PROGRESS

Promoting Green Deal Readiness in the Eastern Partnership Countries

Sustainable raspberry cultivation: environmentally friendly and climate-adapted practices

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March 11, 2026 **KYIV** **NULES** **PROGRESS / GREEN-HORT**

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Promoting Green Deal Readiness in the Eastern Partnership Countries

List of questions

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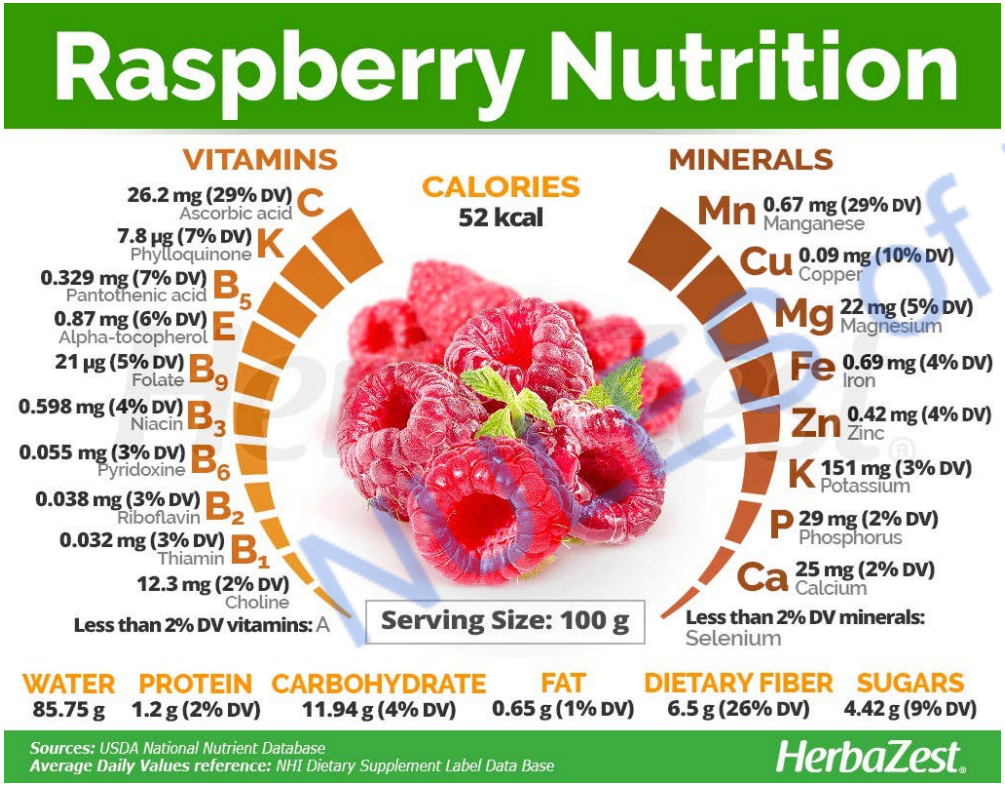
Botanical characteristics of raspberries

Red raspberry(*Rubus idaeus* L.) – A perennial shrub (a semi-shrub with a perennial root system and a biennial above-ground system) – family Rosaceae. In addition to the red raspberry, the genus Rubus includes the black raspberry (R. occidentalis), the blackberry (R. fruticosus), the Arctic raspberry (R. arcticus), and the Purple-flowered raspberry (R. odoratus).

https://polskiesuperowoce.pl/

The Nutritional and Health Benefits of Raspberries



Bright red raspberries are a powerful ally for your health:

1. High antioxidant content
2. Vitamin C strengthens the immune system
3. Improved digestion
4. Weight management (52 calories)
5. Improved heart health
6. Reduced risk of diabetes.
7. Protects the skin from harmful UV rays.

https://www.facebook.com/zhtaras

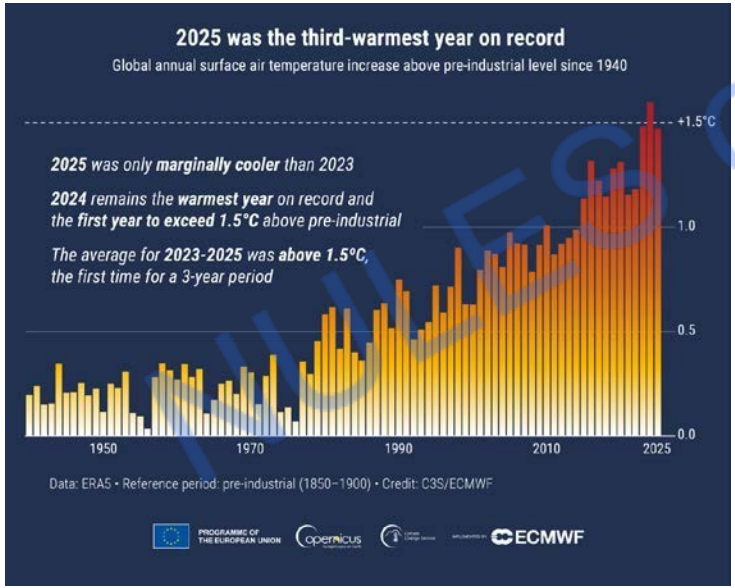
1. Climate change as a systemic risk factor in the global raspberry market

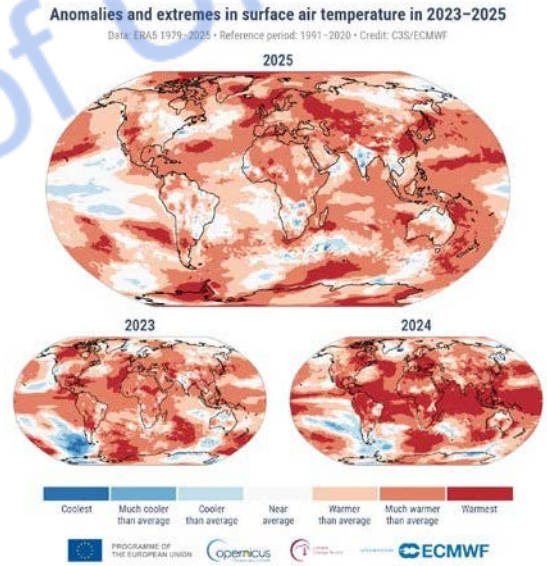
The 2015 Paris Agreement aims to “hold the increase in global average temperature well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels”

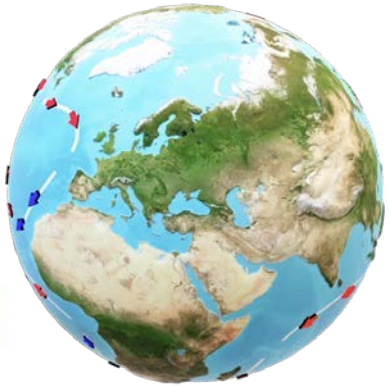
Global Climate Highlights 2025 report, compiled by the Copernicus Climate Change Service (C3S)

Climate Change as a Systemic Risk Factor in the Global Raspberry Market

Copernicus: The global average temperature over the past three years (2023–2025) was more than 1.5 °C higher than pre-industrial levels (1850–1900). This is the first time the 3-year average has exceeded 1.5 °C.





