer. *Leather Footware J* 20, 2020 (doi.org/10.24264/lfj.20.3.5).

² Wainwright M, *et al.* Fertilizer potential of some commercially available forms of keratin and microbial biomass. *Enzyme Microb Tech* 7(3):108, 1985.

³ Dias GJ, *et al.* Wool keratin – A novel dietary protein source: Nutritional value and toxicological assessment. *Food Chem* 383:132436, 2022 (doi.org/10.1016/j.foodchem.2022.132436).

⁴ Feroz S, *et al.* Keratin - Based materials for biomedical application. *Bioactive Mater* 5:496,2020 (doi.org/10.1016/j.bioactmat.2020.04.007).

⁵ Singh S. Keratin-based materials in Biomedical Engineering. *IOP Conference Series: Materials Science and Engineering* 116, 2021 (doi:10.1088/1757-899X/1116/1/012024).

⁶ Donato RK & Mija A. Keratin Associations with Synthetic, Biosynthetic and natural polymers: An Extensive Review. *Polymers* 12(32), 2020 (dx.doi.org/10.3390/polym12010032).

⁷ Goyal S, *et al.* Extraction of keratin from wool and its use as biopolymer in film formation and in electrospinning for composite material processing. *J Engin Fibers Fabr* 17:1, 2022 (doi: 10.1177/15589250221090499).

⁸ Kumawat TK, *et al.* Keratin Waste: The Biodegradable Polymers (dx.doi.org/10.5772/intechopen.79502).

⁹ Saha S, *et al.* Keratin as a Biopolymer. *Springer Series on Polymer and Composite Materials* 2019 (doi.org/10.1007/978-3-030-02901-2_6).

1.3 Intellectual Property

The key technology developed by Veratin is its novel process for producing a liquid keratin from sheep's wool. Waste wool is often converted to different hydrolysates as part of the keratin extraction process, generally prepared using environmentally detrimental physico-chemical treatments. Existing processes have disadvantages, such as high costs, harsh extraction conditions, low extraction yield, or the use of non-environmentally friendly reagents. These processes may also result in destruction of some amino acids limiting end uses. In addition, the current methods mostly involve heating methods, which is energy wasting. The Veratin process, and the products that the Company can produce following extraction of keratin, is considered more cost-effective and environmentally benign. The Company has applied for patents covering its inventions as outlined below.

Patent Application **PCT/AU2017/000165**, *Organic fertiliser and soil improver comprising keratin*, filed 1 September 2016, claims the use of its keratin extract as a fertiliser and soil improver and the process for producing the keratin. Veratin's intellectual property (IP) strategy is to pursue this patent in the largest agriculture and wool-exporting markets. The company has filed National Phase applications in several jurisdictions: Australia, Brazil, Canada, China, Europe, Japan, Indonesia, New Zealand and the US, and a patent has been granted in Japan and South Africa.

In preparing this report, Acuity undertook searches for patents that claimed the use of keratin in fertiliser, and keratin production and, while a small number were identified, we found none that would constitute prior art, potentially limiting claims, for the Veratin patent.

Subsequent to the formation of Veratin, the following patents have been filed:

- Biopolymer – Australian provisional patent (No: 2021902220) subsequently filed as a PCT application, *Bioplastics and method of making thereof*, with a filing date of 19 July 2022 patent owned by Boulos & Cooper Labs (a related entity) but exclusively licensed to Veratin with royalties payable.¹⁰ The application claims a process for producing a keratin-based substrate and for crosslinking this with a secondary biopolymer substrate to produce a bioplastic. This novel biopolymer will find applications in a number of consumer products as a plastic replacement material. Veratin is pursuing the development of biodegradable plant pots at the first instance.
- Fermented products – an Australian provisional patent (No: 20229022686), *Alcoholic and non-alcoholic fermented products and methods of preparation*, filed 16 September 2022; and

Veratin also holds trademarks for “Verigrow” and “Baa baa”. The Australian trademark for Verigrow® is registered (Trademark number 1793929) and the US and China trademarks are pending. As the company grows, Veratin will file registrations for its trademarks in other territories.

Veratin also owns a worldwide exclusive license for exploiting IP related to a biodegradable polymer. This novel biopolymer will find applications in a number of consumer products as a plastic replacement material. Veratin is pursuing the development of biodegradable plant pots in the first instance.

