

Forging a New Hybrid Forage

WHAT DO YOU get when you cross a grass with rye? Dr. Surya Acharya knows the answer: perennial cereal rye (PC rye).

Acharya, a Plant Breeder at Agriculture and Agri-Food Canada's (AAFC) Lethbridge Research Centre, developed the first PC rye variety along with his colleagues at several research centres. This unique new crop, specifically adapted to southern Alberta's growing conditions, has garnered interest for several reasons. First, because PC rye is a perennial, it can access moisture from spring thaw, a definite advantage in dryland farming. Second, as a perennial, it stays alive all winter and helps protect the soil from erosion that can be exacerbated by heavy winds, and third, after a producer harvests the initial silage, cattle can graze the second growth in the same season.

Acharya says the goal behind developing this new forage was to make production more efficient for cattle producers. The first variety, ACE-1, grows quickly in spring and matures three to four weeks earlier than barley, giving silage producers an earlier initial harvest and a higher yield throughout the year. The variety also provides a higher forage yield than fall rye.

"We feel this variety will probably make

Want the benefits of a cereal with the longevity of a perennial? Thankfully an AARI-funded research project has bred a crop with results that will benefit Alberta's farm economy.



Dr. Surya Acharya

cattle operations much more efficient because of the higher yields and its ability to grow back and give a second crop that can be grazed," says Acharya. "If we can extend the grazing season by a month, then we have calculated about a \$9 per head savings for cattle. The fall growth is there so you can swath, graze, or leave the crop standing and graze it later in winter, even if the first growth was taken for silage."

Acharya and his team built on the research of German scientists who developed a PC rye suitable for dryland farming in Africa. Acharya spent over a decade working on developing this perennial forage crop that would lower the cost of production and yet be hardy enough to survive the winter in southern Alberta. He is thankful for agencies like the Alberta Agricultural Research Institute and the support it has given to his work. "I must say, if the Canada Alberta Beef Industry Development Fund and



AARI did not support us, I don't think this would be a crop as yet," says Acharya. "As researchers, we don't always have enough support for developing different crops, but because of our provincial situation, we were able to access competitive funds." AAFC and Kenneth Long Seeds of Spring Coulee, the distributor of ACE-1, also provided additional funding.

Currently, ACE-1 is only adapted for southern Alberta, but Acharya is confident that subsequent varieties will be able to grow anywhere that winter wheat is viable. This will allow more producers to gain the benefits of this AARI-funded work.

► Strategic Planning in Dairy R&D

The benefits of collaboration are being recognized by yet another sector of agriculture with an eye on the future.

A STRATEGIC PLANNING SESSION which took place this past summer had strength as its purpose – in this case to bring a united front to dairy research and development in Western Canada. Held over two days in August, the meeting was an opportunity for all stakeholders to voice their ideas, opinions, and suggestions about where R&D in the dairy sector should be focused.

The goal of the session was to create a stronger R&D system by:

- developing clearly identified, industry-driven R&D;
- determining guiding principles for implementing the R&D strategies; and
- collaboratively managing processes for developing and implementing the R&D strategies.

With 47 participants, including researchers, dairy farmers, veterinarians, members of the feed and genetics industries, and funders, this inaugural meeting was the perfect opportunity to decide on priorities that all stakeholders could agree on. The meeting began with an overview of R&D in the dairy industry as well as a review of Alberta Milk's vision and mission to ensure priorities remain in line with the industry's overall goals.

Upon completion of the session, the group identified five priorities for dairy R&D:

- 1) Increasing the longevity of lactating dairy cows;
- 2) Improving cow nutrient utilization and efficiency;
- 3) Exploring milk components and new product development;
- 4) Improving reproductive efficiency; and
- 5) Researching the health and wellness benefits of milk and milk products.

The collaborative approach to this strategic planning session is part of a new wave of co-operation within the agricultural funding community in Alberta. Instead of funding R&D projects in a piecemeal fashion, the planning session facilitated discussion between the groups on integrated funding priorities.

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– Darcy Fitzgerald, Executive Director, ALIDF

crete results from these two days of work," says Bruce Beattie, Vice-Chair of Alberta Milk and Chair of the Research Committee. To that end, the committee indicated that the first four agreed-upon priorities would be used as a benchmark for projects requesting support. Beattie also anticipates this meeting will increase communication and collaboration between dairy researchers in the Western provinces.