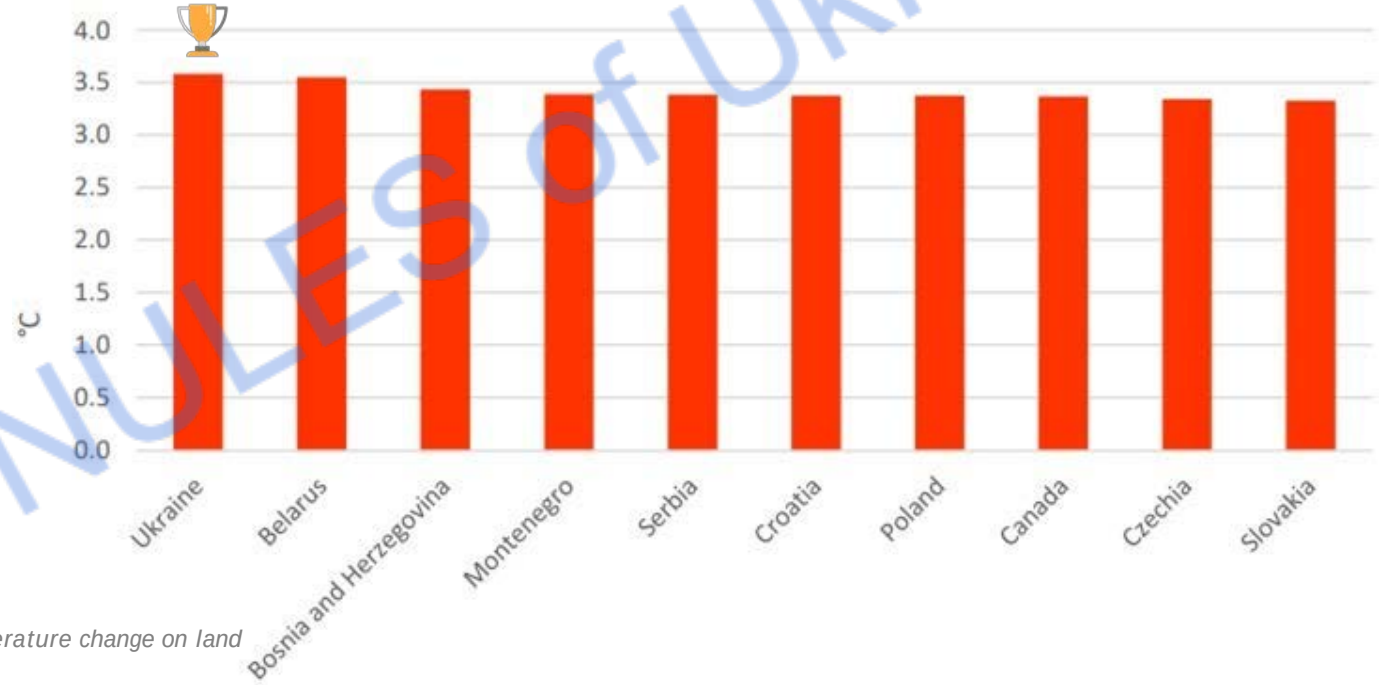


Global Climate Highlights 2025 report, compiled by the Copernicus Climate Change Service (C3S).

Climate Change as a Systemic Risk Factor in the Global Raspberry Market

Countries with the largest increase in average annual air temperature, 2024 (relative to 1951–1980

Nine out of the ten countries with the greatest warming are located in Eastern and Southern Europe, with warming of 3.3–3.6 °C



FAO. 2025. FAOSTAT: Temperature change on land

Trends in the raspberry market

The raspberry market in Europe and worldwide is undergoing a transformation:

- Health is becoming the main driver of demand for raspberries;
- Demand is shifting from fresh berries to ingredients for the dairy, baking, confectionery, and beverage industries (IQF frozen berries or freeze-dried raspberry powders);
- Fresh berries remain a premium segment with the highest prices;
- Sustainable development, eco-friendly production, reduced plastic packaging, and the “carbon footprint” have a real impact on the decisions of major buyers.

Reference: European Raspberry and Blackberry Market: 2035 Strategic Outlook

Principles of Sustainable Development

Sustainable development is evolving from a corporate social responsibility initiative into a key business criterion:

- Water resources: responsible water management;
- Integrated pest and disease management to reduce pesticide residues in berries;
- Eco-friendly packaging solutions to reduce plastic waste;
- Measuring and reducing the “carbon footprint” throughout the raspberry supply chain;
- GlobalG.A.P., SPRING, Fair Trade, and Organic certifications are becoming standard market requirements.

Reference: European Raspberry and Blackberry Market: 2035 Strategic Outlook

Key Risks in the Raspberry Business

Production	Production risks - caused by weather volatility (frost, heat waves, hail), resulting from climate change, which threatens the stability of crop yields and the cost structure!
Market	Market risks - include price volatility, exchange rate fluctuations (for trading outside the eurozone), and changes in consumer trends
Operating	Operational risks - including logistical disruptions, labor shortages for harvesting, and rising energy prices, which affect the cold chain and the costs of growing crops in a controlled environment

Reference : European Raspberry and Blackberry Market: 2035 Strategic Outlook

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Promoting Green Deal Readiness in the Eastern Partnership Countries

Climate extremes: risks for some, opportunities for growth for others...

