

THE ROOTS OF IPNI

A perspective on the International Plant Nutrition Institute
and Its Forerunner Organizations



IPNI
INTERNATIONAL
PLANT NUTRITION
INSTITUTE



IPNI

INTERNATIONAL
PLANT NUTRITION
INSTITUTE

Better Crops, Better Environment... through Science

As world population and demand for food, feed, fiber, and fuel continue to increase, there is also a growing need for knowledge and information based on sound science. That's where we come in. The International Plant Nutrition Institute (IPNI) is a not-for-profit organization dedicated to responsible management of plant nutrition—including N, P, K, secondary nutrients, and micronutrients—for the benefit of the human family.

IPNI was established at the beginning of 2007 and now has programs in Africa, Australia/New Zealand, Brazil, China, Eastern Europe/Central Asia and Middle East, Latin America-Southern Cone, Mexico and Central America, Northern Latin America, North America (Canada and U.S.A.), South Asia, and Southeast Asia.

Our portal is also open with a website where you can find out more about IPNI: >www.ipni.net<. Feel welcome to call on us.

International Plant Nutrition Institute – Headquarters

3500 Parkway Lane, Suite 550
Norcross, GA 30092-2844
Phone: 770-447-0335 • Fax: 770-448-0439
Web: www.ipni.net • E-mail: info@ipni.net

Members of IPNI include:

Agrium Inc. • Arab Potash Company • Belarusian Potash Company •
CF Industries Holdings, Inc. • Great Salt Lake Minerals • OCP S.A. • Incitec Pivot
• Intrepid Potash, Inc. • K+S KALI GmbH • The Mosaic Company • PotashCorp •
Simplot • Sinofert Holdings Limited • SQM • Uralkali • Vale Fertilizantes S.A.

Affiliate Members:

Arab Fertilizer Association (AFA) • Associação Nacional para Difusão de Adubos (ANDAs)
• Canadian Fertilizer Institute (CFI) • Fertiliser Association of India • International
Fertilizer Industry Association (IFA) • International Potash Institute (IPI) •
The Fertilizer Institute (TFI)

Ref. May 2011



IPNI...HOW DID WE GET HERE?

At the dawning of the year 2007, the International Plant Nutrition Institute (IPNI) was officially launched. This unique new organization has headquarters based in Norcross, Georgia, USA, but its programs are global in scope. The organization began with a clear mission: “To develop and promote scientific information about the responsible management of plant nutrition for the benefit of the human family.”

The member companies and industry leaders whose vision led to the creation of IPNI did so with tremendous insight.

IPNI has important work to do as a global organization and it began with a highly-qualified scientific staff in place in several key regions. However, from the beginning, IPNI moved quickly as developments in new programs were set in motion. With the commitment of 17 member companies, the new Institute was geared to achieve positive results. At the end of the year in 2006, the Potash & Phosphate Institute (PPI) had only five members and the scope of its programs were limited by several factors. Even so, PPI and the Potash & Phosphate Institute of Canada (PPIC) had established a reputation of integrity and achievement that was invaluable in the founding and evolution of IPNI.

The first president of IPNI, Dr. Terry Roberts, summed up the direction of this new organization in the first issue of *Better Crops with Plant Food* published by IPNI in early 2007: “IPNI will be science-based....We will seek new information through scientific discovery and evaluation, and apply this knowledge in ways that are protective of the environment, preservative of natural resources, economically sustainable, and socially acceptable. Another goal is to educate industry, governments, and the public about the most current information on the safe and appropriate use of plant nutrients in food, fiber, feed, and fuel production.”

As a not-for-profit, science-based research and education entity, there was an immediate need for clear focus on the most important issues and prioritizing of the many tasks at hand. A new program oriented to the environmental aspects of nitrogen was a top priority. More attention was also directed to other nutrients in addition to potash and phosphate. Early in its existence, IPNI developed a strategic plan and established a thematic matrix of work groups to involve staff across regional boundaries and to interact with other entities on key crop and program topics.

