

# Experience in controlling invasive woody plants in Hungary

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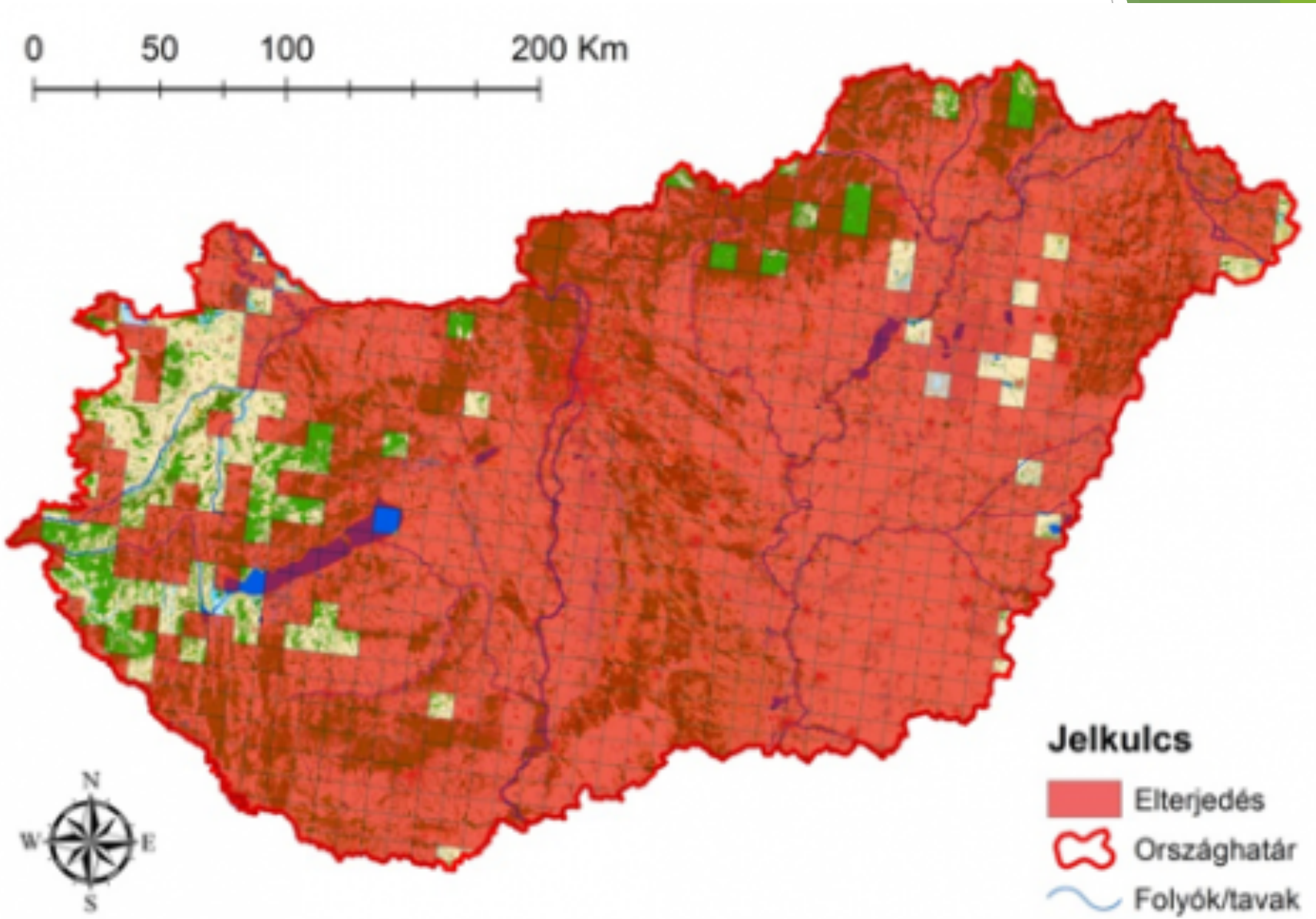
14/10/2025