1.4 Products and Technologies in Development

1.4.1 Fertilisers

Wool is a sustainable and all-encompassing source of amino acids. Amino acids are the building blocks of life and help plants combat stress, increase root mass, activate natural defence mechanisms. Amino acids enhance photosynthesis by increasing the chlorophyll concentration, promote nutrient absorption, and stimulate essential metabolic activities.

¹⁰ IP Licence Agreement between Boulos & Cooper Labs Pty Limited and Veratin Pty Limited signed on 10 August 2021.

Normally plants utilise nutrients, elements and consume energy, derived from photosynthesis, to manufacture amino acids. Recent studies have proven that amino acids can be taken up by plants directly. By providing plants with amino acids that they can be absorbed directly, more energy can be directed by the plant to maintain optimal health and growth. The presence of amino acids therefore negates the need for high levels of nitrogen, phosphorous and potassium-based fertilisers.

The Company recently completed a field study in which it was found that, “17 units of N applied as Verigrow® 35% N in-furrow at seeding was equal to or better than 59 units of N (17 units of N at seeding followed by 42 units of N 43 days after seeding) in the form of either Flexi-N (Wesfarmers) or Urea on the growth, yield and grain quality of Scepter wheat.” Based on these trials, the Company plans to release a broad acre product at 17.5% N that will be applied neat, ie. without dilution, and is cost competitive to current nitrogen fertilisers.

1.4.2 Personal Care

Formulations for a natural keratin shampoo and natural keratin hair conditioner have been prepared for the company by a consultant specialist. Keratin has a natural cohesion to hair, skin and nails providing strengthening, shine and conditioning and it is logical that Veratin seeks to develop products, or provide raw material, to such high value products.

1.4.3 Biodegradable Polymers

Biodegradable polymers are ones which breakdown into natural by-products with the help of naturally occurring microbes such as algae, bacteria and fungi.

They have a range of applications including controlled drug and gene delivery, tissue engineering, medical implants and devices, surgical sutures and wound dressings.

2. Markets and Competition

There are a number of competitors in Veratin’s current and proposed key market areas many with novel products in various stages of development:

1. **Fertiliser Market** - in Australia, there are over 300 fertiliser manufacturers. Some competitors to Veratin in the fertiliser market include Incitec Pivot Ltd, Nufarm Ltd, Orica Ltd, Wesfarmers Ltd and Yara International ASA.
2. **Liquid Keratin** - there are many companies actively producing keratin and selling into the markets of interest to Veratin. These include Active Concepts LLC, Akola Chemicals Ltd, Greentech Ltd, Hefei TNJ Chemical Industry Co Ltd, Keroplast Technologies LLC, Keratin Biosciences Inc, Keratin Express Inc, KeraNetics Inc, MakingCosmetics Inc, Parchem Fine & Specialty Chemicals Inc, BASF and Unilever Plc. One of the market leaders is US-based Keraplast Technologies which provides keratin from natural sources, including wool. New Zealand company, Keratec merged with Keraplast in 2009 providing access to new technology and an extensive portfolio of patents.
3. **Other competition and markets** - as the Company continues to grow its products utilising its intellectual property, other markets, such as the skin care, functional foods and beverages, biopolymers and feedstock markets will open up for the Company. However, as at the date of this valuation, whilst the Company has developed an understanding of the size and opportunities within those markets, it is not currently competing nor does it have products available for these markets.

Market research presented by Veratin has given the global cosmetic industry a value of more than US\$250 billion (A\$348 billion) with a forecast annual growth rate of 3.4%.¹¹ Shampoos, conditioners, soaps and sunscreens form a large portion of this market.

The global food supplement industry has been valued in excess of US\$200 billion (A\$278 billion) with protein and peptide supplements making up a significant part of this, while the biodegradable polymer market is estimated at over US\$3.5 billion (A\$4.8 billion) and growing at a compound annual growth rate of 15%.

According to Brand Essence Research the organic fertiliser market was valued at US\$6.77 billion in 2018 and expected to reach US\$15.5 billion by 2025 with compound annual growth rate (**CAGR**) of 12.65% over the forecast period.¹² Verigrow® is not “organic” and sells into the larger fertiliser market.

The global biodegradable plastic market is expected to grow from US\$4.6 billion in 2019 to US\$9 billion by 2025, according to one analyst.¹³ Another reports that the biodegradable plastics market is projected to grow from US\$3.02 billion in 2018 to US\$6.12 billion by 2023, at a CAGR of 15.1%¹⁴, while yet another predicts the market to reach US\$36.82 billion by 2028 with a CAGR of 25.1%¹⁵.