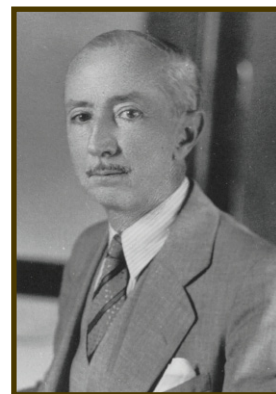
Following is a brief historical perspective on IPNI since its beginning in 2007 and an overview of the organizations that existed before. The legacy built by those organizations could be considered the roots of this flourishing Institute.



BEGINNING IN 1935...THE EARLY DAYS...THE GOOD OLD DAYS

The original charter of the American Potash Institute limited its activities to the United States, Canada, and Cuba. European members left the Institute at the beginning of World War II and at that time there were no Canadian producers. After potash production in Canada became a reality, the name of the Institute was changed to the Potash Institute of North America in 1970. Later, the name was shortened to the Potash Institute. In 1977, it became the Potash & Phosphate Institute.

Take a journey back in time to July of 1935. The place was Washington, DC, in a room about three blocks from the White House. Dr. J.W. Turrentine, a well known and respected chemist, spoke to a group of eight men ... the first Board of Directors of the American Potash Institute (API). He was the first president of API. They were top officials of the major U.S. potash companies of that day: American Potash and Chemical Corporation, Searles Lake, California; Potash Company of America, Carlsbad, New Mexico; and United States Potash Company (later called U.S. Borax), Carlsbad, New Mexico. The European potash producers, represented by N.V. Potash Export MY, Inc. of Amsterdam, Holland, also joined in the meeting and became a charter member of the new organization.



Dr. Turrentine, President from 1935 - 1948

Dr. Turrentine's message was brief and to the point, and has been repeated many times through the years. He is quoted as saying: "Gentlemen, potash use depends on the recognition of its function as a plant food, which is agronomic, and the ability of the farmer to buy his requirement, which is economic. In fact, the agricultural usage of potash must be increased only on a basis that is (agronomically) sound and profitable to the farmer."

During the 1920s, N.V. Potash Export MY, Inc. had created an Agricultural and Scientific Bureau with headquarters in New York and offices throughout the U.S. *Better Crops with Plant Food* was published by that group beginning in 1927, before the establishment of API. The July-August issue of 1935 was the first published by the new Institute.

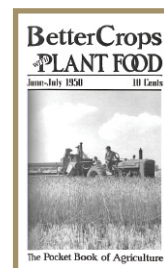
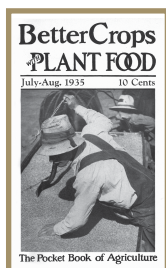


Here is another statement from the early days, which further sets the tone for the new organization: "Cooperation in research is essential to find the need—cooperation in special activities to prove the need—and cooperation in educational efforts to teach the need."

When the American Potash Institute was organized, total consumption in the U.S.A. was less than 400,000 tons K_2O annually. (Note: may add or delete something here...depending on space) DA

WORLD POPULATION: From about 2 billion in 1935, population increased to about 2.55 billion in 1950.

AROUND THE GLOBE: In the early to mid 1930s, the Great Depression gripped the United States and many other countries and regions around the world. The severe consequences of the Dust Bowl days and rampant erosion in the United States led to establishment of the Soil Conservation Service, now called the Natural Resources Conservation Service, in the U.S. Department of Agriculture. This agency has had a long and productive association with the Institute, continuing today.



POPULATION GROWTH AND A GROWING FERTILIZER INDUSTRY

During the 1950s and early 1960s, world population was booming and there was demand for increased crop production. Potash production increased substantially, and mining operations in Canada began coming on-stream about 1960. There was a clear need to increase international activity.



Dr. Mann, President from 1948-1963

A new organization was created in 1960, called The Foundation for International Potash Research. The Foundation cooperated with the International Potash Institute (IPI) to establish programs in regions including Australia, Brazil, Central and Northern Latin America, Southeast Asia, Japan, and South Korea.