Serbia: Traditional Technologies and the Crisis	Poland: Innovation and a Recycling Hub	Ukraine's aggressive growth
Varietal conservatism: the aging of orchards and the reliance on summer varieties (Willamette, Meeker) for IQF production make them critically vulnerable to spring frosts. **Family-run model**: many small-scale farmers with 0.1–0.5 hectares.	**Re-export:** More than 50% of the raspberries exported from Poland are actually Ukrainian berries. Poland is capitalizing on added value: packaging, branding, and logistics for the global IQF berry market.	**Technological advantage:** the vineyards are younger, and remontant varieties predominate (less risk of frost, fewer pests, more favorable temperature conditions). Production costs in Ukraine are 30–40% lower than those of competitors.
Serbian frozen raspberries are the most expensive: small plots, hand-picking, and persistent yield issues due to poor adaptation to climatic challenges and low-quality seedlings.	Exporting fresh berries to the EU and transitioning to hydroponics.A gradual shift away from commercial berry cultivation toward becoming a leading European processor and distributor.	Direct exports of IQF berries without intermediaries. Ukraine is actively entering markets that previously belonged to Poland (Germany, the Czech Republic, Austria) and is beginning to ship IQF berries to the United States and Canada.

Major raspberry-producing countries

(2020) 428,000 tons ⟹ 920,000 tons (2024)

Key players by production volume		Strategy
Country	**Volume, tons**	**Production Status and Market Segment**
Mexico	**175 538**	Fresh raspberries: shipped to the U.S. and other countries in the winter
United States	**82 080**	Meeting domestic demand and exports
Serbia	**94 026**	The EU market leader in frozen raspberries
Poland	**76 900**	Shift toward exporting fresh raspberries
Ukraine	**33 600**	Exports of frozen raspberries to the EU market
Morocco	**61 600**	Year-round exports of fresh raspberries are on the rise
Portugal	**33 420**	High-quality fresh raspberries for the EU market
Spain	**30 230**	EU Trade Hub: Imports from Morocco + Domestic Berries

Reference : faostat 2024

Raspberry Growing Techniques

- Open ground
  - Summer varieties
  - Primocane varieties
- Conventional production
- Organic production
- Home Gardening
- Commercial production
- Indoor
  - in the soil
  - in pots

Case Study: Raspberries in Tunnels (Lublin, Poland)
Dr. Paweł Kravets' Experimental Farm (HortiTeam)

Case Study: Raspberries in Tunnels (Lublin, Poland)

Soil-based cultivation on mulching fabric

Reference : https://www.jagodnik.info

Soil Health

How can you keep plants and soil healthy when growing raspberries in monoculture in tunnels over many years?

Challenges of soil-based cultivation in tunnels	Best practices for adaptation
Replantation disease (transplant disease)	***Mycorrhizal fungi***
Decline in soil fertility due to depletion of the soil microbiome	***Trichoderma spp.*** fungi clean the soil and break down organic matter
Pressure from soil pests and pathogens (weevil, late blight, verticillium wilt)	***Metarhizium*** ***Beauveria*** ***Bacillus subtilis***

Reference : https://www.jagodnik.info

Climate-adapted practices in raspberry cultivation

Protective covers (plastic sheeting + netting)

https://www.groentennieuws.nl/article/9780414/rubin-de-framboos-die-de-nederlandse-teelt-nieuw-leven-moet-inblazen/

Climate-adapted practices in raspberry cultivation

Protective covers (plastic sheeting + netting)

https://ohioline.osu.edu/factsheet/anr-0190-0

Climate-adapted practices in raspberry cultivation

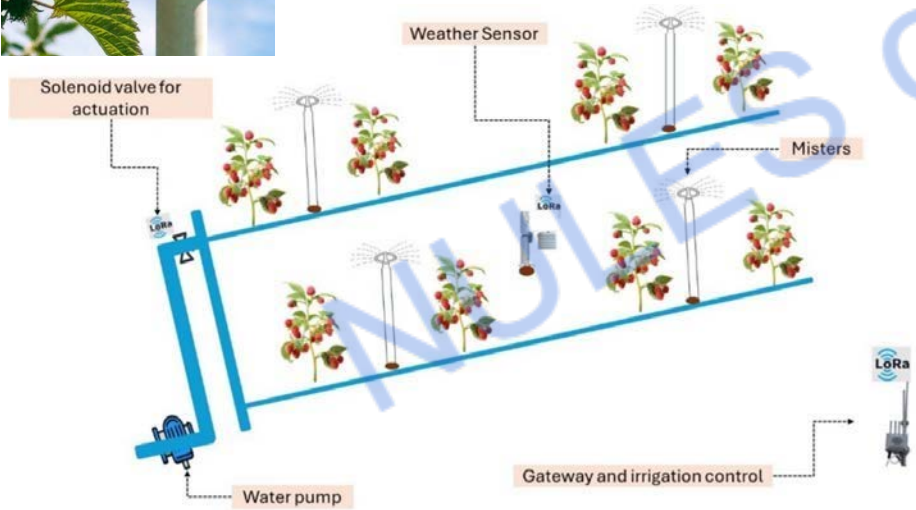
Self-propelled electric vehicle for transporting berries on the farm and seedlings in the nursery. It boosts the productivity of berry pickers, who no longer need to carry the harvested berries to the collection point. The Burro does that for them.

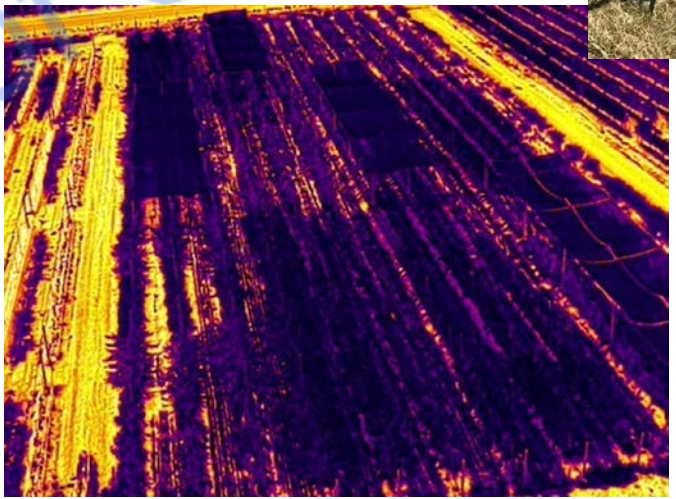
https://burro.ai/

Digitalization of Horticulture (Consortium: WSU/OSU/USDA)

LoRaWAN – Automated Irrigation

UAVs – Multispectral and Thermal Cameras





Джерело: https://extension.wsu.edu/beat-the-heat

Environmental and climate-adapted practices in open-field raspberry cultivation

Preparing for planting and soil health – green manure, compost, and biohumus.