# EXECUTIVE SUMMARY

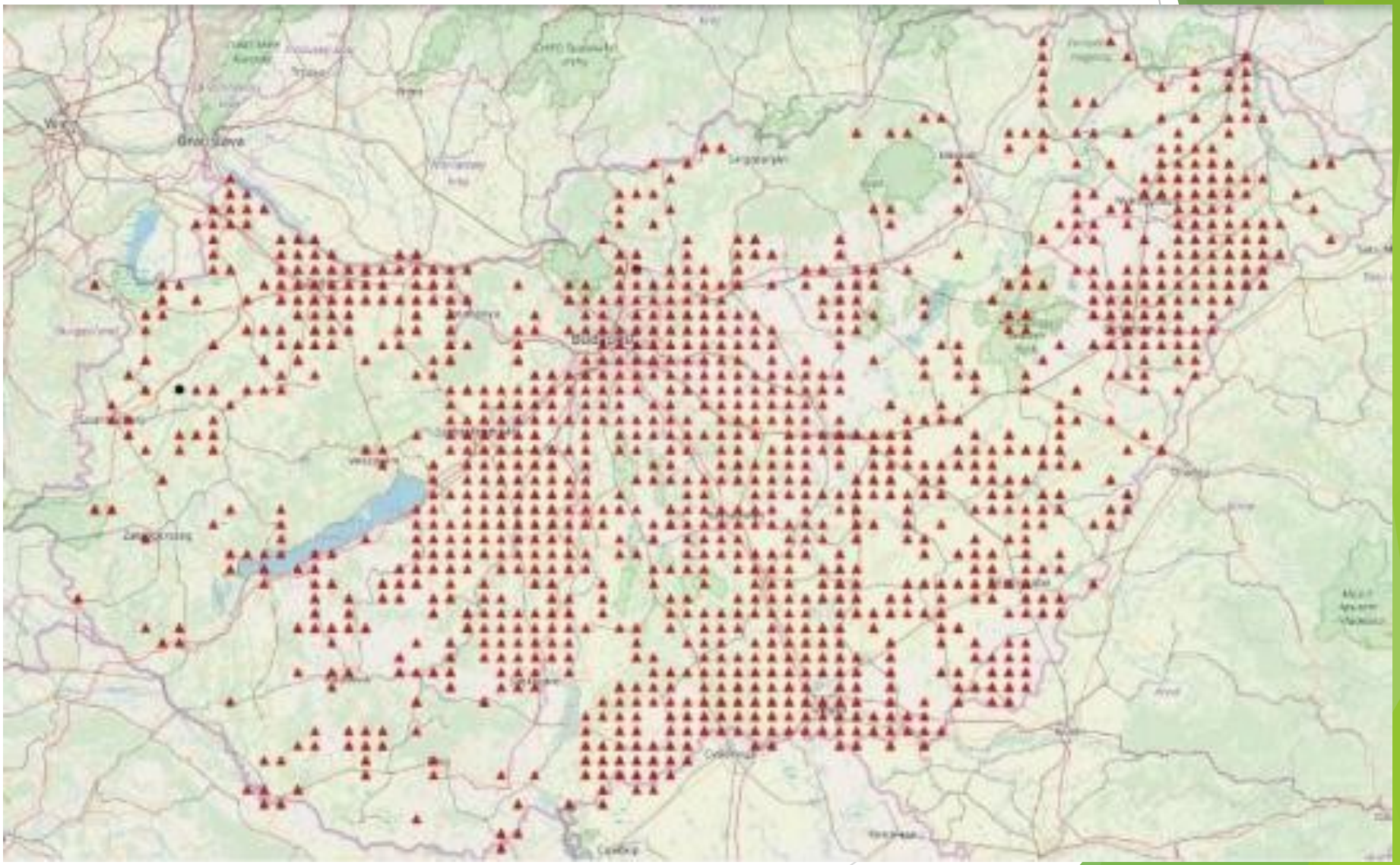
- Most problematic woody invasive plants in Hungary
- Our invasive plant eradication activity
- Applied large-scale eradication methods
- Development activity
- Legistlation issues

