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Type

- R** Document, report
- DEM** Demonstrator, pilot, prototype
- DEC** Websites, patent fillings, videos, etc.
- OTHER**

Dissemination Level

- PU** Public
- CO** Confidential, only for members of the consortium (including the Commission Services)



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1 Publishable executive summary

The MAGIC-CROPS database will provide in a systematic way data on industrial crops such as: description of the crop, areas where it could be cultivated, agronomic practices, suitability marginal lands (facing natural constraints), harvesting and storage practices, biomass quality, products and markets. The final setting of the MAGIC-CROPS entries will provide the format and the rules for compiling the database in order to make the enclosed information easily usable in the MAGIC DSS

2 Final setting of MAGIC-CROPS entries

The final setting of the entries to populate the **MAGIC-CROPS** database will be organized into four different categories of information:

- 1) The first section will include the general information on the selected industrial crops, reporting the common name, the Latin name and a short but complete description (Fig. 1)

ID	Crop			
	Latin name	Common name	other names	short description

Fig. 1. Organization of the general information section of the MAGIC-CROPS database

- 2) The second section will provide information regarding the adaptability of selected crops to the biophysical constraints as defined by JRC (Report EUR 26940 EN) and including also contaminated and formerly contaminated land. For each biophysical constraint a score varying from 0 to 3 will be associated to each crop within each biophysical constraint (Fig. 2).

Scores are defined as following:

1= YR>50%;

2= 25%< YR <50%;

3= YR < 25%;

0= Unfeasible

YR=yield reduction compared with potential yield under non-marginal conditions

Scores will be based on literature data as well as MAGIC partner's specific knowledge/experience with selected crops under biophysical constraints.

Biophysical constraints														
Low Temp.		Dryness	Soil moisture	Soil drainage	Soil texture				Shallow rooting depth	Salinity	Sodicity	Acidity	Steep Slope	Contaminated soil
GSL<195d	GDD<1575	P/PET<0.6	FC>210d	poorly or very poorly drained	Course material >10%	sand; loamy sand >40%	Clay>50%	OM>30% (30/100 cm)	<35cm	>3.2 dS/m	>4.8 ESP	pH<5.5	>12%	soils contaminated with metals and post-mortem
score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high	score ...1 to 3 from low to high

Fig. 2. Scoring of selected crops against the biophysical constraints as defined by JRC (Report EUR 26940 EN), including also contaminated and formerly contaminated land.

- 3) The third section will report information regarding the main agronomic and physiological traits (Fig. 3) of the selected crops. This information will be collected thorough literature review and also directly from MAGIC partners owning specific knowledge of on them. Included information will be not related to the growth under marginal conditions but it would refer to general knowledge on the crops.

Cultivation under marginal land									
Propagation method	Availability of genetic material	Cardinal temp.	Cycle (annual/perennial)	Plant density (pt/m ²)	Fertilization (kg/ha NPK)	Harvesting period	Harvesting method	Potential production	Main product
seed, rhizoms, microprop.	high/medium/low					spring, fall		seeds, biomass, oil ...	oil, fibre, carbohydrates, ...

Fig. 3. Main agronomic and physiological traits to be included in the MAGIC-CROPS database.

- 4) Information regarding the current and future uses of selected crops will be enclosed in this last section. In particular future new uses for the bio-based industry will be also enclosed in the database. The industrial partners from MAGIC (Arkema and BTG) will provide information derived from their specific knowledge: Arkema – oil, BTG – fibre, multipurpose crops.

Characteristics	Current uses	Future applications

Fig. 4. Principal technological characteristics, current and future uses of the selected crops to be included in the MAGIC-CROPS database.

These MAGIC-CROPS database entries will permit a direct link to the WP2 activities, allowing easy mapping of selected crops under specific biophysical constraints. Furthermore, the final outcome of the MAGIC-CROPS will be transferred to the MAGIC-DSS for final implementation.