Drip irrigation and fertilization – water conservation.

Mulching – improves raspberries' drought tolerance and helps control weeds

Adapted varieties - are drought-tolerant, winter-hardy, and resistant to diseases and pests.

Protective covers (film + nets) – for protection against extreme weather conditions

Integrated protection – the use of biological products based on fungi and bacteria instead of chemical pesticides, as well as stress relievers and organic fertilizers.

Precision horticulture - UAVs, process automation, etc.

Electric vehicles – for transporting berries via the cold chain.

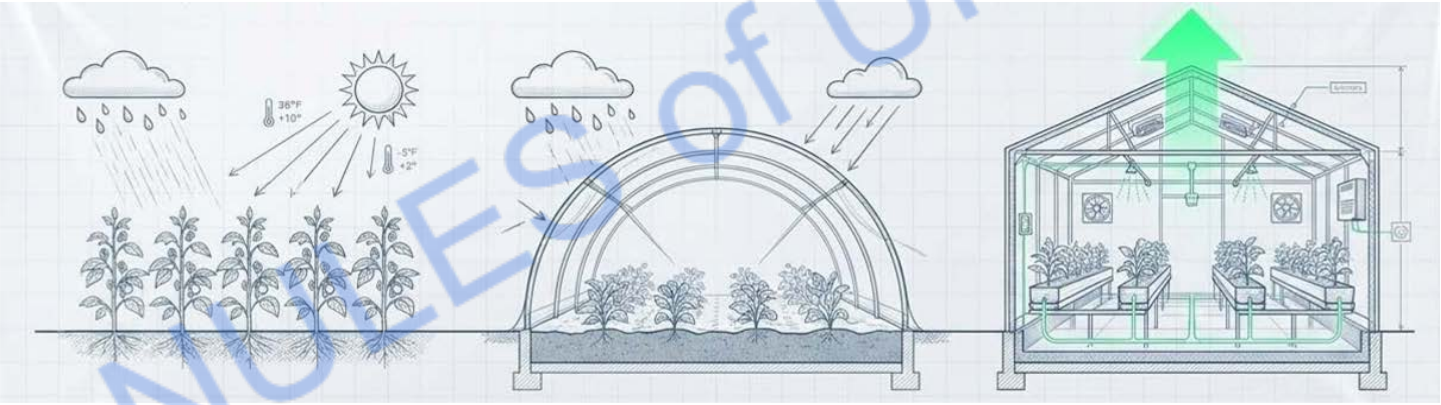
Refrigeration, logistics, and distribution of berries – HFC-free technologies (natural refrigerants: ammonia R717, CO_2 R744, etc.).

Off-grid power supply – solar panels on building roofs and agriphotovoltaics in fields.

Technological progress in the industry

Effective management of production risks requires investment in climate change adaptation technologies

Level 1: Open ground	Level 2 Plastic tunnel	Level 3 Substrate + Climate Control



Highest risk. Dependence on weather, short growing season, high risk of disease.	Moderate risk. Protection from direct rain, extended growing season, basic temperature control.	Minimal risk. Complete isolation from open ground, precise water conservation, year-round harvest.

Source: Generated using AI based on European Raspberry and Blackberry Market: 2035 Strategic Outlook

Case Study: Poland (Poznań)50 hectares of raspberries grown in hydroponic tunnels

FACEBOOK BigRed

Raspberries in Hydroponic Tunnels: The Keys to Success

- - microclimate (automated tunnel ventilation)
- - automated hydroponics (irrigation and fertigation)
- - high-quality seedlings (Long cane)
- - pots – UV-stabilized (12-year lifespan)
- - high-quality growing medium

Fertigation system:

Tank A – calcium

Tank B – sulfate-phosphate

Tank C – acid

Source: https://www.jagodnik.info; BigRed's Facebook page

Climate-adapted practices for growing raspberries in pots using growing media
Precision and drip irrigation

Daily drainage from pots: Monitoring of % moisture, EC, pH, humidity sensors, tissue diagnostics, etc. …

A monitoring station used to track daily drainage from pots (Drain) and the incoming fertilizer solution (Drip)

Reference: Lisa Rayburn, Gina Fernandez and Brian Jackson (2023), NC State University / Long Cane Production of Raspberries

General nutrition guidelines

1. Tissue analysis every 2–4 weeks to adjust nutrient levels
2. pH:
   leaf sap ~5.3, drainage water ~5.8
3. EC sum of drip + drainage:
   ~2.9–3.5 mS – vegetative growth
   ~3.6–4.2 mS – fruiting
4. K : Ca 1.5/2 : 1.0
5. Drainage: ~20–30%

The need for nutrients depends on the plant's growth stage, yield, light, and temperature.

Reference: foto Lisa Rayburn, Gina Fernandez and Brian Jackson (2023), NC State University / Long Cane Production of Raspberries Substrate Nutrition Guidelines - PSI Raspberry Varieties

Case Study: Cooperation Among Small Producers The “Faina Polyana” Cooperative (UKRAINE, Ternopil Region)

Case Study: Cooperation Among Small Producers
“Faina Polyana” Agricultural Cooperative (Ternopil Region)

OFFICE
contracts, exports

Cooperative refrigerator
berry picking, cooling, packaging, storage

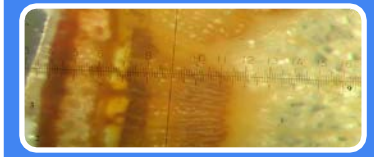
Production
Small family farms (153) – each owner owns their own land. Cost savings through bulk purchases of pesticides, fertilizers, seedlings, containers, etc.