| Main habitat-destroying invasive plants in Hungary | |
|---|---|
| *Acer negundo* | *Heracleum mantegazzianum* |
| *Ailanthus altissima* | *Humulus scandens* |
| *Ambrosia artemisiifolia* | *Impatiens glandulifera* |
| *Amorpha fruticosa* | *Impatiens parvifolra* |
| *Asclepias syriaca* | *Parthenocissus inserta/vitace* |
| *Aster novi-belgii* agg. | *Phytolacca americana* |
| *Bidens frondosa* | *Prunus serotina* |
| *Celtis occidentalis* | *Ribes aureum* |
| *Echinocystis lobata* | *Robinia pseudoacacia* |
| *Elaeagnus angustifolia* | *Rudbeckia laciniata* |
| *Elodea canadensis* | ***Solidago canadensis*** |
| *Fallopia × bohemica* | ***Solidago gigantea*** |
| *Fraxinus pennsylvanica* | *Vitis riparia* |
| *Heilanthus tuberosus* s. l. | *Xanthium* spp. |

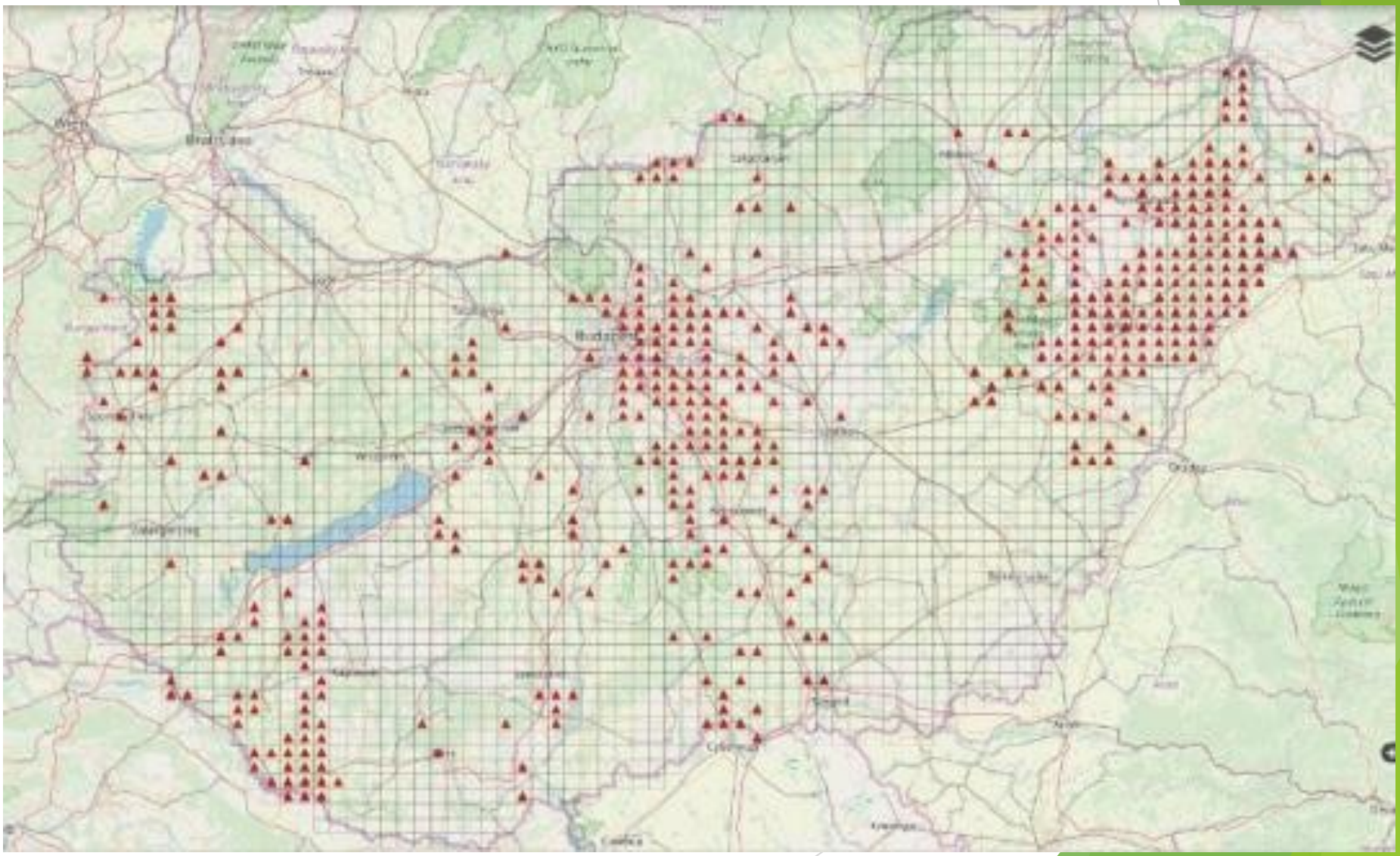
# AILANTHUS ALTISSIMA



# CELTIS OCCIDENTALIS



# PRUNUS SEROTINA



# THE REASON OF CHEMICAL USE – OUTCOME OF MECHANICAL WEED CONTROL

- Vivid resprouting from cut root fragments



# INVASIVE TREES – NEW CHALLENGE IN THE FOREST MANAGEMENT

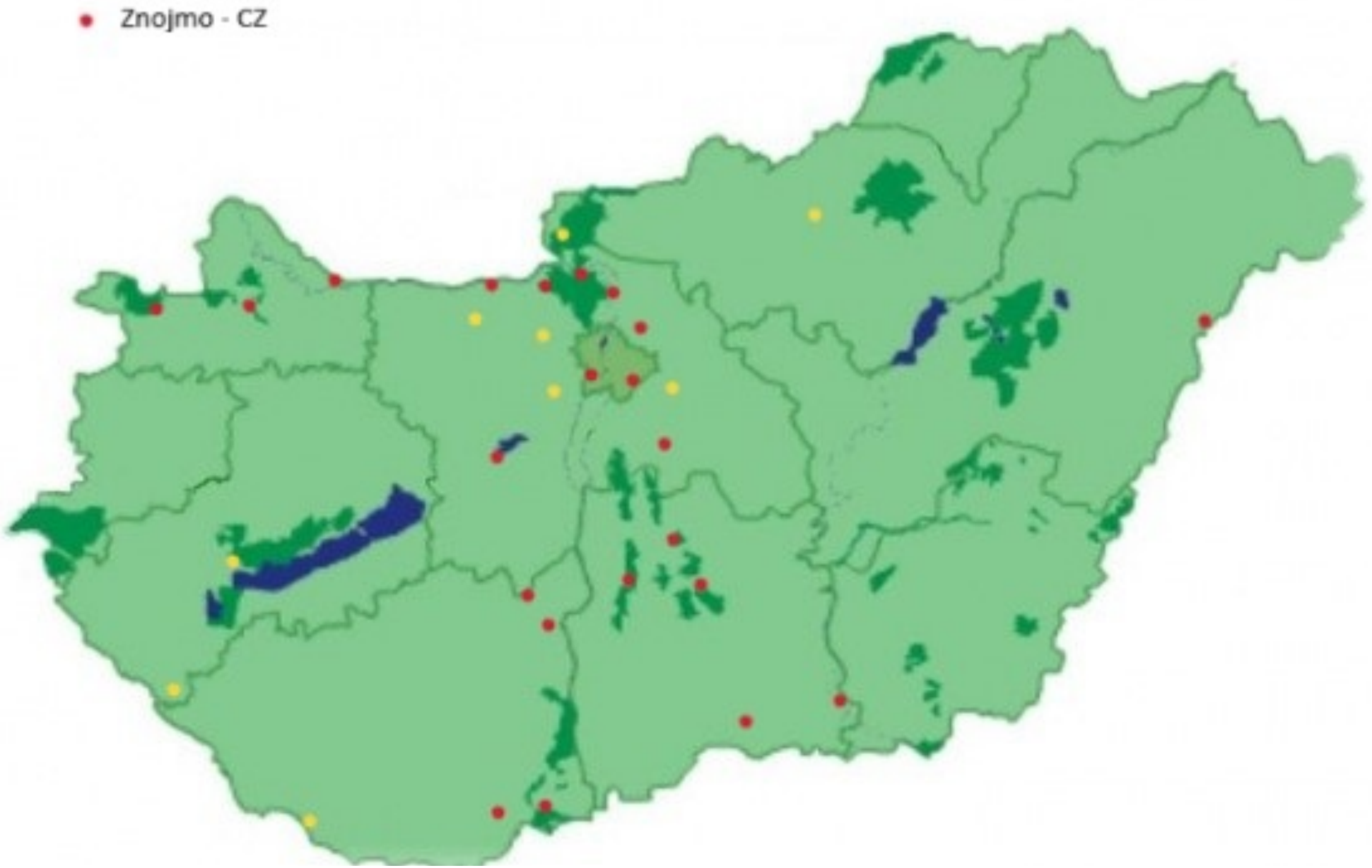
- Fast growing the domestic oak and most of the endemic species are not competitive
- The „historical” mechanical weed control does not work, but multiplies the stock
- Below a certain level proliferation the problem is not perceived



