

INTERNATIONAL DAY FOR WOMEN IN SCIENCE

In tune with science

For Margreet Asma, the fascination for plants came early in life during childhood summer walks in the flower fields of Enkhuizen – and it has stayed with her up to this day.

Not many have the privilege of having a flower named after them but lucky for Margreet, her father, who worked for four decades in the flower seed business, had christened a variety of dahlia after his daughter. That daughter grew up to pursue a passion for science and plants. Over the last 30 years, she has been dedicating her professional life to seed health research, making sure that plants stay healthy through the detection and prevention of diseases and pests.

Her interests go beyond the laboratory. Margreet is also an accomplished musician, language student and runner.



Margreet inspecting fungal tests inside a growth chamber.

Hello, Margreet. Tell us what you do.

I am a senior researcher in seed pathology at the Seed Pathology Research group at Bejo Zaden in Warmenhuizen, the Netherlands. Our group consists of 14 people and we have four disciplines: detection, additives, epidemiology and disinfection.

I am working in the detection subgroup and together with four other colleagues, I work on the development and improvement of seed health detection methods. We also do part of the epidemiology work where we do research on preventing seed infections, the relation of seed infection and disease development (transmission research), and how seed infections occur and develop. I have been working with Bejo since 1988, starting as a seed health technician.

What is your scientific background?

I pursued my studies in laboratory research (technician) and specialized in botany. This was followed by several studies, courses, in-house education, and hands on experience over the course of my career at Bejo Zaden.

How did you become interested in plant science? How did you choose your field of specialization?

My father has worked for 40 years at Royal Sluis (which later became, Peto Seeds, Seminis and Monsanto), in the field of flower seeds. As a child I walked with him many times on summer evenings on these beautiful flower fields to select the most promising varieties. He was involved in Fleuroselect, the global organization for ornamental plants, and so he travelled a lot.

After finishing secondary school at age 18, I worked at the lab of Royal Sluis for several months. At the time I was not sure what to study. At first I wanted to study biology in university, but the experience at Royal Sluis led me to go for a more practical education. So I decided to pursue laboratory education and specialized in botany.

In 1988 Bejo Zaden had a job opening for a seed health technician. I wrote them a letter and had a job interview with Jeroen van Bilsen (who was involved in [ISHI](#)) and thus started my career at Bejo with vegetable seeds.

Which topic are you working on at the moment? How do you think you'll make a difference?

It is not only me, but our group is very busy with virus and viroid detection on tomato and pepper seeds. Moreover, there are several *Fusarium* species important on vegetables like asparagus and onion, and we want to know more about the pathogenicity, molecular identification and the role of seeds in the pathway for disease development. Another interesting subject is multiplex detection of many pathogens in seed extracts using molecular techniques like sequencing and PCR. I see that as a near future tool to use as a prescreen method for combined detection of fungi, bacteria, viruses and viroids in seed extracts.



*As senior researcher in seed pathology, Margreet is currently looking deep into the role of *Fusarium* on seeds in relation to diseases.*

What is a typical day like for you?

After having breakfast, I take my bike or the car (when it rains) to travel to Bejo (9 km), and start with coffee and then check my mail. We have several meetings on a day, sometimes some practical work too, but that is becoming rare. When I have to do molecular work, I need my colleagues to educate me because equipment and procedures have changed a lot since I did laboratory work. Nearly every day there is something in the organization that needs my attention, like questions from colleagues, the routine department (seed health testing), phytosanitary issues and all kinds of questions. There is never a dull moment.

What are the hardest parts related to this work?

Being busy with non-pathway proven pests and responding to phytosanitary issues which are sometimes difficult to understand. It is also a challenge to keep everyone well informed; as the organization is growing fast it is very important to involve the right people. For many diseases

we still do not know how nature has developed. For example, we still do not when and know exactly internal cabbage seed infection with *Xanthomonas* occurs, even after years of research it is still not fully clear. So nature gives us many questions, and when we have an answer a new problem (disease) will come up. This is what keeps it a very interesting and challenging field to work on, even after 32 years.

Besides your scientific interests, what are your personal interests?

I have been playing the violin since I was seven years old and when I was 16, I started playing viola. A viola is a 'larger violin' that plays the lower voice and in the orchestra the middle-voice. And then at the age of 30 I discovered the violoncello. I still have lessons, every 2 weeks and play a lot in orchestra and chamber music groups, such as string quartets. In the orchestra we play the orchestral part for an oratory (a classical work for choir) in pieces like Requiem (Mozart, Verdi), or Matthäus Passion (Bach), Die Jahreszeiten (Haydn). I have played these pieces many times.

My other personal interest is running. I recently ran my first half marathon (21 km). I am also learning Italian. I've been following an Italian course for four years now, and last year I went to Bologna for two weeks for an intensive course. It is a difficult but musical language; the grammar is complicated but together with playing music it is a way to keep my brain active.



Playing Mahler's Symphony No. 4 with the orchestra, Margreet Asma (on violoncello, first music stand) combines her passion for science with music.

In your opinion, which changes, if any, are needed in the scientific system to be more attractive to women in science and possible future scientists?

That is a difficult question, and I answer it with another question: is the scientific system not attractive enough for women and future scientists? I do not know the situation at other companies or universities but in our research department of approximately 135 people, there are many women. I think it is important to get the opportunity to combine work with personal life like your family. I am still very happy that Bejo was very supportive to decrease my working hours, so I never stopped working when my children were born in 2000 and 2004. Not only for women but also for men it is important to have the possibility to work part-time because having a family is a role for both parents. ■

by Francine Sayoc for the International Seed Federation