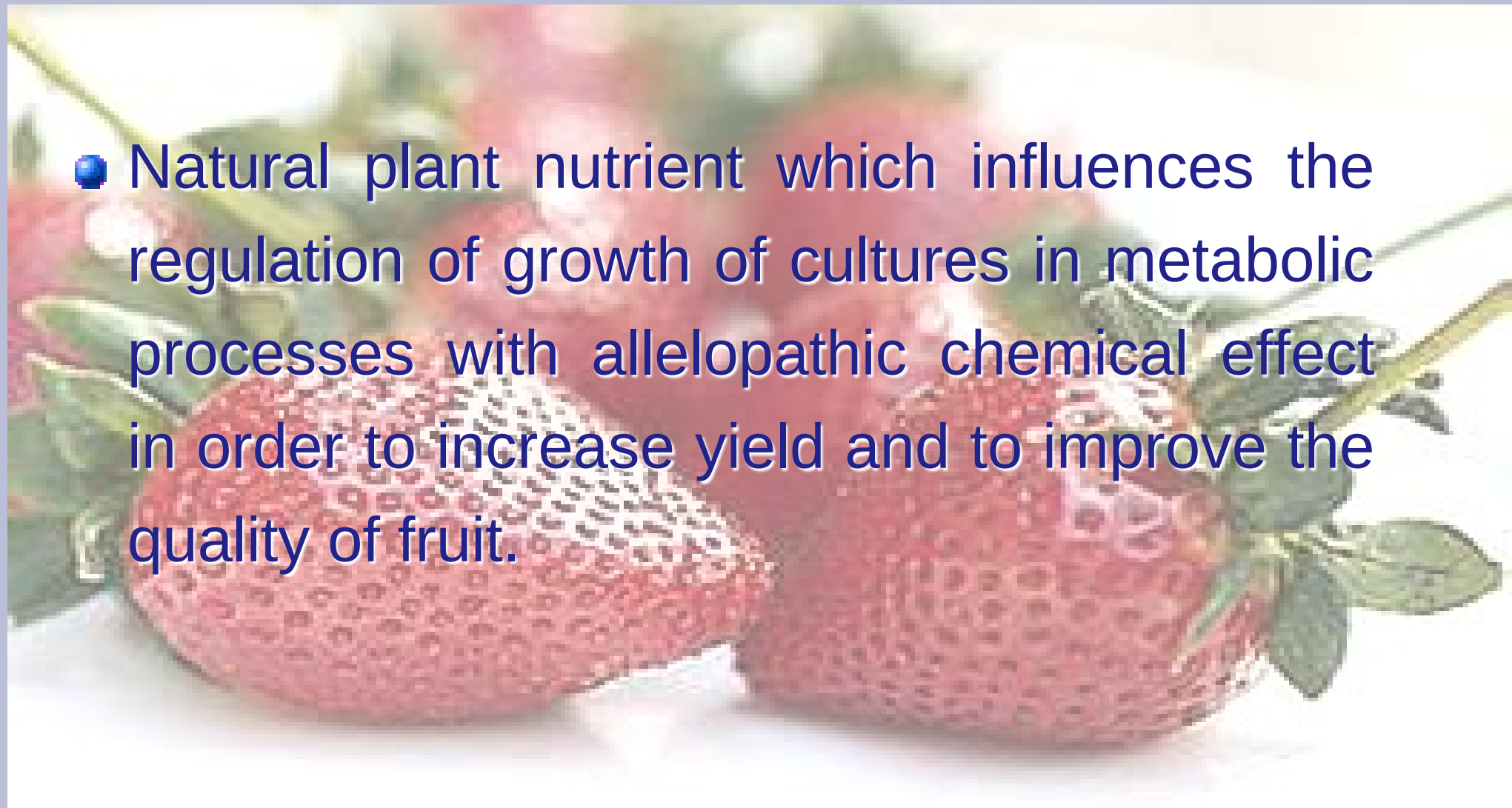
AGROSTEMIN

Agrostemin



- Natural plant nutrient which influences the regulation of growth of cultures in metabolic processes with allelopathic chemical effect in order to increase yield and to improve the quality of fruit.