Case Study: Cooperation Among Small Producers

“Faina Polyana” Agricultural Cooperative (Ternopil)

https://www.facebook.com/oda.te.gov.ua

2. Raspberries as a subject of climate adaptation



WINTER – Desiccation or Frost Damage?
Harsh – Frost damage to stems due to low air temperatures
Desiccation of stems - caused by strong winds during thaws
Mild – Increased pressure from pests and diseases

SPRING – Temperature Swings

An early spring with a risk of late frosts in April and May, which can damage new growth or blossoms on raspberry plants due to nighttime temperatures below 0 °C

SUMMER – Heat or Hail?
Hail, downpours, squalls, and storms can break shoots and destroy this year's and next year's harvest.
Heat – sunburn on berries and plant stress

Two biologically distinct types of raspberry varieties

Standard (summer) Floricane Varieties	Autumn (remontant) Primocane varieties
The first year of the shoot's life. **Spring:** vegetative growth cycle throughout the growing season. **Winter:** Requires chill hours in winter to initiate fruiting in the following season	**The first year of the shoot's life.** The vegetative cycle occurs during the first half of the growing season. During the second half (August–…), fruiting occurs from the top of the shoot down to the bottom. In late fall, the shoots are cut back to ground level.
The second year of the shoot's life. **Spring:** lateral shoots begin to develop on last year's stem from overwintered buds; **Summer** – fruiting on the lateral shoots; **Late fall** – after fruiting, the two-year-old stems are cut back to ground level. From the base, the plant produces new shoots	In the second year and every year thereafter, the cycle for remontant varieties repeats exactly as it did in the first year: **spring** – new shoots sprout from underground buds on the root system; **late summer** – fruiting on one-year-old shoots, starting from the tip and working downward; **late fall** – removal of all shoots that have borne fruit; only the rootstock overwinters.

Heat Stress Monitoring (Consortium: WSU / OSU / USDA) Symptoms of Heat Stress (WSU)

Figure 2. Visual symptoms of heat stress include (A) leaf wilting and curling or (B) scorched leaves, and (C) shriveled or (D) sun scalded fruit. Photos A-C by Ashley Fincham; photo D by Lisa W. DeVetter.

https://extension.usu.edu/diverseag/files/2025-usfc-files/BeattheHeatandMulching_2025.pdf

Mitigating Heat Stress in Raspberries (Consortium: WSU / OSU / USDA)

Short-term strategies: Biostimulants based on:

- glycine betaine
- brown seaweed extract (Ascophyllum nodosum)
- silicon dioxide (SiO_2)

Medium-term:

- shade nets (40–60% shading)
- mulching with plastic film and organic matter
- overhead cooling prinklers.

Long-term:

- genetic (development of heat-tolerant varieties)
- Smart Farming – sensors in the field (using LoRaWAN networks)

Reference: generated using AI based on https://extension.usu.edu/diverseag/files/2025-usfc-files/BeattheHeatandMulching_2025.pdf

Climate-Adapted Practices in Raspberry Cultivation

Raspberry Mulching – (Consortium: WSU/OSU/USDA)

Polyethylene (PE) film
Biodegradable (BDM) film.
It can increase crop yields by 31–41% in the first year.

BDM is a cost-effective alternative due to the absence of costs for removal, but there is a strict limitation: BDM cannot be used for fall planting, because it does not survive the winter (it breaks apart due to wind and precipitation).

https://extension.usu.edu/diverseag/files/2025-usfc-files/BeattheHeatandMulching_2025.pdf

G-Berries, Italy

‘Enrosidira’

‘Enrosidira’ - a remontant raspberry variety.

Flavor: sweet

Shape: elongated and conical

Color: bright red

Harvest season: fall

Average fruit weight: 8 g

Breeding program of the Institute of Horticulture, Poland

‘Przehyba’

Przehyba - a summer raspberry variety.

Flavor: sweet and dessert-like

Shape: elongated cylindrical

Color: bright red

Harvest season: June–July

Harvest type: harvested from 2-year-old canes

Average fruit weight: 9 g

http://www.brzezna.pl/malina-rubus-idaeus-przehyba/

Genetics as a Tool for Adapting to Climate Change

Modern raspberry breeding is actively adapting to climate change, ensuring the industry's sustainable development.

New raspberry varieties must withstand:

- extreme summer heat
- unstable winters and springs
- increasing pressure from pathogens and pests, under conditions of limited pesticide use.

Trends in raspberry breeding:

- everbearing varieties have become the standard in various regions of the world
- exclusive club varieties with limited access to licenses
- varieties suitable for machine harvesting
- dessert varieties with long shelf life and easy manual harvesting

Modern breeding programs in Europe

United Kingdom:

Berryworld Plus Ltd. – the varieties ‘Diamond Jubilee’ and ‘T-Plus’, as well as, in collaboration with **Five Aces Breeding LLC** in Maryland, USA, the varieties ‘Sapphire’, ‘Pearl’, and ‘Jade’.

EMRBC (East Malling Rubus Breeding Consortium) **–** a consortium operating as a semi-closed partnership: ‘Malling Bella’, ‘Malling Charm’,‘Malling Jewel’, ‘Malling Juno®’.

Netherlands: ABB (Advanced Berry Breeding) – ‘Imara’, ‘Kweli’, Kwanza’,‘Mapema’, ‘Rafiki’, ‘Shani™’, ‘Malaika®’.

Current breeding programs around the world

Italy: The wholesale nursery Vival Molari / Gberries has introduced the varieties‘Enrosidira’, ‘Easy Star’, and ‘Easy Rock’ to the market. Meanwhile, the Sant’Orsola growers’ cooperative has introduced the varieties ‘Vajolet’ and ‘Lagorai’.

Poland: The Institute of Horticulture developed the varieties ‘Polka’, ‘Polonez’, and ‘Przehyba’, as did NIWA Berry Breeding Ltd., which developed ‘Delniwa’, ‘Husaria’, ‘Baron’, ‘Magnat’, and ‘Promyk’.

Spain: Planasa has developed the varieties ‘Lupita’, ‘Adelita’, ‘Pink Hudson’, and ‘PinkRosalita®’, which are now successfully grown in Morocco for the European market during the winter months.