These are large markets with considerable competition and ongoing innovation.

3. Strengths and Risks

The primary strengths of Veratin as we see them are:

- The novelty of the process for producing keratin and the quality of product it produces;
- The patent application, although not yet granted in key jurisdictions, provides protection for both the process and the use of soluble keratin in fertilisers and soil improvers. More recent patent applications aim to cover additional, higher value products;
- The versatility of the keratin extract, suitable for products ranging from garden and agricultural growth promoters to personal care and nutraceuticals, offers a broad range of sales opportunities for Veratin;
- Research by the Company, and others, has demonstrated the utility and potential superiority of keratin-based fertilisers in plant growth;
- Large volumes of low-grade wool are available in Australia;
- There is an existing market for keratin-based hair shampoos and conditions;
- The additional inventions, including biopolymers, are entering rapidly growing and environmentally driven markets; and
- The creativity and inventiveness of the Company’s founders and collaborators.

¹¹ Veratin Prospectus for Listing on the National Stock ERxchange. Steinepreis Paganini. December 2021.

¹² Top 10 Organic Fertilizer Companies 2021. Brand Essence Research Company, 27 Nov 2020 (<https://brandessenceresearch.com/blog/top-10-organic-fertilizer-companies-2021-bmrc>).

¹³ Gupta R. Bioplastic Companies Target a Huge Market With Solid Growth Outlook. Market Realist, 15 Jan 2021 (<https://marketrealist.com/p/biodegradable-plastic-companies>).

¹⁴ Barrett A. A Look At Leading Bioplastics Companies. Bioplastics News 21 October 2019 (<https://bioplasticsnews.com/2019/10/21/leading-bioplastics-companies>).

¹⁵ Biodegradable Plastics Market to Reach Over 36825.7 Million by 2028 at 25.1% CAGR Growth. Vantage Market Research. 21 January 2022.

The risks include:

- The patents have not been granted (except for PCTAU2017/000165 in South Africa and Japan) and there is no guarantee that they will be granted. As discussed, there is a history of the use of keratin and sheep's wool use in fertilisers and biopolymers. If these facts are considered by the patent examiners as prior art by patent examiners, then claims may be restricted. We also note that others have reported methods for dissolving wool keratin, although we can find no patent-negating prior art in this respect. If the Company is forced into litigation against infringement, such action can be costly and it is possible that infringer can better afford to defend its position. Similarly, should Veratin be required to defend its patents, this also can be costly;
- Alternative keratin extraction processes may be developed and these may prove faster, more efficient and more cost effective;
- Reliance on key personnel (the Company depends on Dr Ramiz Boulos as the founder and brains behind the Company. The Company also depends on Dr Peter Simpson for the research and development of other products). Loss of these individuals could impact on current operations, growth and development opportunities;
- Dependency on wool suppliers (the Company currently has one material contract in place to purchase waste- wool from a farm in Western Australia). The term of the contract is for 1-year but, we have been advised, can be renewed on an ongoing basis in writing by both parties;
- There may be a requirement for additional capital. Funds raised through the recent Prospectus may not see the Company through to profitability and may minimise new product programs;
- There exists significant competition in all consumer marketing categories.

4. Valuation Methodologies

Veratin is an early-stage company with a short trading history, small sales revenue that is presently restricted to fertiliser sales, limited market exposure, and no revenues currently coming from recent patent applications and delivery of value-added products. Traditional methods for valuing companies: net assets, orderly realisation of assets, and capitalisation of future maintainable earnings; are not applicable. There have been no offers to acquire the Company or its technology and there has been limited trading in its shares since listing on the NSX meaning that use of methods relying on these metrics are not available. The Company's valuation, therefore, relies on its future potential along with the patents and in-house knowhow and expertise that underpin this future.

For the purpose of our valuation opinion, current market value is defined as the amount at which the IP assets could be expected to change hands in a hypothetical transaction between a knowledgeable willing, but not anxious, buyer and a knowledgeable willing, but not anxious, seller acting at arm's length.