In 1948, Dr. Harvey B. Mann became President and led the Institute until 1963. He had served as Southern Manager of the Institute since 1936.

The research and education efforts in the early years were aimed at getting the first pound or kilogram of potash fertilizer used in regions where it was unknown. Higher yielding varieties of some crops were becoming available and they were often more responsive to the use of inputs, especially nitrogen (N). The increased use of N, and greater removal of soil nutrients by higher crop harvests, tended to accentuate deficiencies of phosphate, potash, and other nutrients. The Institute has a long history of encouraging the establishment of long-term experiments to examine the most appropriate nutrient balance for sustained production.

In North America, themes such as fall fertilization and crop quality received considerable emphasis. Applying potash and phosphate in the fall in areas such as the Midwest made good sense to avoid the transportation delays and complications with muddy fields in the spring seasons.

Other focus topics that were popular in Institute programs during the 1950s included diagnostic techniques related to soil testing and plant analysis, interactions of crop production inputs, economics of fertilizer use, and cooperation with other organizations working in North America and various parts of the world.

Mr. J.D. Romaine was part of the original API staff in 1935 as Chief Agronomist and retired in 1966 as Vice President and Secretary.

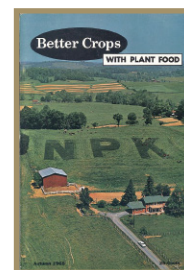
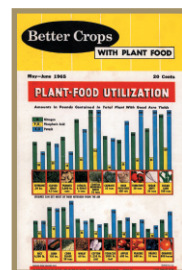
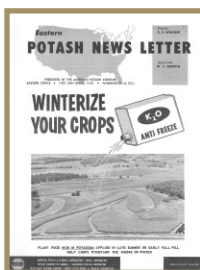
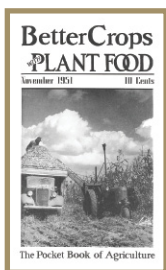


J.D. Romaine

Among many other achievements, he was widely known for preparing a wall chart illustrating Plant Food Utilization (PFU) of many different crops. First introduced in 1940, it was later translated to several languages and adapted for use in offices, classrooms, and dealer stores all over the world. The chart was reproduced as a pamphlet and literally hundreds of thousands were distributed.

WORLD POPULATION: Population growth rate peaked in the early 1960s; world population reached 3.3 billion by 1965.

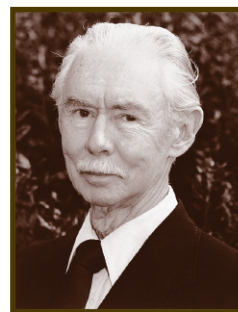
AROUND THE GLOBE: The 1950s and early 1960s brought considerable political and social change in many parts of the world. Dwight D. Eisenhower was President of the United States through most of the 1950s; John F. Kennedy was elected in 1960 and assassinated in 1963. In 1957, Russia launched Sputnik 1, the first Earth-orbiting satellite—the beginning of the space age. The European Economic Community (Common Market) began in 1958.



PROGRESS CONTINUES...ALONG WITH SOME DIFFICULT TIMES

In 1963, Dr. J. Fielding Reed became the third president of API. He was a pioneer in soil testing related to soil fertility and held degrees in biochemistry.

In 1966, International Minerals & Chemical Corporation became a member of the American Potash Institute. Since there was no need to continue two organizations with two budgets and two boards of directors, The Foundation for International Potash Research was dissolved in 1967 and all domestic and international programs were directed by API and later API in coordination with the Potash Institute of Canada.



Dr. J. Fielding Reed,
President from 1963-1975

In 1968, Mr. Richard Roberts was hired as corporate secretary and assistant to the president. He retired in 1999 as Vice President-Administration, after serving three presidents of the Institute.



Mr. Richard Roberts served in key administrative responsibilities for three Presidents of the Institute.