Raspberry varieties listed in the Register of Plant Varieties Suitable for Distribution in Ukraine (as of March 1, 2026) – 28 varieties

Advabemap, Advabereen, Advaberimar, Advabertwee, Amalia Rossa, **Brusvyana,** Glen Dee, Glen Ample, Glen Fyne, Grandeur, Delniwa, Joan J, Driscoll Maravilla, DrisRaspSix, Eros, Kokanee, Majestic, NN08002, Octavia, **Osinnia,** Poemat, Polana, Polesie, Polka, Polonez, Przehyba, **Sanya,** Wakefield

In accordance with paragraph 6 of the Procedures for Granting Grants for the Establishment or Development of Horticulture, Berry Farming, and Viticulture / Greenhouse Farming (approved by Resolution of the Cabinet of Ministers of Ukraine No. 738 dated June 21, 2022), the establishment of plantings (in orchards) and/or the cultivation of crops (in greenhouses)—in the event of funding from grant funds—must be carried out using planting material of plant varieties, information about which is entered in the State Register of Plant Varieties Suitable for Distribution in Ukraine, or the State Register of Patents for Plant Varieties (except for ornamental plants—when grown in greenhouses)

3. Raspberries – The Value Chain

Seedling Production

Long Cane
Standard
Tray

Raspberry cultivation

Selecting Varieties
Plant-Care
Harvesting

Post harvest processing and handling

Cooling
Freezing
Freeze-drying

Sales

Marketing
Certification
Export

BVB; ABB, Driscols; Octofrost

Types of raspberry planting stock

“Bare-root” – a seedling with an exposed root system
Advantages – low cost, ideal for long-term projects in open ground on limited budget
Disadvantages – lower survival rate, fruiting takes a year

Tray-grown seedling with leaves
Advantages – suitable for greenhouses.
Easy to plant, high survival rate with minimal damage to the root system. Disadvantages – requires careful maintenance (watering and fertilization)

“Long Cane” – a seedling growing up to 180 cm tall
Advantages – predictable harvest timing (~90 days). Ideal for containe based soilless cultivation in tunnels
Disadvantages – the most expensive option. Requires regular replacement every 1–3 years

Case Study: Production of Lon Cane Raspberry Seedlings

The Experience of BVB (Netherlands)

The rootstock of parent plants is used to grow cuttings (nettles) in an environment that minimizes the risk of infection (greenhouse)

Case Study: Production of Long Cane Seedlings. The Experience of BVB (Netherlands)

Root cuttings are used to grow trays, and then long canes

-0,5...
-1,5 °C

Джерело: yuotube A.M.A. Horticulture Inc

Case Study: Production of Long Cane Seedlings Using Biodegradable Paper

Ellepot is a biodegradable propagation pot made from wood fibers sourced from well-managed, FSC®-certified forests

Джерело: https://www.ellepot.com/

Stages of the Long Cane Seedling Production

1. **Propagation and young plants** (preparing the growing medium and rooting)
2. **Vegetative growth** (Shaping the bush structure)
3. **Cold Storage** (Logistics and Temperature Control)
4. **Fruiting** (Nutrition and Infrastructure)

Generated using AI based on YouTube by A.M.A. Horticulture Inc.

Raspberries grown hydroponically in growing media

Growing Raspberries

Selecting
Varieties
Care Harvesting

Photo : BVB; Driscols; Octofrost

Case Study: Ukraine, Mukachevo.
Raspberries grown hydroponically in growing media

Case Study: VIAN 2021 (Mukachevo, Zakarpattia)

Planting – place in plastic bags filled with stabilized, compressed coconut coir: just add water to the bag

Tik-Tok Vian2021

Case Study: VIAN 2021 (Mukachevo, Zakarpattia)

Biological control: introduction of the beneficial entomopathogenic mite **Amblyseius californicus** into raspberry crops to control spider mites

Reference: ProfAgroBud Facebook page

Biological control is an eco-friendly practice that allows for the production of berries free of pesticide residues.

For growing raspberries in tunnels:

Against spider mites — release predatory mites such as Phytoseiulus persimilis or Amblyseius californicus. These mites feed on the pest at all life stages.

Against aphids (Aphids) – Aphidius colemani (small wasps that parasitize aphids).

Against thrips – Orius laevigatus – a “hunting bug” that is particularly effective during the flowering period.

Against Spotted Wing Drosophila (SWD) - Ganaspis brasiliensis or Spinosad

☑ Case Study: Yagidky Agricultural Cooperative (Khmilna Village, Kyiv Region), 2025: 0.8 hectares of greenhouses dedicated to hydroponic raspberry cultivation

Джерело фото: фейсбук Анна Луцько

Case Study. SVK “Yagidki”: Cultivation of Tray Raspberry Seedlings into Long Cane Plants

Джерело: фейсбук Анна Луцько

Case Study. SVK “Yagidki”: Cultivation of Tray Raspberry Seedlings into Long Cane Plants




Джерело: фейсбук Анна Луцько

Case Study: SVK “Yagidki” – Covering Long Canes with Agrotextile for Frost Protection (Winter 2025–Spring 2026)

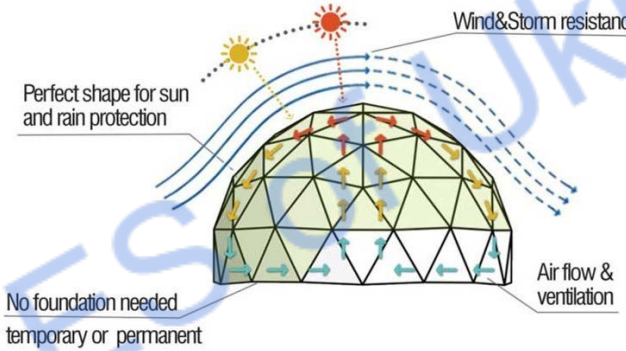
Джерело: фейсбук Анна Луцько

Sustainable and climate-adapted practices in tunnel raspberry cultivation

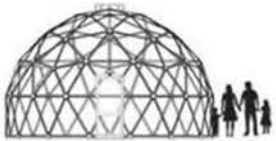
Rainwater harvesting (MiniAir FruitCover)

www.meteorsystems.nl

Environmentally friendly and climate-adapted raspberry cultivation practices in home gardens: **Geodesic dome greenhouses**



Luna 16-foot / 5-meter dome



Terra 22-foot / 7-meter dome

30-foot / 9-meter dome

Cosmos 29-foot / 9-meter dome

Джерело: https://ekodome.com/

Organic raspberry production

High price: Certified organic berries command a higher price than conventional ones.

Environmentally friendly berries: Open the door to premium markets in the EU and the US.

Preservation of soil fertility: Promotion of beneficial microflora in the soil.

Environmental stewardship: Low environmental footprint.

Complex and costly certification: audits, strict record-keeping; additional certification costs

Lower yields: yields decrease in the first few years after conversion

High proportion of manuallabor: weed control without herbicides is difficult.

