



Bees and pesticides

Róbert Chlebo, Ing. PhD.

Slovak Agricultural University in Nitra

Robert.Chlebo@uniag.sk



Honey - healthy foodstuff



Cereals



Sweets



Mead



Other products of hive

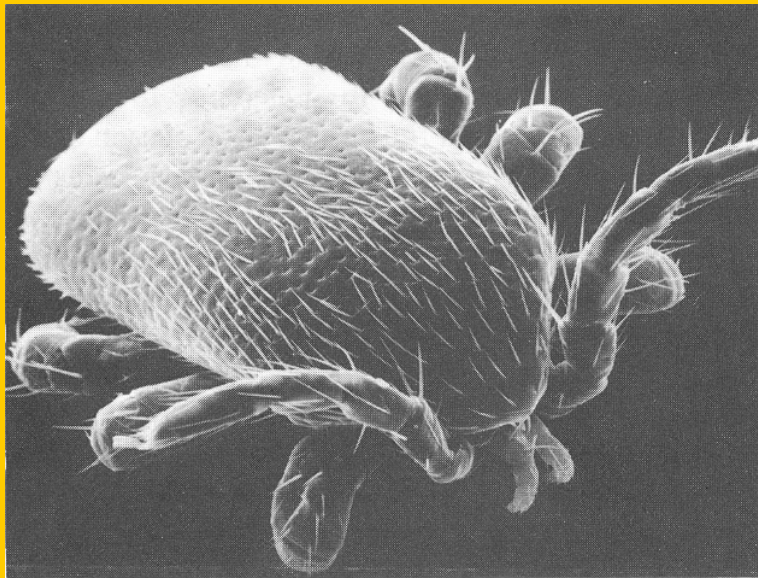


Insecticides

- ✦ Spain, Portugal - 42 pesticides monitored in 50 samples (Blasco et al., 2003): gamma-HCH 50%, HCB 32%, alpha-HCH 28%, beta-HCH 26%.
Mostly organochlorines, below 05 mg/kg.
- ✦ 10 pesticides - from 1 to 57% Spain (1995)
- ✦ 0% Swiss (2003)
- ✦ 17,5% France (1997)
- ✦ controversial: Imidacloprid - Gaucho

Acaricides

☞ amitraz



Herbicides, bactericides, fungicides

- ✱ contaminate mostly bees and pollen, rarely honey
- ✱ positive results (Fléché et al., France, 1997)
- ✱ 36 % in bees (n=148)
- ✱ 61 % in pollen (n=146)
- ✱ 3 % in honey (n=683)

Slovakia - monitoring

number of samples – positive samples – average value in
mg.kg⁻¹ – samples exceeded MRL

malathion (2-0-0-0), hexachlórbenzén (5-0-0-0), fenitotrion
(20-0-0-0), diazinon (20-0-0-0), dichlórvos (21-0-0-0),
dimethoat (2-0-0-0), azinfoethyl (1-0-0-0), lindan (5-0-0-
0), DDT (5-0-0-0), parathion-metyl (2-0-0-0), parathion-
ethyl (2-0-0-0), phorate (2-0-0-0), pirimiphos-metyl (21-0-
0-0), hexachlórcyklohexán alfa izomér (4-0-0-0),
hexachlórcyklohexán beta izomér (4-0-0-0).

