

Nutritional values
and marketing of
rare cultivated
plants of North
Rhine Westphalia

Ullrich Schulze
Chamber of
Agriculture



The aim of the initiative is

- conservation and promotion of plant genetic resources (PGR) by cultivation and use in economic conditions
- The implementation can only lead about the innovation of marketable products

Marketability of products required

- **Individuality** of the raw material
- technologically good **Quality**
- **acceptance** of the end user!

The continued use of traditional crops confronted by many problems!

- **For farmers under the technological limits are in areas from 1 to 10 ha what a harvest of 2 to 20 t**
- **Today's food technology requires raw materials - ie mass (Malthouse / brewery need about 50 t for a single operation)**

So –

Focus on smaller structures!

As a chance for small-scale structure, and traditional craftsmanship!

- For this form of marketing and conservation of plant genetic resources have in the past ten years good examples developed
- particularly in regional structures and directly marketed their enterprises developed the demand for crop with special characteristics and origins.

The customers were not only interested in the traditional criteria and the individual and varied tastes, the aspects of a healthy diet played a role

Thus a consideration of the varieties according to their specific nutritional values is possible. And convey the clients about the benefits of their ingredients.

I would like to suggest some ways of thinking:

In the past century, the focus was on growing grain on the increase and retention of carbohydrate that is, the yield by plants in the seed-based energy as the basis of human food and animal protein to finishing.

To the first question:

Do we in crop production **only the** view of the carbohydrate yield?

This species diversity but provides other valuable ingredients that should in our modern day diet play an important role!

- Phytochemicals -

In our project, we observed so far:

in different cultures, such as tomatoes and grains

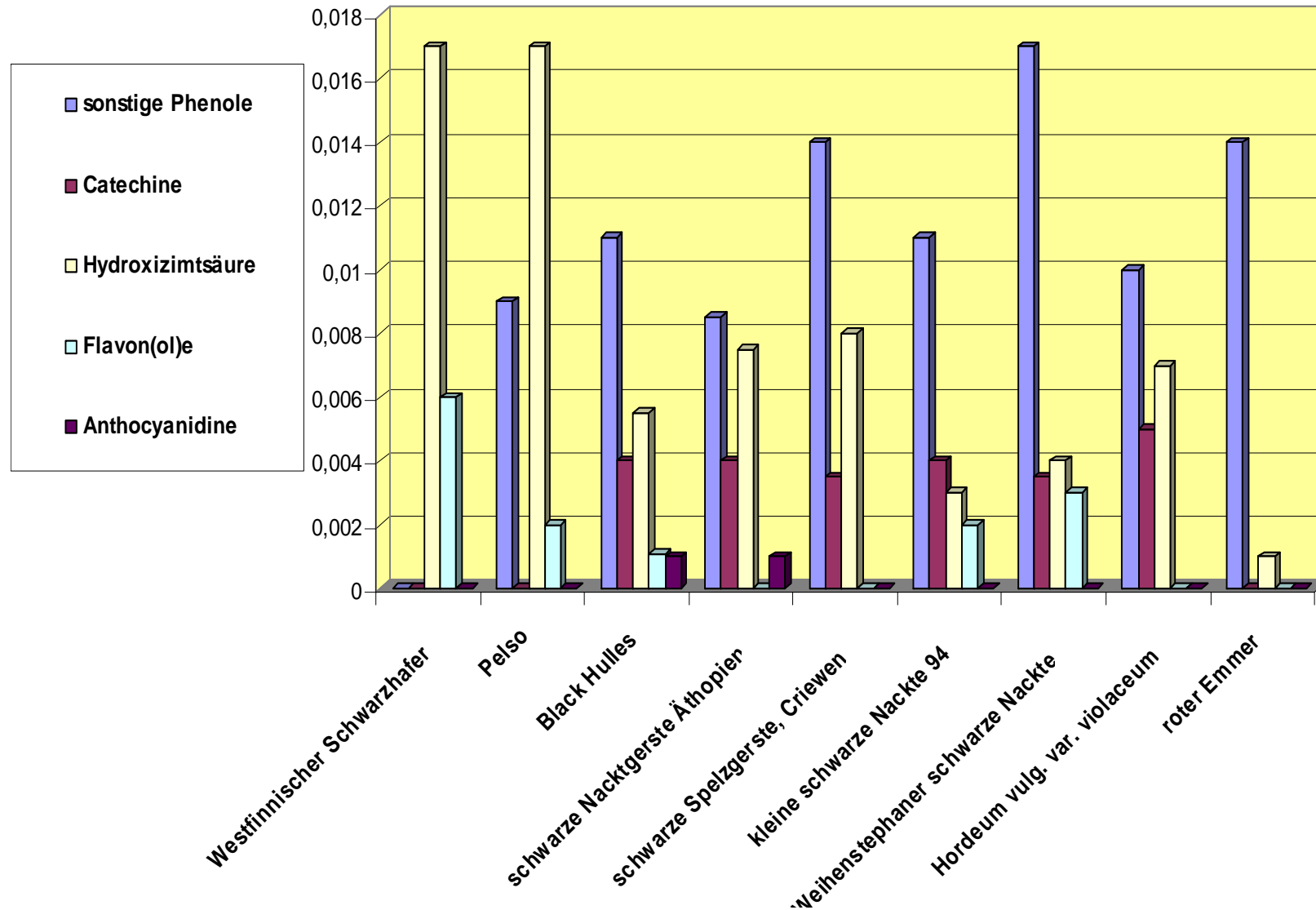
- **Polyphenols** such as anthocyanins
- **Fiber**, such as hemicelluloses and
- **Beta Glucan**,

