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PREV-AM

PREV-AM® is also marketed as PREV-AM PLUS and PREVAM® and is registered in France, Belgium, Germany, Italy, Spain and Austria. Check your local country label for organic approval/ crop/ pest combinations.

MULTI-PURPOSE

CROSS-PROTECTION

**RESISTANCE
BREAKER**

INSECTICIDE

FUNGICIDE

ACARICIDE

**BENEFICIAL
FRIENDLY**



- grape • tomato • strawberry
- lettuce • cauliflower • pepper
- citrus • melon • carrot • eggplant
- cucumber • parsley • and more...



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**MAKES EVERY DROP
OF WATER COUNT**



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ORO AGRI: After the Acquisition Opens A New Development Journey



Carol Pullen
General Manager of Oro Agri Europe

Since its inception in 2002, Oro Agri has developed, manufactured and distributed a range of agrochemical and biological products for global distribution. In this year, Oro Agri was acquired by Omnia Holdings Limited, entering a new development stage. Carol Pullen, General Manager of Oro Agri Europe, recently received AgroPages' interview to give us a comprehensive introduction to Oro Agri's past development success and future plans.

Could you introduce Oro Agri to us, including main business, products line and major markets?

Oro Agri is an international company involved in the research, development and production of a unique range of patented agricultural biological ("AgriBio") solutions. The key formulation ranges include biopesticides, adjuvants, and soil conditioners for professional agriculture applications, including row crops, stone fruits, pasture and other crop types, as well as smaller lawn and garden applications in the amateur category.

AgriBio are eco-friendly alternatives for crop protection, crop enhancement and crop nutrition without the use of hard chemicals and comprises of biopesticides, biostimulants and fertilizers. The use of AgriBio formulations can replace or increase the viability of conventional chemistry based pesticides, without developing any resistance from insects and diseases. The Oro Agri range of formulations provides solutions either to address crop inhibiting diseases and factors that stunt growth and reduce crop yield, or to increase nutrient and water uptake efficiency through high performance environmentally friendly formulations.

In 2002 PREV-AM® was registered as the first product of Oro Agri and sold as a bio-pesticide in the agriculture market. Over the past two decades Oro Agri has expanded its global footprint across six continents and continued to develop a unique range of innovative products that include brands such as OROWET®, TransPhloem®, TRANSFORMER®, WETCIT®, OROCIT®, VINTRE®

and OROBOOST®.

Oro Agri operates in four major regions in the world, namely Brazil, Europe, South Africa and the USA. Oro Agri owns and operates three in-house production facilities, and four research and development facilities across the globe.

Oro Agri has a well-developed global sales and distribution network in more than 80 countries with an established network of distributors, agents and directly employed staff to market and sell its formulations.

Oro Agri Group of companies was recently acquired by Omnia Holdings, an international player in the AgriBio and water soluble nutrient markets, based in Johannesburg South Africa and listed on the Johannesburg Stock Exchange.

Since 1953, Omnia has had its roots in the fertilizer and the agriculture industry and has built up an in-depth understanding, not only of its core markets in South Africa, but also in mining, manufacturing and agriculture in Africa. Today, Omnia has operations in 18 countries in Africa, and six countries outside of Africa.

Omnia's Agriculture Division is a market leader in plant nutrition products and services in South Africa and southern Africa, and it works closely with customers to improve the performance of their crops. Its product range is manufactured in South Africa and Australia and is currently sold into twenty-eight countries globally.

We know Oro Agri is the sole notifier and premier source of the active substance Orange Oil. As a natural biological pesticide, which crops it is mainly used for, which diseases are controlled, and what advantages are there?

Orange Oil, within the reference formulation PREV-AM in Europe, provides a unique botanical active substance with a very broad spectrum of activity to professional and non-professional users. Acting by contact, it combines fungicide, insecticide and miticide modes of action all in one.

The main market for PREV-AM has been grape, peach, apple, citrus, kiwi, fruiting vegetables, carrot, onion, leek, cabbages, berries and ornamentals and ORO AGRI is actively working on label extensions. Globally, the PREV-AM label is far more extensive with strawberries being one of the top crops in USA.

Unlike most of the conventional chemistries, Orange Oil is MRL exempted and can therefore be used throughout the growing season and the short pre-harvest interval allows applications very close to harvest to secure the quality of the production. The PREV-AM formulation is also compatible with Integrated Pest Management (IPM) practices and is eligible for organic farming in many countries.