Techniques used for valuing intangible assets, including IP and in-process R&D (**IPR&D**), and pre-profitability companies generally fall into three main categories:

1. Cost Based;
2. Market Based; and
3. Revenue Based.

4.1 Cost Based Methods

There are several cost approach valuation methods, the most common being the reproduction cost and the replacement cost methods. Often these may be based on the historical costs incurred by the original inventor or developer. Generally, however, patents provide a market monopoly for the invention and it would be very difficult for a third party to replicate the technology with equivalent utility, specificity and activity without infringing those patents. They therefore demand a premium over the actual cost involved in making the invention. Cost Based methods are, in our opinion, not applicable to the valuation of a company with technology underpinned by patents.

4.2 Market Based Methods

Market Based methods estimate an entity's fair market value by considering the exchange price for transactions in its shares or the fair market value of comparable companies. Market Based methods include:

- Capitalisation of maintainable earnings;
- Analysis of an entity's recent share trading history;
- Industry specific methods; and
- Comparable companies or transactions.

The capitalisation of maintainable earnings method estimates value based on an entity's future sustainable earnings and an appropriate earnings multiple. An earnings multiple may derive from market transactions involving comparable companies. The capitalisation of maintainable earnings method is appropriate only where the entity's earnings are relatively stable and predictable. Veratin does not meet these criteria.

Techniques based on analysis of transactions between companies, equity valuations or capitalisations of comparable companies have considerable merit. There may also be capital raisings, both private placements and initial public offerings, which may be used as analogies. Comparison is possible only where a transaction relates to an identifiable unit of IP or platform technology that is reasonably analogous or, in the case of the value placed on a company, where that company is virtually single purpose and technically equivalent to the subject company or IP. Such criteria are often difficult to meet and comparable analyses are usually used only to support the values derived with other methodologies or to provide a "ball park" estimate.

Our searches, not surprisingly, failed to identify many companies active in similar fields or with similar technology that have been sold or licensed technology and where the information relating to such transaction is publicly available. The Market Based method provided limited guidance.

4.3 Revenue Based Methods

A technique suitable for valuing a business or a project, such as IPR&D, with strong and relatively predictable future prospects is based on a DCF analysis. To assume any level of credibility, the DCF must incorporate reasonable cash flow predictions, with justifiable assumptions regarding sales estimates, expenses and revenue timings. These are then valued to present day using a discount rate, often following probability adjustment, that recognises the time value of money and risks involved in achieving the forecast cash flows.

Variations on the Revenue Based method are the **relief-from-royalties** approach, where the potential savings resulting from not having to licence the IP from another party and pay royalties for use of that patent, and the **incremental cash flow** approach, where estimates are made of revenues and cash flows in the absence of the patent (or other form of IP) and the increase arising from ownership of the patent are compared.

In the circumstance where the projections are not founded on firm contracts or extrapolations of historical performance, and even where they are, it is appropriate to include adjustments, covering development and achieving market penetration, as well as generalised industry or market risks. While often difficult to quantify, it is accepted practice to include a premium to the discount rate to compensate for risk.

The usual discount rate is a company's Weighted Average Cost of Capital (**WACC**) which reduces to the Capital Assets Pricing Model (**CAPM**) in the absence of debt. The CAPM for Veratin may be determined using the following formula:

$$\text{CAPM} = R_f + \beta \times (R_m - R_f)$$

We estimate that a CAPM of around 10% to 12% is applicable to Veratin to which we have applied a 2% specific company risk premium.

5. Cash Flow Modelling Assumptions & Valuation Opinion

Cash flows have been developed for three potential product ranges, without being specific as to which products are involved, with Base Case, Best Case and Worst Case scenarios. The revenues in our models are driven by the production capacity of the Veratin facility which is assumed to be at full capacity in five years (Base Case). Further capacity expansion is made in 2028 (with expenditure in 2027). The Base Case assumes a mix of bulk and retail (or domestic/household) fertiliser during 2023 with a high value product, shampoo and conditioners for example, introduced in 2025. In 2027, revenues reach \$3.2 million with 30% coming from these higher value products.

The Best Case scenario assumes that, while revenues from all product ranges grow at a greater rate than in the Base Case, high value products assume a greater fraction of sales.

The Worst Case model considers delayed growth with current production capacity not fully utilised for a decade and with an emphasis on the low value fertiliser range.

The horizon for the cash flows is ten years with a terminal value. The valuation date is 1 January 2023.