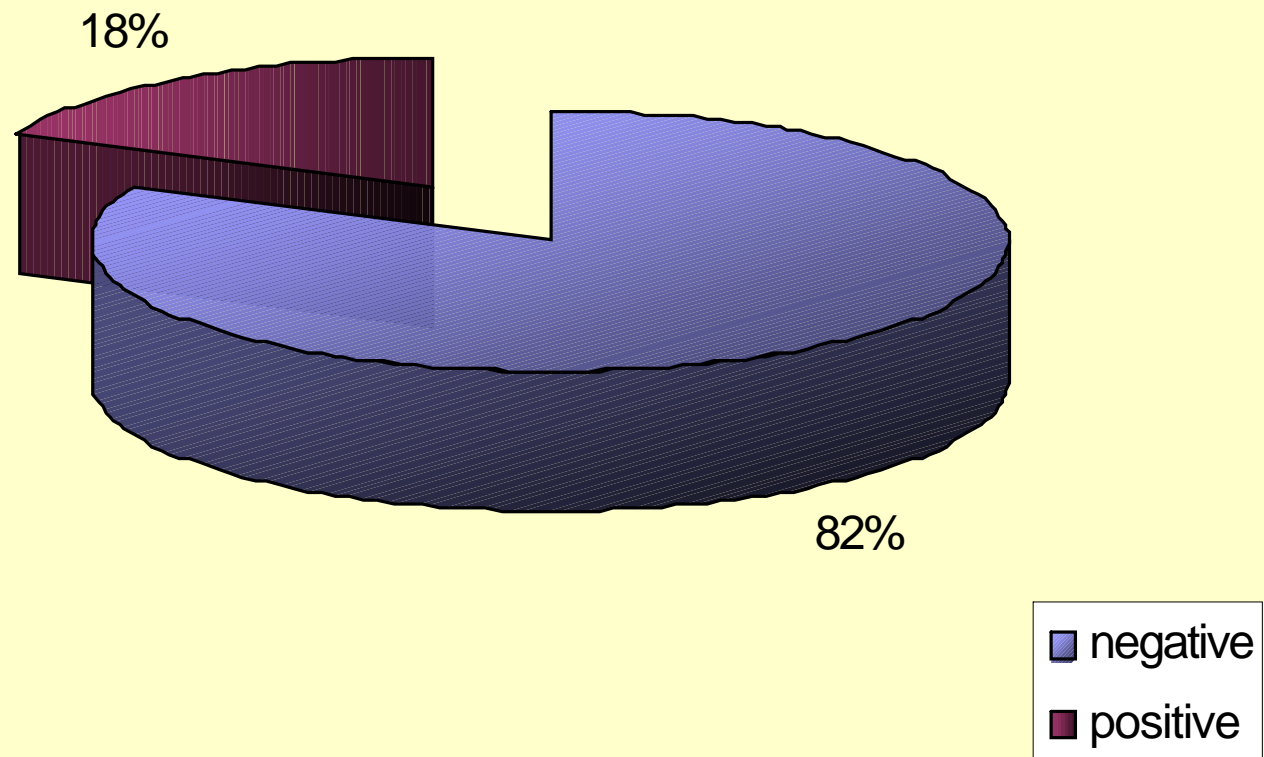
Amitraz (23–3-0,009-0)

Pesticides - conclusions

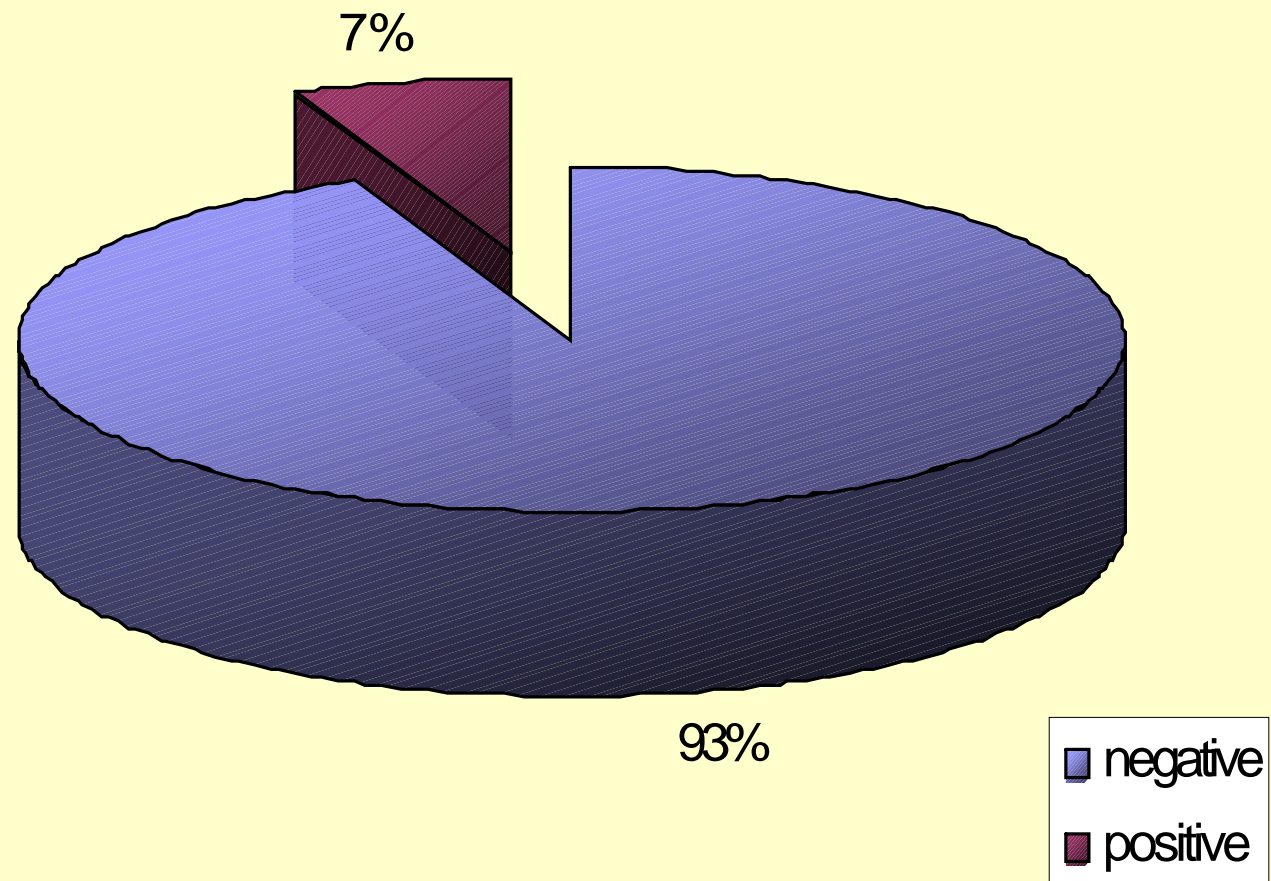
- ✦ relatively low contamination of honey
- ✦ filtering effect of bees
- ✦ bees decrease high pesticide nectar concentrations by a factor of 1000