Effect of Agrostemin

- *Activation of biochemical processes which is a consequence of lack of life factors*
- *Activation of biochemical processes which is a consequence of decreased quantity volume of substances inside the plant*

Structure of Agrostemin

- **Active complex:**
  a) amino acids.
  b) organic acids and
  c) derivatives of organic acids

- **Inhibitor complex**
  a) derivatives ABA (apcisine acids).
  b) saturated aliphatic carbon hydrogen and
  c) cyclic inhibitor ($C_8H_{29}N_3O_7$)

Origin

- Natural row material
- Domestic biotechnology
- Domestic row material

Bioregulating effect

- **Agrostemin** encourages plant to optimize its own life processes:

a) growth.

b) development.

c) breeding

Bioactivating effect

- **Agrostemin** encourages plant to optimize its metabolic processes and to increase the following:

  a) qualitative characteristics of cultures

  b) quantitative characteristics of cultures.

Use of Agrostemin

- Husbandry
- Truck farming
- Fruit growing
- Viticulture
- Horticulture
- Meadows

Application

- Three applications (in fruit growing):
  1) before blossom 30-35 g/ha.
  2) during blossom 30 g/ha.
  3) after blossom 35 g/ha

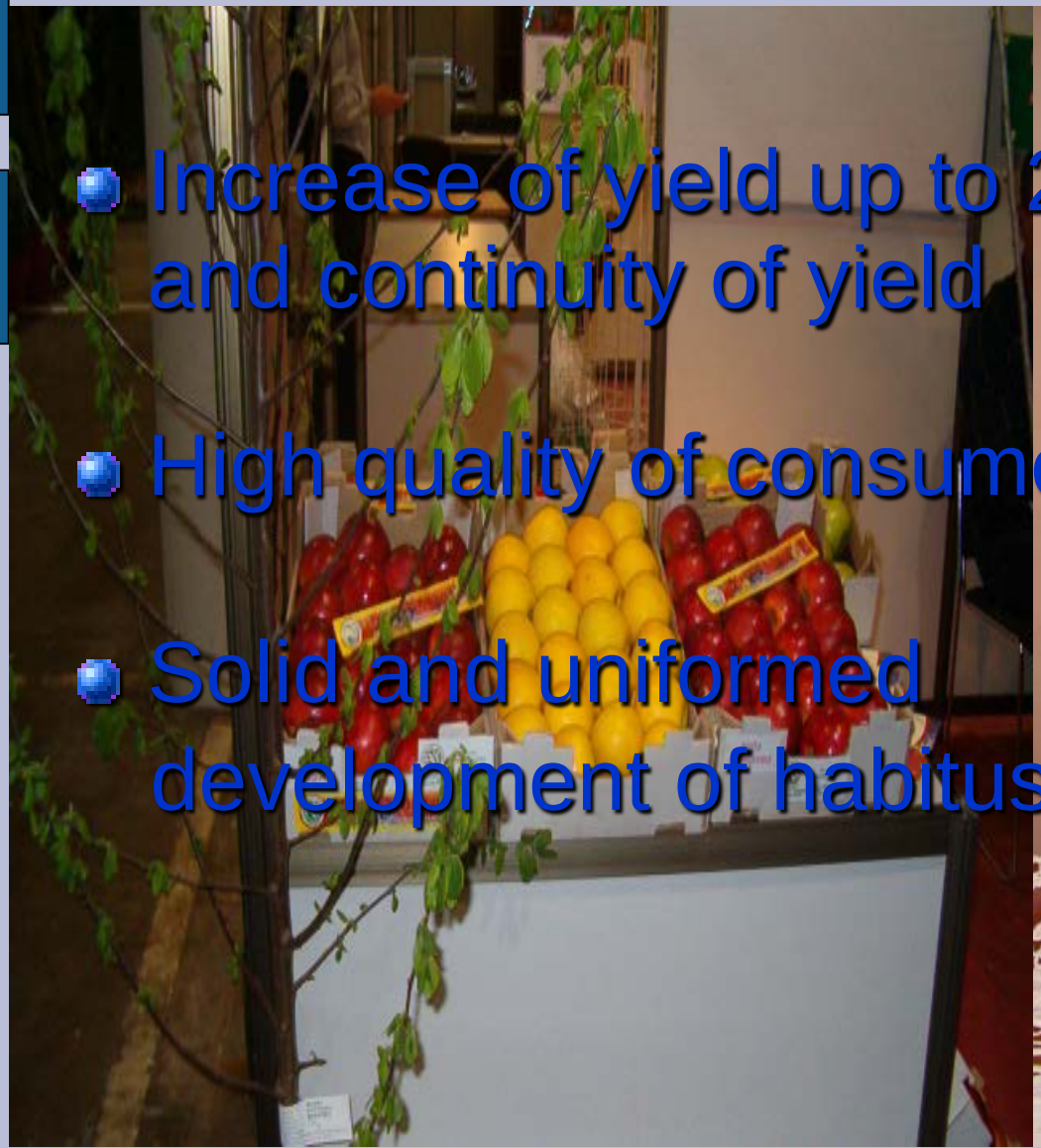
T h i s i s t h e m o s t c o m m o n w a y ! ! !