# OUR COMPANY

- Established in 1997
- Contractor for forestry chemical weed control and protected area rehabilitation
- Adaptation of agri/horticulture pesticides application techniques for forestry use
- Development of environment-friendly spot-applications
- Development and registration Invazív „adjuvant” carrying herbicide through the bark
- Servicing to forestry companies and national parks
- Working by staff of 20 employees

# RECENT INVASIVE ERADICATION PROJECTS



# FIELD TESTS
# APPLICATION DEVELOPMENTS

- Spot spraying
- Leaf painting
- Bark painting
- Stump painting
- Weed viper machines
- Tree injection
- Herbicide foam








# FIELD TESTS – ACTIVE INGREDIENTS

## (at different species, solo and combination, different season)

| | |
|---|---|
| 2,4 D | klomazon |
| aminopiralid | klopiralid |
| dikamba | MCPA |
| dimetenamid-p | metalochlor |
| flazaszulam | metszulfuron-metil |
| flazaszulfuron | mezotrion |
| floraszulam | nikoszulfuron |
| fluroxipir - meptil | proszulfuron |
| glyfosate - IPA | rimszulfuron |
| glyfosate-diammonium | terbutilazin |
| kletodim | tribenuron-metil |
| klomazon | triklopyr |











# TREE INJECTION

Utilization of chemicals in 8-10 times better than applied by other techniques like painting or spraying

High investment and labour cost, but very low herbicide usage

**Applicable:** Ailanthus, Robinia, Prunus, Celtis, Acer, Fraxinus

**Weak result:** Elaeagnus, Syringa, Amorpha

**Developed combination:** glifozat-diammonium – metsulfuron-metil in low surface tensioned water mix














2015.07.01

# BARK PAINTING

Medium chemical utilization – no drift
Low investment, medium labour cost, effective herbicide usage
Long-stitch brush