PREV-AM is particularly efficient to control external pathogens such as powdery mildews and soft bodied insects like whiteflies, aphids, thrips or scales and especially has very good miticide/ acaricide properties.

Since pests are able to develop resistance to pesticides that target single biochemical pathways, these pesticides must be managed carefully to prevent the development of resistance. As PREV-AM has a physical mode of action, it offers an alternative method of control to that of conventional pesticides. Therefore, PREV-AM is ideal for inclusion in resistance management strategies on a rotational basis as a "resistance breaker" to reduce the cycle of resistance build-up to conventional pesticides.

PREV-AM has a beneficial friendly profile and has been tested on many beneficial organisms showing very low mortality ratings of 1 (harmless) and 2 (slightly harmful) on the IOBC (International Organization of Bio Control) scale. In every test performed to date, favourable predator prey ratios have been restored using PREV-AM thus making it an ideal tool for IPM programs.

PREV-AM has efficacy within 24-48 hours and this fast-acting mode of action is often used in combination with conventional chemistries to increase efficacy by providing immediate curative action when used with fungicides, or immediately reducing pest population in order to reduce economic damage caused by pest while the chemistries may take effect a week or two later.

In recent years, Oro Agri is actively exploring the international market and has made remarkable achievements. Can you share how to choose the right markets and how to develop these markets? Is setting up a branch office or a distribution partner in the local area required? How do you choose a good distribution partner?

This truly has been one of ORO AGRI's strong points and currently we have distribution into more than 80 countries. We choose our markets based on where we have people to service those countries efficiently. We will often hire someone to be in charge of several countries, then as a specific country's business grows, we will add a second person to reduce travels. Today ORO AGRI has more than 160 people globally and we pride ourselves on our excellent talent we have been able to recruit. A company is only as good as the people working for it, and in ORO we believe our people "bleed orange" as they are committed to the core. Having a passion for what you do is also important, and we believe in working as independent teams. We are only as good as our weakest link, and therefore ensure we give our people the tools to succeed.

Internally, our 4 main regions all operate independently, with different languages, cultures, agricultural practices, products and registrations. Management style and teamwork varies substantially from region to region and even within regions, and as a result, General Managers for each region has to operate profitable independent units within the framework of the group. General Managers and their Regional Managers manage their operations within the framework of local laws and cultural methodology. Specialists in certain fields become Team Advisors within the group in addition to heading up such positions in their own regions.

Regarding finding distributors, often distributors will approach us by e-mail, but by far the most successful has been meeting with distributors at tradeshows, and visiting their facilities to see if they are value added service providers and if they have the team, drive and passion to provide the necessary focus.

ORO AGRI has learned that areas where we do not provide direct sales support, the value-added service needed to succeed is often lost. Many biopesticides today, when used correctly, can provide better results than many of the conventional chemistries. New modes of action are often more complex and application techniques and monitoring more important. We pride ourselves on an excellent support team of agronomic engineers globally, who assists with marketing trials, training, supporting documentation in the various countries.

Registrations has also been a major challenge as we often relied on distribution to assist with registrations. Today we have boosted our registration team significantly, as well as our legal team who will help in setting up local entities to hold our own registrations where possible. We have learned many valuable

<p>BIOFERTILIZERS: LIQUID / GRANULE/ POWDER:</p> <p>Nitrogen fixing: Soil & foliar application</p> <ul style="list-style-type: none"> •Azotobacter chroococcum •Azospirillum brasilense <p>Phosphate solubilizing: Soil application</p> <ul style="list-style-type: none"> •Bacillus polymyxa <p>Potassium Mobilizing : Soil application</p> <ul style="list-style-type: none"> •Bacillus licheniformis <p>Zinc solubilizing : Soil application</p> <ul style="list-style-type: none"> •Acinetobacter calcoaceticus <p>also available in N-P-K consortia</p>	<p>BIOPESTICIDES:</p> <ul style="list-style-type: none"> •Bacillus subtilis KTSB 1015* 1.5% A.S. •Bacillus thuringiensis var. kurstaki 0.5% WP •Pseudomonas flourescens* 0.5% WP •Beauveria bassiana* 1.15% WP •Metarrhizium anisopliae 1.15% WP •Verticillium lecanii* 1.15% WP •Trichoderma viride* 1.00% WP •Trichoderma harzianum 1.00% WP •Paecilomyces lilacinus 1.15% WP <p>Registration dossier available</p>	<p>SOIL HEALTH MANAGEMENT:</p> <p>Speedkompost (Decomposing culture) For efficient on farm recycling of organic wastes - aerobically</p> <p>BIOSTIMULANT:</p> <ul style="list-style-type: none"> •Gibberellic acid (Microbial fermentation extract) <p>SEED TREATMENT:</p> <p>Liquid/ powder*</p> <ul style="list-style-type: none"> • Bacillus sp. • Bradyrhizobium japonicum* also available in P-K consortia
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lessons along the way.