polyphenols

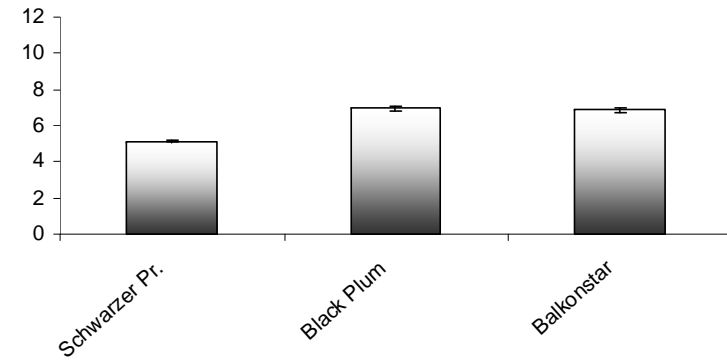
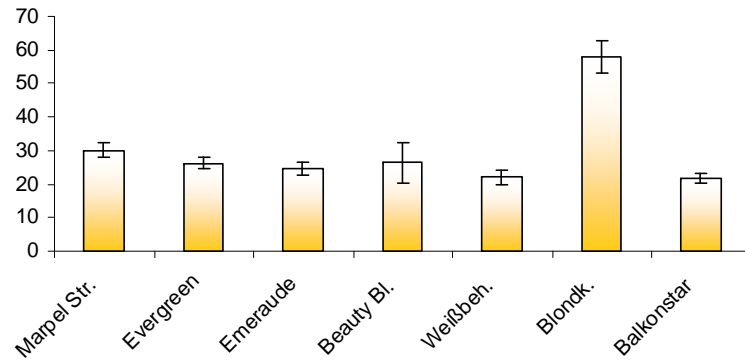
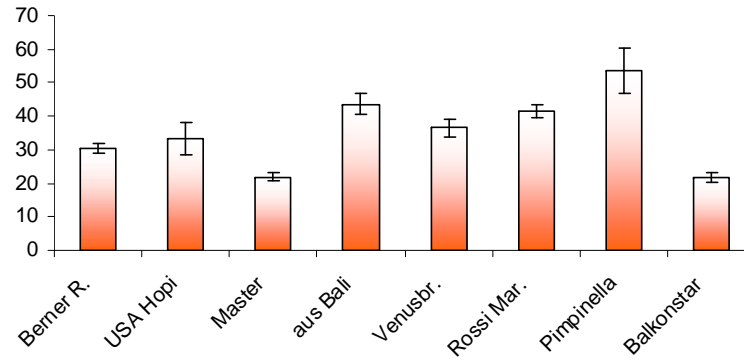
Some polyphenols which are specifically responsible for the color of the plants act as other antioxidants, inter alia, anti-inflammatory and cancer preventive.

in this analysis result sees the various phenolic compounds and their highly variable distribution within the investigated grains

Polyphenole bei Schwarzhafer, Nacktgerste und Emmer in mg/g



AC Phenole [mg TÄ/100 g]