**Applicable:** Ailanthus, Prunus, Amorpha, and young seedling and freshly cut stump of thick barked species Celtis, Robinia, Acer, Fraxinus
**Weak result:** Elaeagnus, Syringa
**Developed combination**: Invazív adjuvant + glifozát-diammonium – metsulfuron-metil ready to use mixture *(called BFA technology)* (adjuvant combination with tryklopir is under development)
Invaziv adjuvant contains colorant

# DEVELOPMENT OF INVAZÍV ADJUVANT (2013 - 2020)








2015.07.10


2015.07.10







# SPOT SPRAYING – TARGET PLANT SPRAYING

Chemical utilization – drift reducement
Low investment, medium labour cost, effective herbicide usage
Short-stitch brush, young seedlings
**Applicable:** all species for max 50-60 cm seedlings

**Dosage reduction**:
Colorant (no double treatment, reduce untreated plants)
Hardness level reduction (ammonium-sulfate, Xchange)
Lipofil additives (Invazív adjuvant - contains colorant (Prunus, Eleagnus)
Superspreader (Silwet-Star) LV-spraying without special sprayers
Air-assisted nozzles reduce the drift
UV radiation reducers

glifozat– metsulfuron
glifozat – dikamba
triklopyr combinations



# HERBICIDE TREATMENT WITH COMBINATION MECHANICAL WEED-CONTROL

* Forest renewal with strong Ailanthus presence – set-a-side field – 2-3 chemical spraying - replantation in next year

* Cut – stump painting (Celtis, Prunus) and spot spraying

* Young forest cleaning – stump painting (Prunus see photo)



# SPOT SPRAYING – SELECTIVE HERBICIDES & APPLICATIONS

The wax cover of oak leaves protects the intake of herbicides above a certain surface tension

**Applicable:** oak renewals after the wax formation on the young leaves

**Possibilties**:
chlopiralid - Lontrel 300/600 ready to use formulation (Robinia Amorpha)

metsulfuron metil - Mezzo Savvy  reduces the Ailanthus-seed germination

pikloram – halauxifen-metil (Belkar)
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plenty of invasive sprouts – preset surface tensioned tank mix – technology under development