ORO AGRI has plans on expanding our reach even further, in both distribution and registrations, and with ORO AGRI becoming part of the Omnia group we feel confident that we will be able to provide even better service than before using the latest agricultural technology which is a big focus within Omnia and forms part of their vision to provide trusted performance using innovative solutions for a better world.

How is the Oro Agri's performance in the past few years? What do you think is the main driving force behind the growth of the company? And could you share what are the goals of the Oro Agri in the next five years?

ORO AGRI was started by a very energetic Mr. Erroll Pullen during his retirement in 2008 and the company was sold in 2018, 10 years later, with a global annual turnover of close to 50 Million Dollars. For 2012-2016 our five year compounded annual growth rate (CAGR) for the group was 17% before being acquired by Omnia Group for 100 million US Dollars.

Mr. Pullen is known for his motto "GO-GO-GO" and he has been the driving force behind the company and strives to double turnover by 2020. With current registrations and new developments, we feel this goal quite achievable.

ORO AGRI, now part of the Omnia Group, will be focusing on providing solutions incorporating a myriad of technologies including soil and biostimulant formulations, biopesticides, microbial solutions to mention but a few. We have several products in the pipeline awaiting patents which we believe could be even bigger than PREV-AM once commercialized. These products fall into the low-risk category and will provide solutions to not just the organic grower, but all growers facing serious issues like Huanglongbing (HLB).

Can you share your R&D team's experience in biopesticide development? What do you think are the main challenges in the field of biopesticide development?

ORO AGRI Europe has placed a major emphasis on R & D and spends approximately 13% of our turnover on R & D.

Our R&D procedure follows a biorational process of scouting / discovery and screening over lead development, formulation and scale-up, to application development, manufacturing and commercial introduction.

As discussed earlier, the key to our success is in our people. We have assembled a world class research and development team within our 4 main regions. ORO AGRI assisted some of our team members to further their careers and also sponsored external

students to get their masters and PhD with many of the students becoming full time employees after graduating.

Very often it is the team who will come up with an idea for a new product and/or new use and then we will discuss within the R & D team to prioritize which projects to pursue. In each region the R & D is different, as each has its own set of challenges. In Europe we are very driven by registrations and have to be more selective in the projects we support as 1 crop/pest combination on a label could require a minimum of 36 trials over 2 years. At approximately €4,000 per trial you can see it quickly adds up. This does not even take the active registration into consideration, which often runs in the millions of Euros.

Because of the growing demand for bio solutions, ORO AGRI Europe has focused on finding soft chemistry solutions, and a large focus will be on new Omnia AgriBio solutions which we hope to launch in Europe.

In our in-house development trials we not only observe and note the obvious, but also note the "not so obvious" which has prompted many new registrations for existing solutions. If you're running a trial through a CRO who is paid to monitor whitefly on zucchini, generally, unless instructed, will not take note that there is also a drastic reduction in powdery mildew. Our in house technicians observe and monitor all parameters and this is then further explored. This is how we keep coming up with new pest/ crop combinations.

Each region has its own traditional agronomic practice and our products have to fit into the local program or the product will not be successful. Our team of agronomists in the various regions assist with developing the product for their specific region. Once we feel comfortable with the program, we will contract with CRO's to do registration studies. This is of course a very pricey endeavour, but a necessary one for registration purposes, and admittedly has also helped the bio industry in general differentiate from "snake-oil" companies showing before and after pics with no concrete independent data verifying the results. When studies are done in house by small organizations showing magnificent results, often the results have been "too good to be true" so having independent CRO's confirm the results has helped increase biopesticide visibility and more credibility.

We are also exploring new and improved versions of our current formulations, as well as new formulations which will provide some residual efficacy when combined with alternate Mode of Action bio products providing some residual efficacy.

Another focus going forward will be on expanding our product offerings into other market segments like biocides, post-harvest applications, home and garden etc.