



Joining Forces in water research for Agriculture

Water research in agriculture is essential in the quest to increase yield with less water, by developing cultivars that use less water, determining the water needs of different cultivars, and optimising irrigation scheduling and soil conditions. However, international and local water research organisations all face the same challenge: how do you ensure that your research products actually reach the target audience and are taken up and applied?

A recent study done for the Water Research Commission (WRC) investigated the knowledge networks of commercial irrigators in four Water User Associations along the Orange River with the aim of improving the WRC's communication strategy for this particular target audience. The theme of the research was water measuring and metering. The study found that commercial irrigators in these areas rely heavily on the knowledge of their advisers as the figure below illustrates:

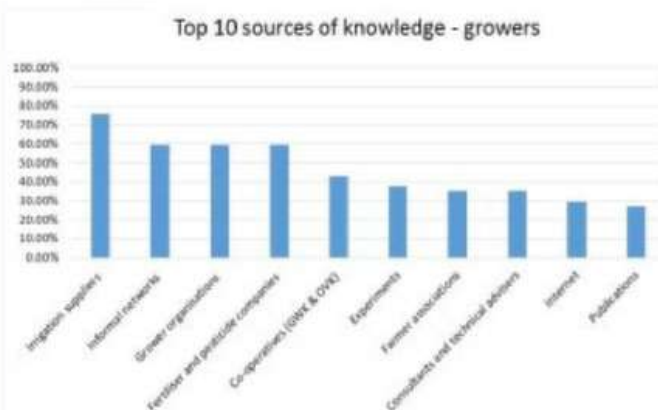


Figure : The top 10 knowledge sources of commercial irrigators in the studied area

Advisers include co-operations such as GWK and OVK, and grower organisations like the South African Table Grape Industry (SATI), Dried Fruit Technical Services (DTD), the Citrus Growers Association (CGA), Vinpro, the Protein Research Foundation, the South African Pecan Nut Producers Association (SAPPA), Oranjerivier Wynkelders (OWK), and Cotton SA.

These organisations do their own research, often in cooperation with the relevant university departments. They fund the research, inter alia, from members' contributions. Commercial irrigators as members of these organisations contribute therefore to the research.

The same commercial irrigators also contribute to the research of the Water Research Commission through the levy that they pay to DWS. The WRC has an annual needs-driven open call for research proposals according to Key

Strategic Areas (KSAs) and research thrusts. Each KSA and thrust has its own research programme and budget. In response to the call, university departments, science councils and private companies with water research expertise submit research proposals to the WRC. The proposals are reviewed through a formal process. The WRC manages the projects to ensure that the aims are met and quality is assured.

The leading growers in each area not only contribute to water research; they also participate in experiments for grower organisations, seed or cultivar suppliers or they do their own experiments on, for example, soil enrichment or water retention. Although the experiments are time-consuming, the benefit of getting first access to the results is perceived to make the effort worthwhile.

These findings point towards opportunities for strategic partnerships between growers, grower organisations, co-operatives, the WRC, and universities, science councils and water research companies:

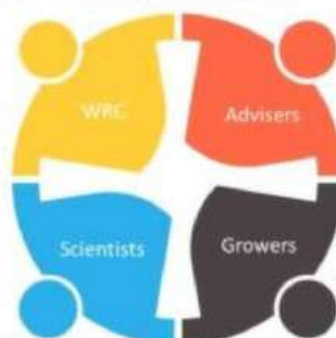


Figure:
Strategic partnerships for
water research in agriculture

Such partnerships will
draw on the strengths of
each partner:

1. Grower organisations and co-operatives have close relationships with their members. They have their fingers on the pulse and know and understand knowledge needs as they emerge. Grower organisations and co-operatives have their own grower advisers or work closely with advisers who can interpret and translate research findings into workable solutions. They also have communication networks to keep growers informed on: Who is doing what research? Who can I contact if I have questions? When will the results be available?

2. The Water Research Commission has funding capacity and it has the expertise and many years of experience in managing research projects.

3. University departments, science councils and water research companies have the scientists and the research expertise.

4. Involving growers as partners in the experiments and tests of water research will contribute to findings and solutions that are practical and applicable in field conditions.

There are already success stories of such partnerships: The WRC and SAPPA are busy with a project

which is investigating the water use of pecan nut trees in the Northern Cape province. A previous WRC research project conducted by the CSIR and the University of Pretoria investigated the water use of pecans in the Cullinan area. According to the SAPPA Board member interviewed, GWK held workshops on the irrigation scheduling for pecans about two years ago.

The research need emerged from these workshops. There were many rumours and different opinions about the water use of pecans in the Northern Cape, but more dedicated research was needed. GWK approached the WRC to fund research on the water use of adult pecans in the Vaalharts irrigation scheme and the area between Boegoeberg and Uptington and so the partnership with SAPPA was forged.

The second success story relates to a partnership between the WRC and Citrus Research International (CRI), the research arm of the Citrus Growers Association. The two organisations joined forces to determine the water use of citrus for different types of citrus, different cultivars, and different growth stages of the plant. According to the project leader, they measured the actual water use of the citrus trees by monitoring transpiration. We determined the water use of

citrus plants for our practices, our circumstances, our cultivars. It was the first research of its kind in South Africa. It was also a long-term study, with very comprehensive data – readings taken every hour for two years.

The results of the research on the water use of citrus trees were shared with several organisations, advisers and the CRI study groups. Through the study groups, the CRI tried to equip the growers with knowledge that would enable them to ask the advisers the right questions. If you are interested, you can request the WRC reports, TT772/1/18 (Volume 1) and TT772/2/18 (Volume 2), from Dr Sylvester Mpandeli (sylvesterm@wrc.org.za).

The success stories set an example for partnerships; now the role players only need to take up the opportunity. Strategic partnerships are powerful mechanisms to coordinate water research in agriculture in South Africa. Coordinated research is needed to address sustainable agriculture water use in the face of climate change and the increasing demand on our water resources. ■

By Sarah Slabbert, Nadja Green and Isobel van der Stoep
Dr Sarah Slabbert and Nadja Green are from BHI32 and Isobel van der Stoep is from Isowat.

GROWN USING ORGANIC METHODS

FAMILY ORGANICS
PECAN NURSERY
— MAGALIESBURG —

BARE-ROOT PECAN TREES AVAILABLE FOR 2019

WICHITA **NAVAHO**
 CHOCTAW **PAWNEE**

CONTACT US:
CELL: 0837003549
EMAIL: GAVIN@IPAK.CO.ZA
WWW.FAMILYORGANICS.CO.ZA