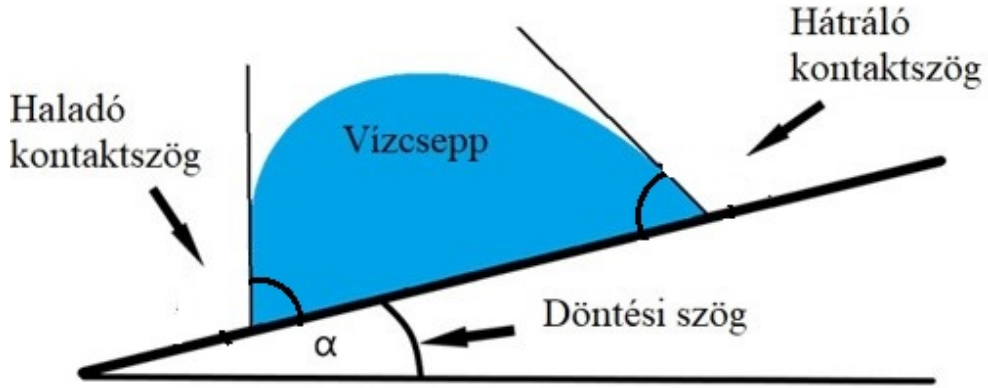




# SHAPE OF DROPLETS WITH DIFFERENT SURFACE TENSION

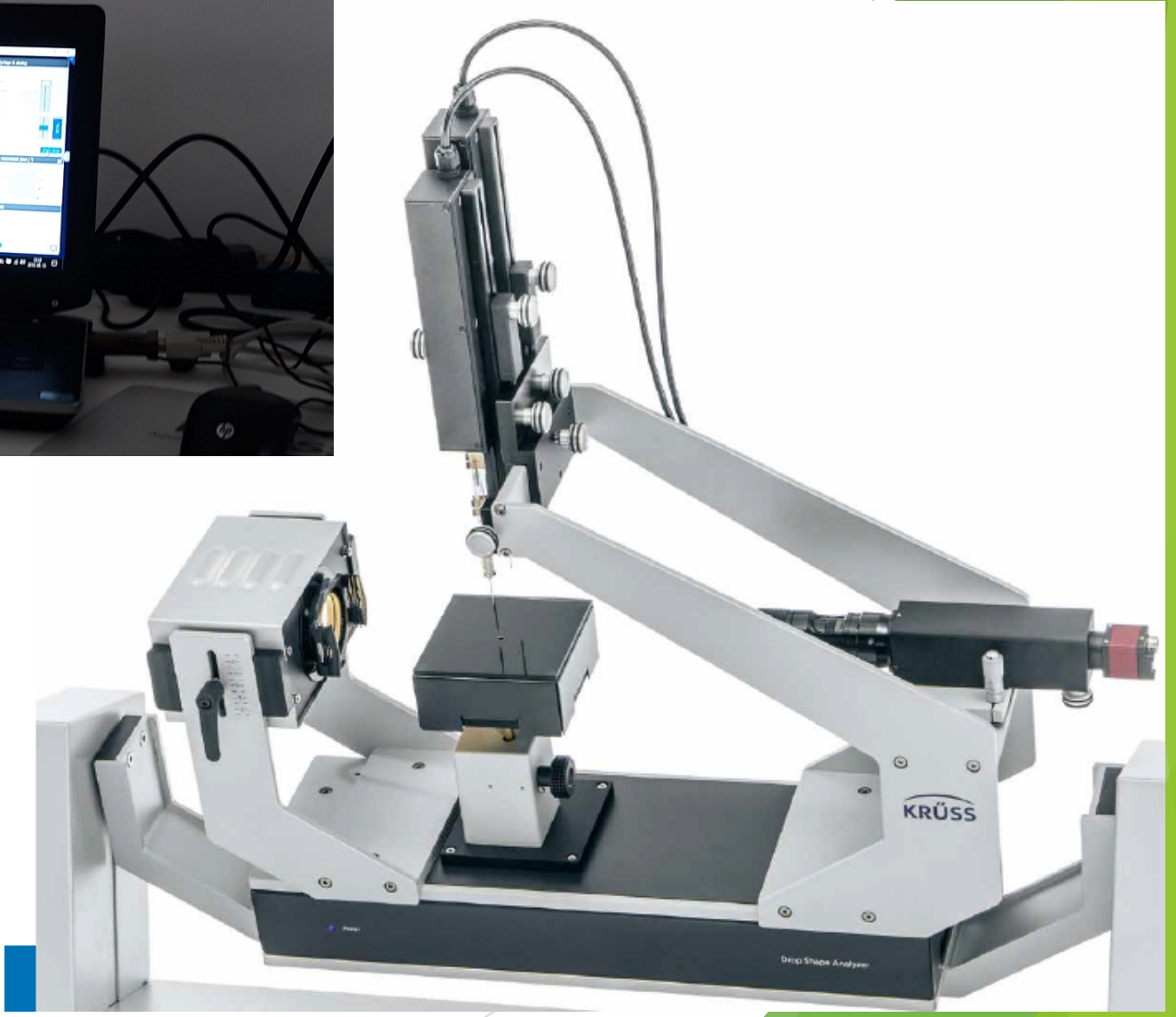






# KRÜSS DSA 25 DROP SHAPE ANALYZER



# WEED-VIPERS









# WEED KILLING FOAM APPLICATOR







# AUTHORITY ISSUES

- Invasive adjuvant is registered in Hungary. Registration can be easily transformed to other EU-countries
- Most of the technology is NOT registered by the herbicide registration process
  - minor use or minor plant extension (former off label registration)
  - emergency permit given for 120 days annually
- For field trials – experimental permit issued

# THANK YOU
# FOR YOUR ATTENTION!

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