

# Applied Technology

for

## Today's Agriculture

and

## Tomorrow's Environment

Responding to the needs of today's growers, **Northwest Agricultural Products** has incorporated the latest in agrotechnology, specifically plant health technologies, to meet the needs of today's and tomorrow's agriculture. Contact your local dealer for information about NAP Products:

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Northwest Agricultural Products, (NAP) was founded in 1989 to operate as a formulation facility for various domestic and European chemical manufacturers.

Business quickly expanded and with it came customer requests for various technical materials for both the industrial and agricultural industries. This catapulted NAP into making new formulations, manufacturing traditional materials, and more recently, developing new Bio Science Technologies.

### ***FOCUS ON TEAMWORK: PARTNERS IN MUTUAL TRUST***

At NAP we use state-of-the-art processing plants to manufacture our products. Though the technology is important, our greatest investment and asset is our people, the NAP team. The education, experience, knowledge and conscientiousness of our employees are unparalleled in our industry. Our team commitment and effort have earned the respect of our customers and other professionals in the chemical industry. We have excellent industry credibility with a reputation for production of innovative and high quality products. The success achieved thus far by NAP has resulted from matching our expertise and our customers' needs.

Over eight years ago we started to develop and manufacture some biochemical intermediates oriented to the needs of our customers who are representative of the diversity in the agricultural industry. Thanks to our proficiency and expertise

in the production of humic acids we were capable of supplying bio-technical intermediates exactly matching our customers' needs for their further formulations or processing.

This is still the case today. We produce fine technical chemical intermediates and finished products for companies that manufacture and formulate agrochemicals, as well as products for bio-remediation, hydro-seeding and various industrial uses. Our processes include fermentation and catalyzed exothermic reactions. We also have a variety of multipurpose shear mixing equipment supported by a comprehensive technical infrastructure that allows NAP to carry out numerous reactions that enable us to produce a broad spectrum of products.

### ***NEW DIRECTION IN BIO-TECHNICAL AGRO-PRODUCTS***

NAP's interest in this area is two-fold: to contribute to the increased understanding of the significance that organic compounds contribute in soil fertility and plant health and for the environmental concerns of the effects of certain inorganic chemistries.

NAP's expertise includes fermentative production of microbial bio-control agents and microbial metabolites. NAP is working closely with USDA/ARS, university researchers, and USEPA to commercialize several naturally occurring bacteria and fungus. These microbial products are used in programs to control various weeds and plant pathogens.

### ***HOW IT ALL STARTED:***

Nearly a decade ago we began manufacturing Humic Acids. From this experience and knowledge base we began to extend our products into the agrochemical field. Today, NAP is recognized as a specialist in this sector of agribusiness. Our experience in carboxyl / phenolic chemistry has extended our product offerings to over one hundred bio-technical intermediates. Many of these are in stock, while others can rapidly be produced on order.

Our diversity of expertise and production capabilities enables NAP to go from new concept to lab-scale to pilot plant scale production of products readily. We can then evaluate these new bio-compounds on plants grown in nearby greenhouse facilities. The equipment and technologies available on-site permit us to quickly respond to our customer's needs and ideas. Much of the specialized equipment for such processes as compound separation and formulation NAP has developed and fabricated on site.

We take great pride in the safety awareness NAP has instigated in our operations for production of bio-technical intermediates and chelates. This safety consciousness applies both to worker safety and toward concerns for environmental safety. Our production methods and the design of the production facility at NAP are continually subject to improvements that minimize environmental risks and emissions. As NAP continues to upgrade our production facilities to offer our customers state of the art technology, we strive to maintain compliance with regulatory agencies.

## **MULTIPURPOSE PLANT FOR FLEXIBILITY AND VERSATILITY**

The size of NAP is maintained in order to maximize efficiency of management and flexibility for customer response. This explains our ability to quickly respond to specific requests by our customers. The versatility of our production facility enables NAP to not only produce the volumes associated with large commercial orders but also to assist in problem solving for our customers when they have particular requests. NAP is equipped with modern multipurpose chemical reactors with heat exchange and shearing capability. The mixers can be used to carry out a variety of different reactions. This equipment provides NAP with the ability to manufacture products according to the specifications of other company's formulations. In fact, a considerable segment of our business consists of custom formulations for our customers. We private label such products for our customers. Products manufactured on this basis are subject to strictly enforced secrecy agreements. Under no circumstances is the confidentiality of this information ever breached.

NAP also has a fermentation capability that enables us to develop and perform sophisticated syntheses and manufacturing processes. There exists a combination of science and artistry that goes into successful fermentation of a variety of products and NAP has assembled a team of experts in this field.

## **RESEARCH AND DEVELOPMENT - A KEY ACTIVITY**

A considerable proportion of NAP's revenue is reinvested in research and development. Currently on NAP's staff there is one resident Ph.D., with another as a consultant, and two staff with Masters Degrees. Resident expertise includes a plant physiologist, plant pathologist, organic chemist, molecular biologists, electrical engineer and fermentation engineer. NAP also has access to more than 500 qualified specialists ranging from engineers to Ph.D.'s at Battelle Memorial Institute which is a large government sub-contractor funded by the local economic development grants from the United States Department of Energy (Hanford Operations). This business alliance also provides NAP staff with access to cutting edge technology and resources. Examples include an irradiation facility, laboratory facilities and a comprehensive library for literature search and new technology research. The research staff at NAP actively collaborates with key staff at Battelle in review of new technology with evaluations of commercial production and marketing feasibility studies. Jointly, we write grants and implement projects with grant monies. Test campaigns are undertaken whereby production methods are optimized and performance criteria scrutinized until a product satisfactorily indicates commercial potential. Currently, many products that NAP offers for sale have been researched through this joint collaborative program.

Substances developed under the terms of a custom synthesis and/or formulation contract or in close cooperation with the customer remain strictly confidential. In the world of fine agrochemicals, quality assurance is of paramount importance.

## **OUR CUSTOMERS - OUR PARTNERS**

NAP is a wholesale distributor. We do not sell retail. We supply companies in many sectors of the agrochemical industry. Many of these products are intermediates that are further processed and formulated by our customers at their own facility. In this way, competition with any of our customers is excluded. This is a beneficial basis for close cooperation with our partners right from the start. Some customers purchase finished products labeled by NAP that are registered by the various governmental agencies.

We highly value the confidential relationships with our customers all over the world. Our policy of custom production with guaranteed confidentiality is never compromised. This custom manufacturing segment of our overall business, accounts for a considerable portion of our revenues and is very important to us.

## **THE NAP TEAM**

NAP has a work force selected carefully to blend expertise, abilities and personalities that work together as a team. This image of teamwork is the image of NAP. This team-like work environment extends beyond the NAP campus to encompass close collaborations with scientists from the nearby Battelle facility. The cooperative work alliance also extends to our customers. Collectively, the atmosphere of our workplace imparts stability and integrity that we all take great pride in maintaining. We strive to expand our experience and knowledge base with internal and external training opportunities. These serve to improve our technical expertise along with worker and environmental safety practices. Customer satisfaction is our ultimate goal and a part of the assignment for every employee at NAP

Northwest Agricultural Products, Inc.  
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