In the absence of a detailed examination of the size of markets for individual product and products in development, competition from comparable products and estimates of potential market share, all too vague at this stage of Veratin's development, we have assumed fixed peak sales revenues that may be realised from current and expanded production capacity. We are confident that the markets are large, albeit competitive, and that there are no limitations on sales growth or raw material supply. We assume that production costs are equivalent or lower, and more environmentally friendly and energy efficient relative to competitive processes and products. Ultimately, market penetration will come down product quality and marketing effort, neither of which we are able to assess at this stage.

To estimate cost of goods sold (**COGS**) and sales, general and administrative (**SG&A**) expenses, we examined the financial statements of a number of local and internationally operating fertiliser and nutraceutical companies and used averages, being 30% for COGS and 30% for SG&A of revenues for the Base Case (being a hybrid of the two industries). In the Worst Case the COGS is higher as a percentage of revenues and SG&A lower, more aligned with fertiliser manufacturers and in the Best Case, these metrics move towards those of the nutraceutical/cosmetics industries where production costs are low relative to selling price and a greater marketing investment is required. We also maintained an ongoing R&D expenditure of 5% of revenues, declining in later years, with a lower rate in the Worst Case. These are applied once the Company reaches profitability with the assumption that, once achieved, Veratin will operate with similar financial metrics to mature companies in the same industries.

We used an Australian company tax rate of 25% (for companies with turnover less than \$50 million) and carried forward losses for each patent individually. We have included R&D tax rebates at 43.5% of R&D spending.

Capital expenditure once current production capacity is exceeded is based on an estimate provided by the Company. The models also include allowance for working capital.

A terminal value following 2032 has been applied using a growth to perpetuity model with an assumed annual growth of 5% in Base and Best Cases and 3% in the Worst Case.

We discounted resultant cash flows at 14% which includes a premium above the WACC due to lack of assurance that cash flows are achievable.

The key assumptions in the models are presented in the following table:

Table 1: Modelling Assumptions and Patent Valuation

	Worst Case	Base Case	Best Case
Revenues 2023 (\$'thou)	130	200	200
Revenues 2027 (\$'thou)	2,500	3,600	7,500
Revenues 2032 (\$'thou)	5,763	9,659	18,144
Current Production Capacity Achieved	2027	2026	2028
2032 Revenue Breakdown:			
Bulk Fertiliser	43%	34%	25%
Premium Fertiliser	24%	21%	33%
Premium Products	34%	45%	42%
COGS % of Revenues	35%	30%	25%
SG&A % of Revenues	25%	30%	35%
R&D % of Revenues	4%	5%	5%
Valuation	\$7.3 mil	\$13.0 mil	\$24.0 mil

On the basis of 40% likelihood Base Case, 30% Worst Case and 30% Best Case we provide an opinion that the current Company valuation is \$14.6 million, with a range of between \$7.3 million and \$21.0 million.

6. Comparables Analysis

Acuity conducted searches for early stage, publicly traded companies by which we could ascertain a reasonable comparator for Veratin. Our criteria included: operating in a similar arena with novel technology, loss making with small revenue stream. We sought to obtain the current enterprise value (EV) of these entities. While not many companies were available, the following have merit:

Table 2: Comparable Publicly Traded Companies

Company	Ticker	Field	Revenues	EV	EV/Rev.	Beta
MustGrow	CN:MGRO	Fertilisers	C\$12,869	C\$131 mil	7,240	2.00
Biologics Corp	AS:AVTX	Biopolymers	€10,917	€75.2 mil	6.75	1.03
Avantium NV	V:GDNP	Biopolymers	C\$61,132	C\$90.3 mil	0.98	1.99
good natured Products						

Although limited to three start-ups, the analysis suggest that Veratin may be worth up to \$100 million (range is \$85.2 million to \$116 million, mean \$101 million).

The above table also lists EV/Revenues and beta value as reported by Yahoo Finance¹⁶ as measures often incorporated into a DCF analysis.

We also searched for transactions to acquire or license similar early stage, patented technology. These searches identified no useful comparators.

7. Summary and Conclusions

The analysis estimates a current valuation for Veratin of between \$7.4 million and \$24.0 million. Risks to realising estimated revenues include the completion of product development, results of further field trials and the granting of patents. The cash flows have been discounted at 14%, which includes a modest premium to account for these and commercial risk.

Our three scenario analyses are based on the Company's projected manufacturing output, which is assumed to reach capacity in three to four years' time. This also assumes that the Company can sell all that it produces with no constraints on market size and raw material supply.