Darcy Fitzgerald, Executive Director of the Alberta Livestock Industry Development Fund, says the meeting was a great opportunity to get a handle on what's happening in the dairy industry. "As funders, we'd like this type of meeting to become an annual occurrence," says Fitzgerald. "The advantage of this model is that it is a more coordinated approach and includes our signators, researchers, and other funders who might be interested in funding some of these projects as well." In addition to

ALIDF, AARI and the Canadian Adaptation and Rural Development Fund were at the table. Representatives from the pork and beef industry also attended to see how a collaborative strategic planning session of this type works and were impressed enough to decide to conduct the same exercise for their industries.

The next steps include getting everybody back together to discuss the details, determine which groups are onside, identify projects to fit the priorities, and find funders for the projects. With everybody working together, the process will see more projects being funded that benefit the wider goals of all stakeholders in the dairy industry.

Alberta Milk has also now become a member of the Funding Consortium in an effort to streamline its evaluation and funding decision-making process – just another example of the benefits of collaboration in action.



▶ Profiling our Partners – AVAC Ltd.

The agricultural research and development climate in Alberta continues to improve every day, thanks to efforts of the Alberta Agriculture Funding Consortium. AVAC Ltd. is one of the Consortium's partners, helping to make a difference by bringing value-added agricultural R&D results to the market.

"IT'S NOT TRULY value-added if there's not a buyer willing to pay more for a product," says Keith Jones, President and CEO of AVAC Ltd. He says the not-for-profit, private company brings a unique perspective to the funding table. "One of the real challenges AVAC faces is that we are doing what not a lot of others are doing. From our perspective it's not just about research results, it's about commercial application as well. We orient ourselves from the consumer side, looking back at the agriculture industry."

To that end, AVAC encourages entrepreneurship and new venture development, investing in projects that will add value to agricultural commodities. AVAC is currently focusing its investments in four areas:

- New and enhanced foods
- Wellness
- Non-food industrial applications
- Enabling technologies (which are new discoveries from research that could have application in the first three categories)

The company's support can take many forms, depending on the proposed project's needs with consideration of three primary questions:

- 1) How well does the project fit the market? Has the applicant completed market research on the size of the market and market opportunities and challenges?

- 2) What stage of technical development is the applicant at? Have samples and prototypes been developed? Do health and safety tests need to be completed?
- 3) Is there a solid management team behind the concept? Often the idea is technically sound but the researcher doesn't understand either the financing or marketing aspect of commercialization.

"We look at all these things," says Jones, "and if there is an area that needs further development, we would invest in that area."

The company has invested \$29 million of a \$45 million capital pool into 154 projects worth over \$140 million. AVAC invests financial resources along with managerial and coaching guidance to help ensure the success of innovative products when they reach the commercial market place.

And there are success stories. Consider CV Technologies, a company committed to developing and manufacturing natural health products that have verifiable health benefits. AVAC was a co-investor in clinical trials which led to the launch of Cold-FX, a product proven to reduce the risks of cold and flu and so successful that the company has increased the number of employees and its manufacturing capacity.

AVAC's drive for success is enhanced by the work of the Agriculture Funding Consortium. Jones is a firm believer in the



Keith Jones

Consortium model. "If you can build critical mass in strategic areas, you will be able to build strong commercial success," he notes. "The Consortium's benefits, being a one-stop-shop for researchers to access a wide variety of funders and a mechanism for funders to communicate a clear R&D strategy, is something other regions, both in Canada and the United States, look at with some envy."

In the future, AVAC hopes to generate a number of new success stories, truly benefiting the province's agriculture added-value industry and the consumers who use these products.



Henry Vos

Board Profile – Henry Vos ◀

AS THE OWNER/MANAGER of a 3,000 acre seed farm, Henry Vos understands the importance of adopting new technology and information as a way to enhance production and maximize returns. In fact, he also is a partner in, and manager of, a private agricultural research company which conducts variety, pesticide, and demonstration trials.

It's this belief in research and technology transfer that prompted Vos to agree to sit on the AARI Board, despite an already crowded schedule. A recent appointee, Vos says he brings his background as a producer, researcher, and resident of the Peace Region to AARI discussions. His participation in a wide variety of agricultural organizations such as the Agriculture and Food Council, the Canadian Seed Institute, and the Canadian Seed Growers - Alberta Branch, enhances his understanding of the challenges facing agriculture today.

Vos likes the value-added focus of AARI and has confidence in the priorities and objectives which have been established. "The whole of agricultural R&D provides good pay-back for the money invested," he says. "It's this innovation which will keep Alberta farmers competitive."