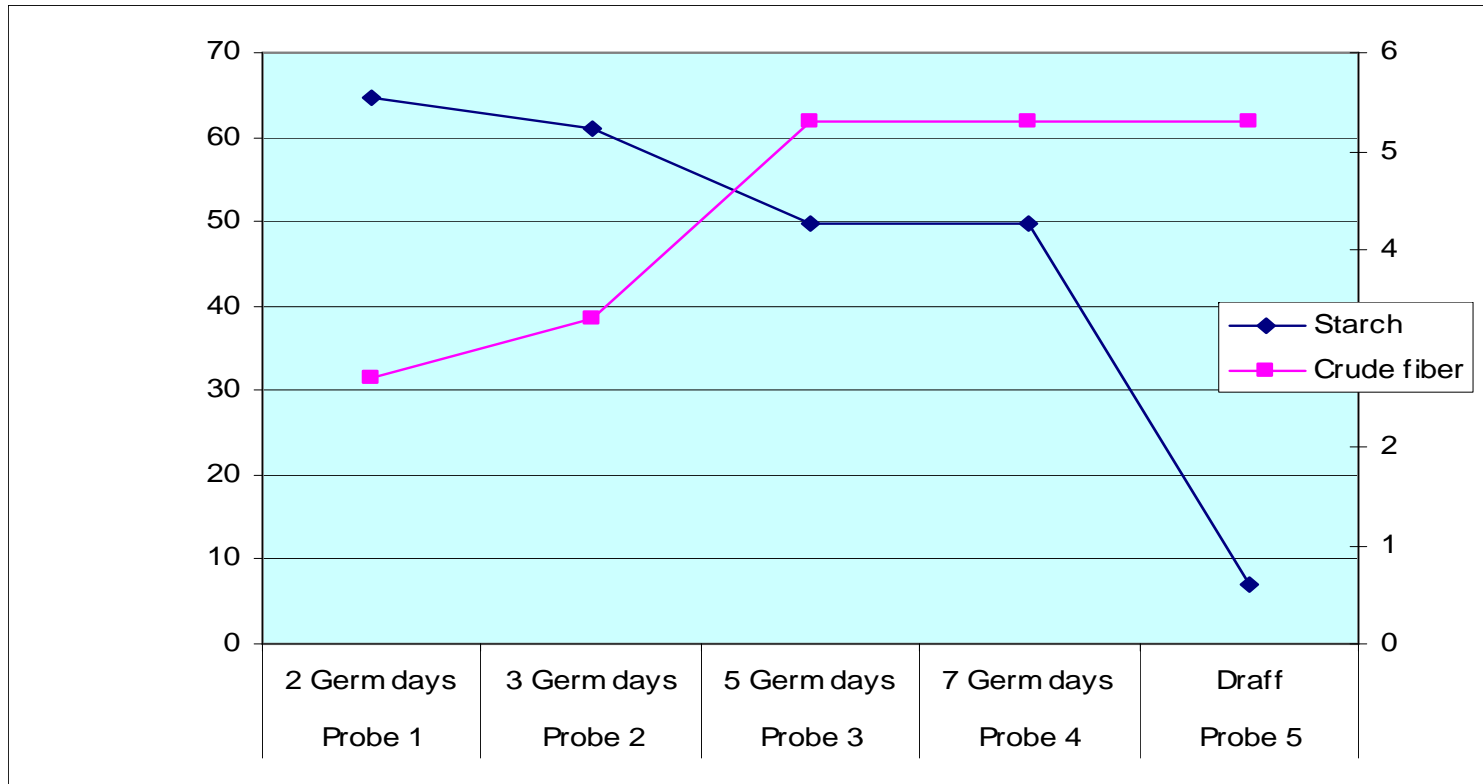
15 of the old tomato varieties studied showed **Anioxidative capacity** was consistently above or close to the current reference variety

hemicelluloses:

are a component of plant cell walls. Some properties have a disruptive effect on the baking process, the swelling, mucous as pentosans in the flour to prevent the formation of a gluten framework, but have a satiating effect and stimulate intestinal activity at no additional power supply.

"One eats enough shall but not fat"

Developing strength and fiber content in germinating wheat



Through the germination of Wheat valuable ingredients can be developed and "**fattening**" starch removed. For many people this is a motivation and thus commercially viable

Beta Glucan

is a soluble fiber that can not be digested by digestive enzymes, it binds up to 40 times its own weight in water and swells accordingly. During digestion, the proceeds will be longer than the normal amount of blood sugar and cholesterol levels lowered.

It acts quickly filling, and therefore does not feed at the desired average daily gain in cereal breeding about the last century, this feature negatively evaluated

Chart

- **missing,**

there are not 14 landraces to study but I
have been in the data

Initial reactions from the laboratory
showed but about 4 times higher values
than the current ones!

So we should use

- the many landraces
- more ingredients for a healthy diet open up
- even more useful opportunities and develop innovative products



Thanks for the attention