During the late 1960s, the potash industry experienced some difficult economic times. This led to closing of offices that had been operating in Australia, Taiwan, the Philippines, and Brazil. In addition to staff reductions, other cost-cutting measures were required. The Institute owned the building where it was housed in Washington, DC. But, because the Institute was not involved in lobbying or influencing legislation, there was no real justification for being located in downtown Washington. A business school wanted the building for expansion, and the Institute Board of Directors agreed to sell. A committee of the Board considered other locations, including Chicago and St. Louis. Atlanta was chosen partly because it was already a major transportation center.

The Potash Institute of Canada was created in 1970 with Dr. K.M. Pretty as President.



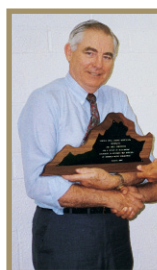
Dr. Werner L. Nelson had a long and productive career with the Institute, from 1954 until he retired in 1985. He served as Senior Vice President and was Interim President for 3 months in 1975 after Dr. Reed retired and before Dr. Wagner was named as the new President.

Later, the name was changed to the Potash & Phosphate Institute of Canada when phosphate producers joined.

In the late 1960s and early 1970s, the environmental movement came to the forefront. A unique publication called "Facts from Our Environment" was prepared by Institute staff to address many concerns about fertilizer in a readable, straight-forward question and answer format. Several updates and revisions of the publication followed.

WORLD POPULATION: While world population growth rate was over 2% annually during part of the 1960s, it gradually decreased later. During this time, population in many countries was becoming much more urban.

AROUND THE GLOBE: The "space race" continued throughout the 1960s, with astronauts from the U.S.A. reaching the surface of the moon first in 1969. In the Middle East, political unrest continued.



THE WORLD BECOMES SMALLER AND THE ENVIRONMENT GAINS ATTENTION

In 1975, Dr. R.E. Wagner was named President of the Potash Institute. Under his administration, maximum yield research (MYR) and maximum economic yield (MEY) became key program themes.

In 1977, the Institute expanded its scope as phosphate producers joined and the name was changed to the Potash & Phosphate Institute. Existing members of the Institute at that time included Amax, International Minerals & Chemical, Cominco American, Duval, Great Salt Lake Minerals & Chemicals, Mississippi Chemical, Potash Company of America, Potash Company of Canada, Potash Corporation of Saskatchewan, Texasgulf, and U.S. Borax. The new members (with phosphate production) included IMC's phosphate operations, Agrico, Mobil, Occidental, Royster, Smith-Douglas, Borden, and Texasgulf Phosphates.

In 1980, the Foundation for Agronomic Research (FAR) was established to permit and encourage other industries and groups who were not producers of potash and phosphate to add their support to funding of research projects.

In 1985, the Potash & Phosphate Institute sponsored the international "Potassium in Agriculture" Symposium in cooperation with the American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, National Fertilizer Development Center (TVA), International Fertilizer Development Center (IFDC), and FAR. The event took place in Atlanta, Georgia. The proceedings of the Symposium were published as the book *Potassium in Agriculture*.

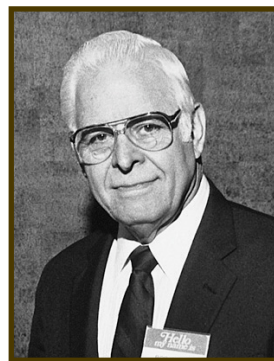


Dr. David W. Dibb, President from 1988-2005

The year 1985 was also the 50th anniversary of the Institute.

In the fall of 1985, Herman Warsaw of Saybrook, Illinois, harvested a record non-irrigated corn yield of 370 bu/A. He was a longtime friend of the Institute and inspired many researchers and farmers.