The weaknesses with our analyses are:

- Inability to predict future sales with any certainty due to lack of track record, unknown quality of products relative to those already on the market and details of costs of production for the proposed product ranges; and
- Limited past sales on which to base projections. Sales will ultimately depend on quality and extent of marketing effort by the Company; and
- Lack of comparable companies (early stage) with valuations or transactions in which similar technology has been sold or licensed.

A more rigorous analysis, including assessing the level and quality of current and future competition, may significantly alter these estimates. Such an analysis may be based on the individual sale of analogous products with an estimate of market share based on competition. More detail is required on marketing strategy and preferred product mix, and production costs for such of individual products for such an analysis.

¹⁶ Yahoo Finance USA (<https://finance.yahoo.com> accessed 20 October 2022).

Disclaimer

This valuation report has been prepared solely for Veratin to assist with decisions in relation to the further development and management of the Company and its research programs. As such, neither Acuity nor any employee undertakes responsibility in any way whatsoever to any person or organisation (other than Veratin) in respect of information set out in this report, including any errors or omissions here-in, arising through negligence or otherwise, however caused. Acuity does not hold an Australia Financial Services Licence and this report is not an invitation to invest in the Company and makes no recommendations in respect of investment in Veratin.

The valuations make certain assumptions in relation to the revenue prospects. In preparing this report we have relied on information provided by Veratin, complemented by our own experience in valuing early stage companies. We can provide no assurance that material provided by the Company was complete and accurate although we have no reason to suspect that this was not the case. We have exercised all due care in verifying the information provided and found no reason to doubt the reliability of the information. We also relied on published and Company-confidential technical reports as the main sources of past research but we were not able to review raw data or methods of analysis therein or confirm that these reports contained all relevant findings.

Acuity does not guarantee that the outcomes described in this report will actually occur because of possible changes in the markets and Veratin's actions, which are beyond our ability to forecast. A draft of this report was supplied to Veratin to confirm factual accuracy and some changes were made to reflect their comments.

Acuity has acted independently in preparing this report and neither its Director nor staff have any pecuniary or other interest in Veratin, its related entities or associates that could reasonably be regarded as affecting its ability to give an unbiased opinion. Acuity has received professional fees for the preparation of this report.

The cash flow model used in the valuation makes the assumption that Veratin has, or will have, sufficient funds to support further development and marketing of products. Without adequate funds, the value of the IP may not be realised. Additionally, delays in research and/or in securing raw materials and marketing collaborations could impact severely on the valuation.

Experience and Qualifications

Acuity provides management consulting to technology-based companies. The company is skilled in the development of business plans and the technical, commercial and financial analyses of engineering and science-based projects. An area of special interest is the provision of advice to investors and financial institutions on the funding of high technology R&D and the exploitation of outcomes.

The current valuation was undertaken by Acuity's Managing Director, David Randerson. Dr Randerson specializes in the valuation of intangible assets, and business entities whose main assets are intangibles, with particular expertise in IP and IPR&D. Valuations have been performed for purposes of licensing, capital raising and investment, sale, depreciation and amortization, impairment, purchase price allocation, consolidation, mergers, acquisitions, stock options and goodwill.

Dr Randerson has experience with valuing pharmaceuticals, stem cells, medical devices, diagnostics, agriculture, biochemical and cell culture technologies and environmental products. In the fields of physical and applied sciences, he has valued software, internet, electronics, telecommunications, mining and petrochemical projects, process engineering, production engineering and automotive technologies. Research-in-process is of particular interest to Dr Randerson.

Dr Randerson has a Bachelor of Chemical Engineering (Monash University), Master of Science in Applied Science (UNSW) and a Doctorate of Philosophy in Biomedical Engineering (UNSW). He is a Fellow of the Australian Institute of Company Directors and a member of the Institution of Chemical Engineers. He has worked in academia at the University of Munich and University of Queensland, and in Industry with Rio Tinto Australia, Union Carbide Australia and Johnson & Johnson (Philadelphia, USA). He was founder and managing director of one of Australia's first publicly listed biotechnology companies, specializing in the production of therapeutic monoclonal antibodies and recombinant proteins.

An understanding of physical and life sciences, research and development, project management, probability and statistics, discounted cash flow methodologies, real options analysis, life cycle forecasting, engineering depreciation and functional obsolescence analysis, are amongst the important tools in which Dr Randerson has competence.

As principal of Acuity for 30 years, Dr Randerson has undertaken in excess of 300 detailed valuations in biomedical sciences and 120 in applied sciences.