Agronomist's expertise: controlling diseases and pests

Raspberries: Post-Harvest Life of the Berry and Effective Strategies for Selling the Harvest

Post harvest processing and handling

Cooling
Freezing
Freeze-drying

Sales

Marketing
Certification
Export

Фото: BVB; Driscols;

The post-harvest life of a berry

Trays for dessert raspberries (125 / 250 g) with an absorbent liner
The berry begins to ripen the moment it separates from the receptacle.

The shelf life of a berry depends on how quickly it was cooled and whether optimal storage conditions were maintained during logistics and in the retail.

RipeLocker:

Extending the post-harvest life of berries

Storing raspberries in a vacuum environment (barrel-shaped chambers)

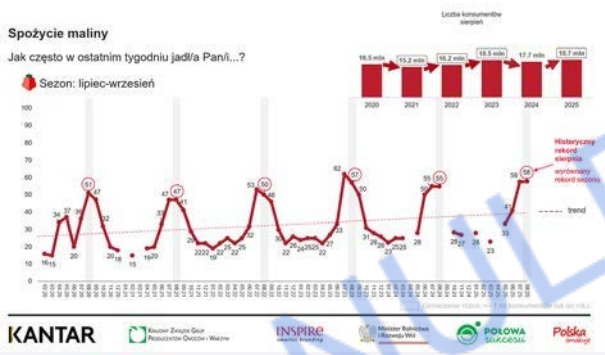
After 14 days of storage in Morocco

23 days = 14 days of storage in Morocco + 9 days of logistics in the EU

Foto: RipeLocker, Inc.

Best practices for raspberry sales: marketing campaigns in Europe

#PolishSuperFruits – a communication campaign aimed at promoting Polish berries and fruits as products with unique health benefits ("superfoods").
The campaign has been quite successful—the number of consumers is growing. It involves direct sales, "pick-your-own" opportunities, freezing seasonal berries, contests, quizzes, and recipes.



#PolishSuperFruits

Polska smakuje

https://www.cbi.eu/

Best practices for growing raspberries: Yumio®—the club brand for the Rubin variety

The brand was unveiled at FruitLogistica 2026 through a futuristic VR experience showcasing the raspberries of the future

The Yumio® brand is more than just delicious raspberries. It's about the experience, the taste, and what sets it apart.

Excellent shelf life; High yield; Easy to grow…

BrightBerries Yumio Club is a partnership club of growers and supply chain partners who work together to develop a concept for year-round raspberry cultivation based on a single quality standard.

https://www.hortidaily.com/article/9809194/yumio-raspberry-aims-to-set-a-new-quality-standard/

Best practices for raspberry cultivation: **Zero Residue** – the Sant Orsola case study

What is Zero Residue?

The concept of “zero residue” requires that products entering the market have very limited pesticide residues (≤0.01 mg/kg), i.e., in amounts that cannot be detected by the analytical instruments of accredited laboratories.

Reference : https://www.santorsola.com/

Best practices for raspberry cultivation.

Packaging: New EU Regulation

On February 11, 2025, the new Regulation on Packaging and Packaging Waste (PPWR 2025/40) entered into force in the EU, establishing strict requirements for the life cycle of packaging aimed at environmental sustainability, recyclability, and waste reduction.

The main goal is to ensure that all packaging on the EU market is reusable or recyclable by 2030.

Ukrainian raspberry growers need to adapt and implement sustainable packaging solutions that meet EU standards.

Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC

Reference: https://eur-lex.europa.eu/eli/reg/2025/40/oj

Best practices for raspberry cultivation.

Packaging: The case of Ideal Fruits (Spain)

Various eco-friendly packaging formats: R-PET plastic (made from 100% recycled plastic), cardboard, and new eco-friendly materials made from cellulose or starch.

Reference : https://idealfruits.es/

Agriphotovoltaics Case Study: Europe's largest PV berry project at the Martens van Hoof farm, featuring Fruitvoltaic's semi-transparent solar modules

https://www.baywa.com/en/about/electricity-heating-mobility/europes-largest-fruitvoltaic-project

Agriphotovoltaics Case Study: Europe's Largest PV Berry Farm Project (Martens van Hoof Farm)

24,206 semi-transparent solar modules with a capacity of 8.7 MWp above a raspberry plantation.

Photovoltaic modules protect raspberries from extreme weather conditions (intense heat or hail) and conserve water.

Unlike conventional PV panels, the semi-transparent solar modules in the Fruitvoltaic system allow enough light to reach the plants.

https://www.baywa.com/en/about/electricity-heating-mobility/europes-largest-fruitvoltaic-project

Agriphotovoltaics Case Study: Europe's Largest PV Berry Farm Project (Martens van Hoof Farm)

Agri-photovoltaics (AgriPV) helps farmers adapt to climate change while promoting decarbonization and mitigating the effects of global warming.

https://www.baywa.com/en/about/electricity-heating-mobility/europes-largest-fruitvoltaic-project

France: The Impact of Dynamic Agri-Photovoltaics (DAV) on Container-Grown Raspberry Plants