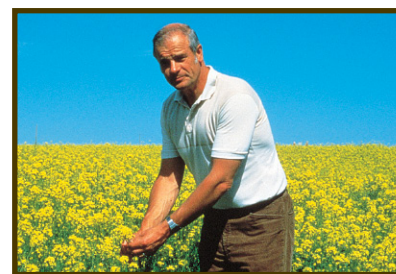
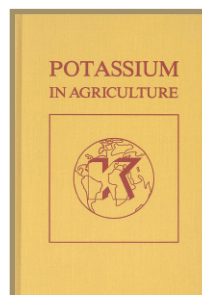
Dr. David W. Dibb officially became President of PPI on January 1, 1989 and served through 2005. He joined the staff in 1975 and served in a wide range of responsibilities during his career.



Dr. R.E. Wagner, President from 1975-1988



Dr. Bob Darst joined the Institute staff in 1973 as a regional director, was elected Executive Vice President in 1992, and retired in 2001. He had key responsibilities for many programs and travelled extensively. Among his many enduring achievements was origination of the *Soil Fertility Manual*, first released in 1978 and later updated, adapted, and translated to multiple languages.



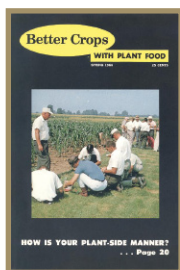
Dr. J.D. Beaton started with the Institute in 1978 and retired in 1994 as Vice President, PPI International Programs and President, PPIC.



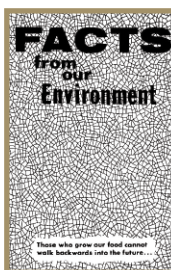
Dr. Mark Stauffer joined the PPI/PPIC staff in 1988 and retired in 2004 as Senior Vice President, PPI International Programs, and PPIC President.

WORLD POPULATION: Increasing at a slower rate during the 1970s, world population reached about 4.5 billion in 1980.

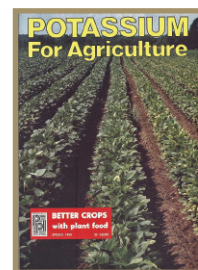
AROUND THE GLOBE: Dr. Norman Borlaug received the Nobel Peace Prize in 1970, in recognition of his contributions to the Green Revolution. His plant breeding programs based primarily in Mexico resulted in new varieties of wheat, rice, and other crops that were quickly adapted in India and many other countries. In 1972, U.S. President Richard Nixon made an unprecedented 8-day visit to the People's Republic of China and met with Chairman Mao.



Dr. K.M. Pretty



Dr. N.R. Usherwood



CROP PRODUCTION CAPABILITY INCREASES DESPITE CHALLENGES

Success Stories Grow – Balanced Fertilization in China

The Institute and its staff have been involved in many positive stories. For example, China has evolved from a country dependent on food aid to become one of the world's largest food aid donors. The tremendous success in increasing harvests of grain and other crops has been attributed in part to improved and more balanced fertilization practices.



Dr. Adrian Johnston joined the Institute staff in 1999 as a regional director and later became Vice President, Asia and Africa Group.



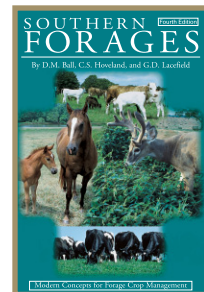
During the early 1980s, U.S. agricultural exports declined, partly due to a grain embargo against certain countries. The USDA implemented a payment-in-kind (PIK) program, resulting in a large reduction in crop acreage. Low prices and a sluggish farm economy in many parts of the world also had a negative impact on the fertilizer industry.



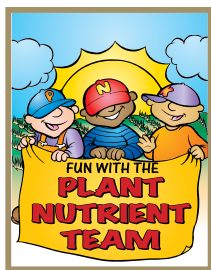
Dr. Paul E. Fixen joined the staff of the Institute in 1989 as a Regional Director and was named Senior Vice President and Director of Research.

Through it all, the role of science as a basis for production agriculture and crop nutrition continued as a key to Institute programs.

In 1991, the Institute published the book titled *Southern Forages*, which was authored by three well-known university forage specialists.