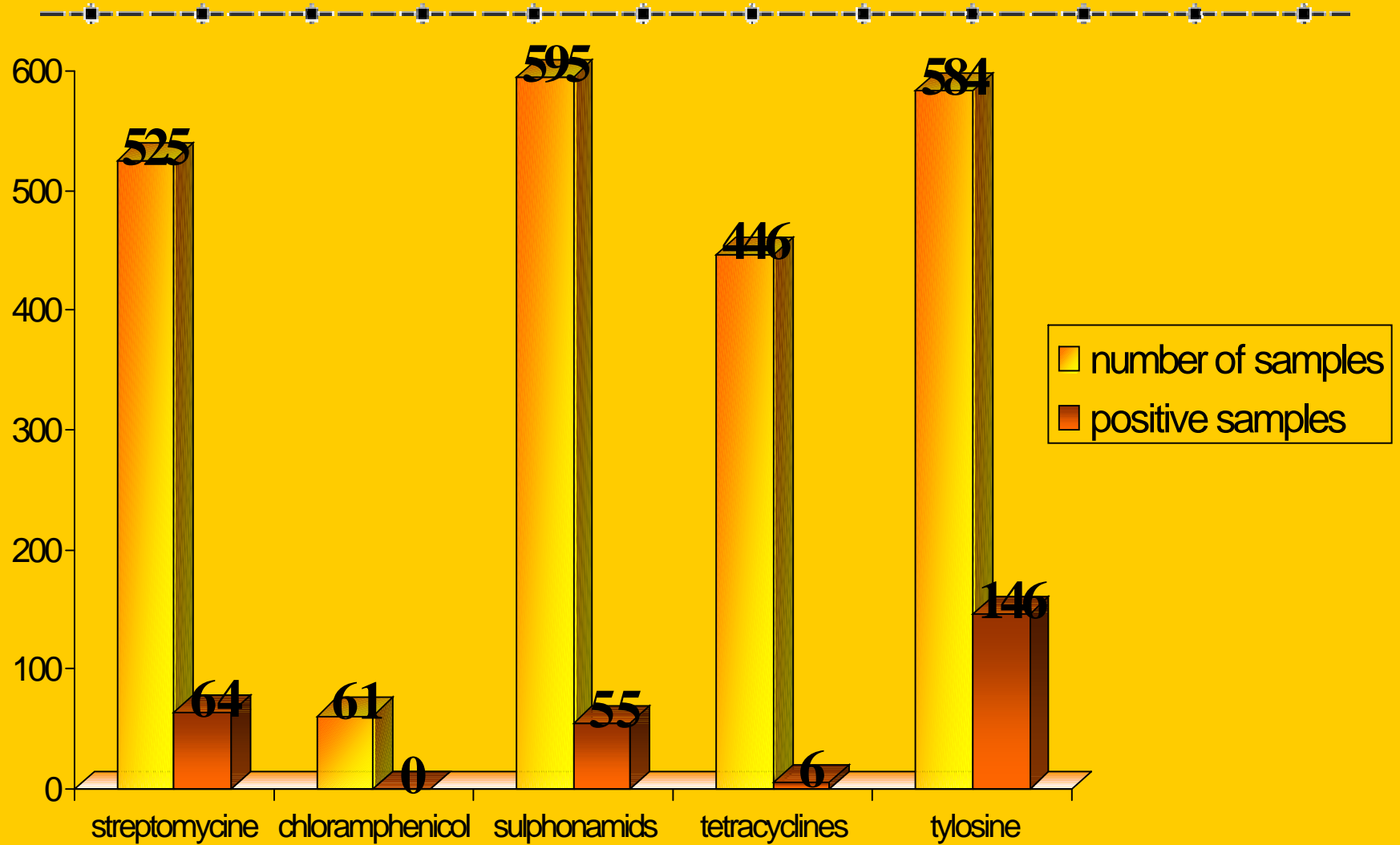
Presence of antibiotics in honeys 2004



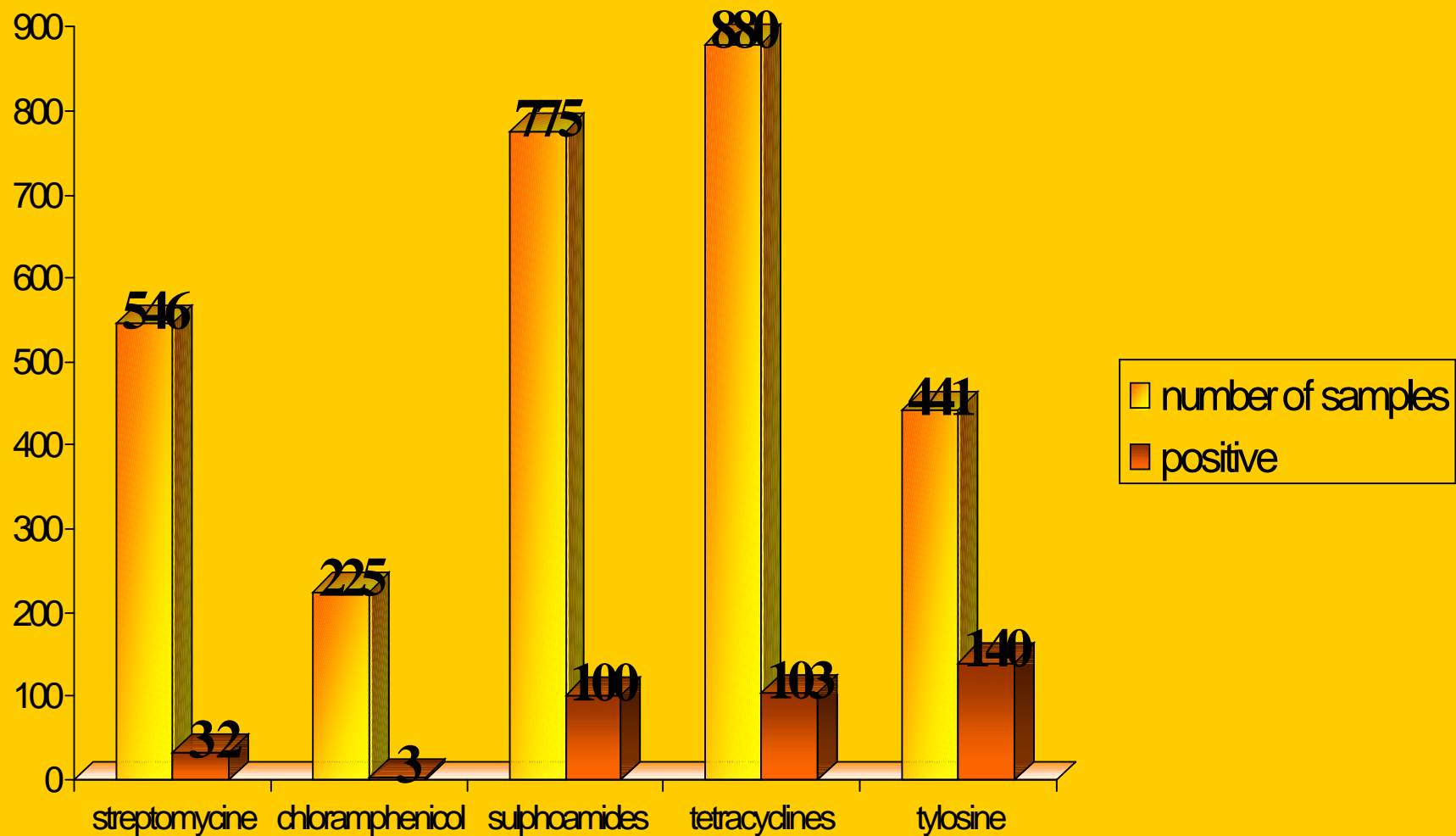
Presence of antibiotics in honeys 2005



Structure of antibiotics 2004



Structure of antibiotics 2005





Thank you!
Robert.Chlebo@uniag.sk