Alan Hall, Managing Director of AARI, reports on progress to date.

REPORT CARDS ARE much more than criticism – they are an effective learning tool for evaluating progress, what's going well and what isn't, and suggesting changes that need to be made.

At AARI, we received our first report card, "The Millenium Report", in late 2001. It looked at the overall agricultural R&D system in Alberta, honing in on its strengths and weaknesses. The primary strengths included the level of R&D infrastructure in the province, the willingness of funders to work with researchers, co-operation among many researchers, availability of funding, diversity of capacity, multiple players (funders and R&D performers), and the numerous opportunities for Alberta, especially in the value-added area. The report also identified some significant weaknesses: fragmentation among funders and among R&D performers; lack of leadership and direction for the system; untapped R&D capacity and competence; inadequate funding; and unfilled gaps in the R&D continuum. All in all, not a stellar report and we knew we had our work cut out for the next five years.

Our first priority was to look at strengthening one of our key initiatives – the Agriculture Funding Consortium which was established in mid-2001. The Funding Consortium was our attempt to ensure that the R&D funders in the province were working together, utilizing a one-window approach to R&D funding aligned with Alberta's R&D priorities, and providing a solid due diligence process for reviewing proposals. The Funding Consortium began with four funders and today has grown to over 14 and continues to grow. The one-window approach to funding has been enthusiastically received, and we have been able

to invest over \$15 million annually. We are also working with some of the larger "non agriculture specific" provincial and national funders to align funding efforts on this level.

The next area we tackled was the lack of leadership and direction in the system. Our report card noted that "clear leadership and actions, backed by a funding strategy, has not yet been established or exhibited." In March of 2003, Alberta's Agricultural Research and Innovation Strategic Framework was completed and received government approval. The Framework, the first in Alberta's history, details the R&D goals the agriculture industry will pursue, aligns R&D projects with economic growth opportunities, and identifies gaps in research capacity that need to be filled. Embedded within the Framework is a detailed funding strategy which targets a 1/3 provincial, 1/3 federal, 1/3 industry funds approach. The provincial government has already provided significant new dollars toward agricultural R&D in response to the Framework, and work is underway to obtain federal and industry commitment to the funding strategy.

The Framework identifies key R&D priorities for the province which are in alignment with the \$20 billion in value-added and \$10 billion in primary sales by 2010 growth target set by Alberta's agriculture industry. The R&D performers are now working in a more effective collaboration with the funders and industry to further identify these priorities and develop solid scientific R&D proposals for funding. A memorandum of understanding was signed on May 14, 2003 to establish the Institute for Food and Agricultural Sciences Alberta (IFASA), an institute that will enhance agricultural R&D capacity



Alan Hall

within Alberta. This pooling of resources in Alberta around key priority areas is now being broadened to include all the R&D performers in the province. Working together to tackle the R&D required to deliver on the \$20B/\$10B by 2010 goal is key.

So, as we approach the end of our third year since our first report card, I am confident in saying that significant progress has been made. We have tackled some of the key issues identified in our first evaluation and have built on some of our numerous strengths. We still have a lot of work ahead of us, but with a charted course to follow and some strong mechanisms that we've built, I can actually say that I am looking forward to receiving our next report card.

Until then, we'll keep our shoulder to the wheel.

Alan Hall
Managing Director

Alberta Agricultural Research Institute
9th Floor North, John E. Brownlee Building
10365-97 Street, Edmonton, AB T5J 3W7
Tel: 780.427.1956 | Fax: 780.427.3252
www.aari.ab.ca

The Link is a quarterly newsletter published by the Alberta Agricultural Research Institute (AARI) that communicates with Alberta's agriculture and research communities. Submissions and feedback are welcome.

AARI was established by the Alberta Science and Research Authority Act and funds numerous projects each year that play a significant role in advancing Alberta's position as a global player in the agriculture and food sector. AARI's mission is to enhance the economic contributions of the Alberta agricultural and food industry through support for research and technology transfer, with a strategic emphasis on life sciences.

AARI is also a member of the Alberta Agriculture Funding Consortium. The Funding Consortium is a strategic partnership of agricultural funding groups that was created to provide better funding for research and development in Alberta's agricultural industry. This unified approach provides a one-window application process for researchers, reducing and simplifying the application workload while ensuring proposals are exposed to a maximum number of funders. The Funding Consortium's goal is to ensure that funding decisions and investment made within Alberta's agricultural sector are consistent with the industry's vision for a thriving and innovative future.