Application

- Five applications (in fruit growing):
  1) before blossom – 35 g/ha.
  2) during blossom – 30 g/ha.
  3) after blossom – 35 g/ha.
  4) fruit in ripen pheno phase – 30 g/ha.
  5) fruit ripening – 30 g/ha

This is how the champions of the fruit rowing industry do!

The outcome of the use



- Increase of yield up to 20 % and continuity of yield
- High quality of consumer fruits
- Solid and uniformed development of habitus

Agrostemin – W H Y ? ? ?

- How did we become aware of the need for biostimulator and bioregulator?
- How did we become aware of the time for use of biostimulator and bioregulator?

The solution to the problem is in POLLEN

- The significance of pollen – pollination of plants
- The pollen seeds are created before opening of buds
- The creation of pollen can be influenced by the following:
  - internal and
  - external factors

The formation of pollen seeds

- Internal factors depend on the plant's genetics which determines the following:
  - the size and
  - the quantity of pollen seeds
- External factors:
  - insufficient soil moisture.
  - exaggerated relative air humidity.
  - lower temperatures by night.

Pollen = Flower powdery substance

The structure of pollen:

- Membrane of pollen seed

a) EGZINA – external membrane composed of cellulose or cutinesed by contents of colored substances

b) INTINA – internal membrane. very thin and in two layers. composed of cellulose or of pectic substances with sporopollenin (high molecule terpen)

Chemical composition of pollen

Plant species		Water	Proteins	Fats	Starch	Regular sugar	Irregular sugar	Ashes
Almond	g/100 g of pollen	9.8	28.7	3.2	0.7	24.4	3.1	2.6
Peach	g/100 g of pollen	8.5	26.5	2.7	1.6	21.8	9.0	2.8
Olive	g/100 g of pollen	10.1	16.7	4.7	1.1	28.3	5.8	1.9
Clover	g/100 g of pollen	11.6	23.7	3.4	1.3	21.4	4.2	3.1
Foxglove	g/100 g of pollen	13.3	20.4	2.4	0.4	25.5	3.4	3.1

Transfer of pollen

- Pollen is transferred by:
  - insects.
  - air flow. ...

... from STAMEN to PISTIL STIGMA

Germination of pollen

Germination of pollen occurs when INTINA (internal membrane) grows through pores of EGZINE (external membrane) creating -THE POLLEN TUBE which goes down to the seed embryo and embryo sac where the swollen pollen seed settles down due to the absorption of liquid from pistil stigma!!!

Germination of pollen II

- Several pollen seeds arrive to pistil stigma
- Germination of pollen is effected by the following factors:

  a) biotic and

  b) abiotic

For example: It is due to extremely high temperatures and low relative air humidity.

or. on the other side. low temperatures and high air humidity that pollen quickly loses its germination ability and seeds become sticky and die; even scientific farming methods. such as pruning and many other similar situations can jeopardize normal plant functions

this is why it is necessary to use AGROSTEMIN

Fertilization and AGROSTEMIN

- Improvement of germination and fertility of pollen by complex of amino acids which:

  a) have an inhibitory effect on recessive alleles.

  b) have a cumulative effect on loci with dominant aleli and

  c) have an epistatic effect on mutual relations of dominant genes.

AGROSTEMIN

Now you know why it is necessary

to use initially **Agrostemin** before blossom

and how and why to use it further during

vegetation of your plants!

M.Sc. Engineer
Saša AVRAMOVIC