In the early 1990s, biotechnology advances, information technology, and precision agriculture capabilities each came into play in production agriculture. Conservation tillage and crop residue management also gained prominence and affected crop fertilization practices.



During the early 1990s, PPI leadership saw a growing need for educational material geared to young students, to improve understanding of production agriculture and the positive role of fertilizers.



Mr. Steve Couch, left, began working for the Institute in the early 1990s while still in college. He became Vice President, Administration, at IPNI in 2008.

Beginning with the activity booklet titled "Fun with the Plant Nutrient Team", many additional educational materials have followed.



Dr. Svetlana Ivanova joined the staff of IPNI in 2008 and became Vice President, Eastern Europe/Central Asia and Middle East Group.

The first Information Agriculture (InfoAg) Conference took place in 1995 in Champaign-Urbana, Illinois. This event is widely credited with advancing the concepts of precision agriculture in the U.S. and around the world.

WORLD POPULATION: From 4.5 billion in 1980, world population topped 5 billion in 1987.

AROUND THE GLOBE: The U.S. space shuttle Columbia made its first flight in 1981. Also in 1981, the IBM PC was introduced. A tidal wave hit southern Bangladesh and killed 10,000 people in 1985. Bill Gates became the computer industry's first billionaire in 1987. The Exxon Valdez spilled about 11 million gallons of oil in Alaska in 1989.



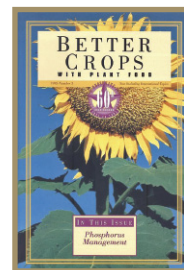
Dr. Tu, Dr. Chen, Dr. Portch



Dr. Yamada, Dr. Borlaug, Dr. Roberts



Dr. Johnston, Dr. Espinosa, Dr. Jin



NEW TECHNOLOGY AND GREATER EFFICIENCY COME TO AGRICULTURE



Dr. Terry L. Roberts was Potash & Phosphate Institute President in 2006. He became President of the International Plant Nutrition Institute beginning January 1, 2007.

The late 1990s saw a series of record crop production years in the U.S. and in other countries. Institute programs continued to focus on production agriculture.

Here are views of some of the many practices where Institute scientists have been in leadership roles:

Soil testing was sometimes considered suspect and unreliable in its early years, but has become a respected and essential practice in modern production agriculture in most of the world.

Plant analysis has long been encouraged by Institute staff as a diagnostic tool that supports decision-making in nutrient use.

Field diagnostics were championed by Institute scientists as a means to identify the next limiting factor and to increase understanding that multiple issues along with soil testing

could and should be considered in the final fertilizer recommendation.

The Maximum Yield Research (MYR) concept was created to help define yield potential and to describe the yield gap between average and potential yields.

Maximum Economic Yield (MEY) helped to define the economic opportunity and advantage to achieving higher yield potential.

Nutrient balance for success in achieving the positive nutrient interactions for higher and more profitable yield is still gaining acceptance.

Nutrient uptake and removal, nutrient balance, and soil test surveys to monitor and meeting the demands of higher yield production are positively associated with the Institute.

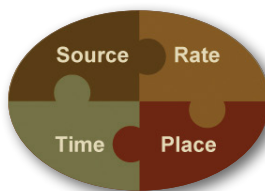
Precision agriculture practices have gained wide acceptance.

The International Certified Crop Adviser (ICCA) program, administered through the American Society of Agronomy, has been a great success in assuring that industry representatives are viewed as qualified and credible advisers. Institute staff have been involved with this program from the beginning.

Site-Specific Nutrient Management (SSNM) has been a priority for Institute staff for many years.

Nutraceuticals, phytochemicals, food quality and related issues continue to receive Institute attention. Researchers continue to identify new information and positive results related to plant nutrition.

Dr. Terry Roberts became President of PPI effective January 1, 2006. Subsequently, he was named as first President of IPNI effective January 1, 2007.