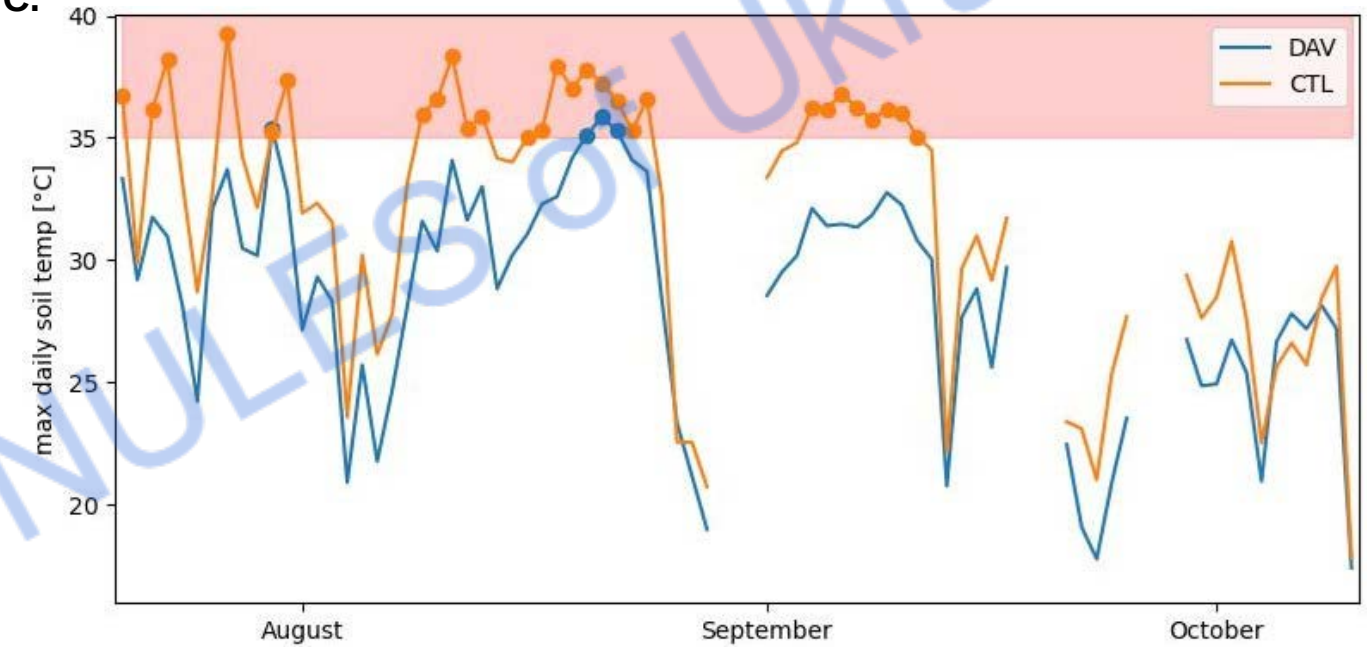
Experimental design: CTL – control tunnels with 91% light transmission, whitewashed; DAV – dynamic agrivoltaics + hail and insect netting with 25% shading.

The Impact of Dynamic Agrivoltaics (DAV) on Container-Grown Raspberries in France

2023. Seasonal patterns of maximum daily substrate temperature [°C] for dynamic agrivoltaics (DAV) and the control (CTL). The red zone indicates substrate temperatures above 35°C.

T substrate≥
35 °C

27 days
CTL4
days DAV

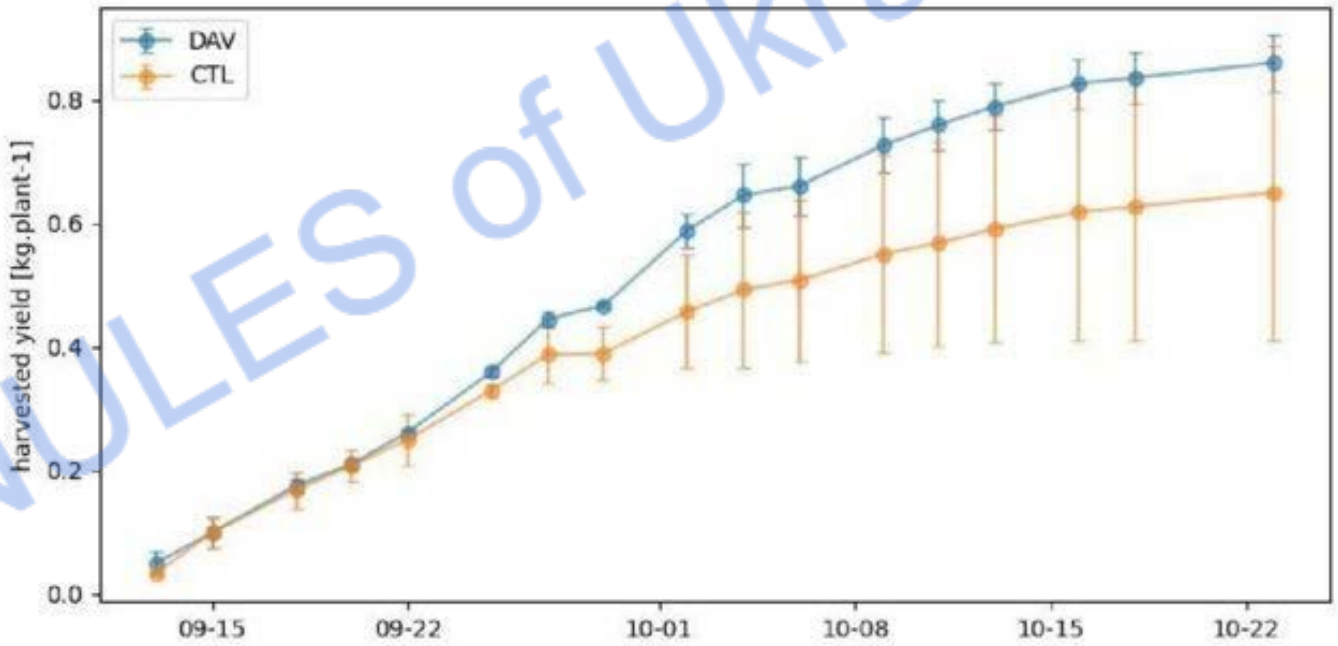


The Impact of Dynamic Agrivoltaics (DAV) on Container-Grown Raspberries in France

2023. Yield trends (kg/plant) for dynamic agrivoltaics (DAV) and the control group (CTL)

Yield:

860 г / р-на DAV
650 г / р-на CTL



SWOT Analysis of Agri-Photovoltaics for Raspberries

STRENGTHS	WEAKNESSES
Eco-branding: Berries labeled as “green” (based on ESG criteria) sell better.	**The cost of structures:** such as support towers approximately 3.0 meters tall for mounting equipment leads to an increase in the cost of the solar power plant project
Energy independence: self-generated power for irrigation, cold storage, and other needs	**Technical challenge:** Metal posts hinder the mechanization of harvesting.
Protecting raspberries: from hail, sunburn, and excessive water evaporation from the soil.	**Humidity:** risk of disease development in shaded areas with poor air circulation.
OPPORTUNITIES	**THREATS**
Profit Maximization: Generating revenue from the land through the sale of berries and electricity generation.	**Military risks:** the vulnerability of solar panels to damage.
Sale of surplus energy: the ability to sell surplus energy to the grid through the Net Billing mechanism.	**Legal uncertainty:** risks of “misuse of agricultural land” and tax revisions.
Fundraising: through government programs aimed at promoting energy independence.	**Weather anomalies:** high wind loads on tall structures.

PROGRESS

Promoting Green Deal Readiness in the Eastern Partnership Countries

THANK YOU FOR YOUR ATTENTION!

Q&A?

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