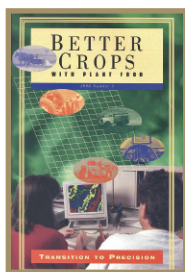
History Being Written

Recent IPNI program developments are evidence that IPNI history continues to unfold each year. In 2010, establishment of a program in Africa with a new director based in Nairobi, Kenya, was the realization a key goal for IPNI. Similarly, introduction of a new program in Australia/New Zealand in 2009 was an important milestone. In 2007, the beginning of the Eastern Europe and Middle East Program based in Moscow, Russia, and representation in the Middle East marked the realization of an original objective of IPNI. Staffing of all IPNI programs has been strengthened and efficiency of operations improves each year.



WORLD POPULATION: World population reached 6 billion in 1999 and increased to about 6.8 billion in 2010.

AROUND THE GLOBE: Growing concern about environmental issues and food security in many regions of the world have come to the forefront again in recent years. Faster and ever-changing technology continues to affect methods of communications.

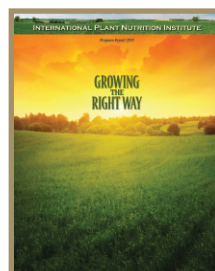
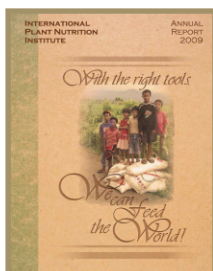
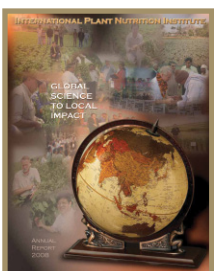
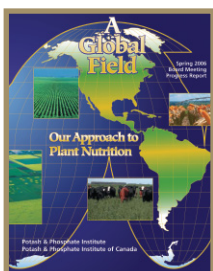
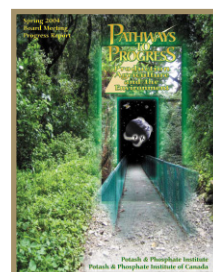
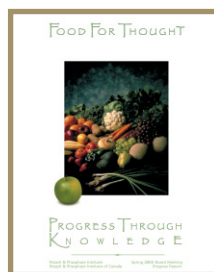
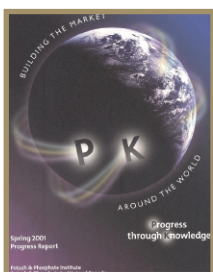
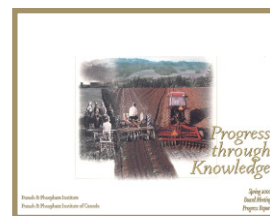
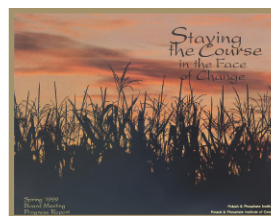
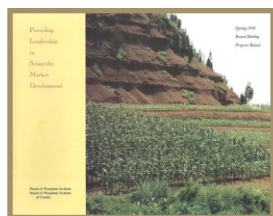
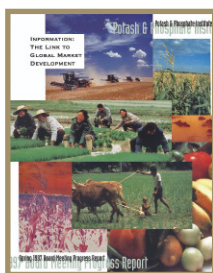


MEETING NEW OPPORTUNITIES AHEAD

During 2008, the issue of food security emerged again as a major concern for developing countries as well as the developed world. Escalating food prices and shortages caught the attention of world news media.

Program emphasis at IPNI continues to place high priority on 4R Nutrient Stewardship. The four rights are defined as using the right source of plant nutrient, applied at the right rate, in the right place, at the right time.

IPNI has maintained from the beginning that fertilizer best management practices (BMPs) combined with sound agronomy are necessary to produce more food and that implementation of fertilizer BMPs will be protective of natural resources.



3500 Parkway Lane, Suite 550
Norcross, Georgia 30092-2844 USA
Phone: 770-447-0335 Fax: 770-448-0439
E-mail: info@ipni.net www.ipni.net