Contents

Reviewing and Updating the Comments of Generic Fertilization for Field Crops and Vegetables Applied on Tomato Crop

1. Introduction

This report is the response to the comments mentioned in the report number TR/CLAES/174/2000.11. The response is written in bold and italic after each comment.

2. Design Walkthrough

2.1 Domain Knowledge

- There is no difference.

2.2 Inference Knowledge

- There is no difference.

2.3 Task Knowledge

- There is no difference.

3 Design Report Versus Implementation Report

3.1 Domain Knowledge

DOMAIN ONTOLOGY

- The following properties are found in the design report but are not found in the implementation report:

Concept	Property
Ammonium nitrate	Usefulness coefficient

These properties are defined in the Fertilizer concept.

- The following properties are found in the implementation report but are not found in the design report:

Concept	Property
Soil	Soil_analysis
Water	Water_analysis

These properties are added for the sake of implementation wise.

- These source of values are different in the implementation report from that is found in the design report:

Concept	Property	VS in Design	VS in Impl.
Plantation	Expected_yield	Derived	User

This comment was corrected by deleting this property, because it's not used, since the expected yield was calculated implicitly in the rules.

Fertilizer	Usefulness_coefficient	Derived	User
Micro_element_schedule	Application_method	Not mentioned	User
Urea	For all properties	Not mentioned	User
Phosphoric_acid_75	For all properties	Not mentioned	User
Super phosphate	For All properties	Not mentioned	User

The values of these properties are inserted in the design.

	Ca_quantity	User	Derived
Soil			
	P_quantity	User	Derived
	N_quantity	User	Derived
	K_quantity	User	Derived
	Mg_quantity	User	Derived
	Fe_quantity	User	Derived
	zn_quantity	User	Derived
	mn_quantity	User	Derived
	cu_quantity	User	Derived

If the user doesn't answer these properties, they will be derived. The KROL doesn't support defining more than source of value for the same property.

Triple_super_phosphate	Usefulness_coefficient	Not mentioned	user
Triple_super_phosphate	Ratio_of_p	Not mentioned	user
Ammonium_nitrate	Ratio_of_n	Not mentioned	user
Calcium_nitrate	Ratio_of _ca	Not mentioned	user
	Ratio_of_n	Not mentioned	User
	Usefulness_coefficient	Not mentioned	User
Nitric_acid	All properties	Not mentioned	User
Potasium_sulphate	All properties	Not mentioned	User
Magnesium_sulphate	All properties	Not mentioned	User
Copper_chelate	All properties	Not mentioned	User
Organic manure	All properties except name, volume	Derived	User
Plants	All properties except name	Derived	User
Tomato	Elements	Not mentioned	User

The values of these properties are inserted in the design

- In page 18 & 19 of the implementation report, there are duplications for some properties of the plant concept.

This comment isn't true.

- The following concepts have different properties in the implementation report from that is found in the design report:

Concept
Chicken manure for meat product

The mentioned properties are defined in the predecessors in design to set the default values for those properties. In addition, the properties (p_content, k_content, ca_content, mg_content, fe_content, mn_content, cu_content, zn_content) are deleted from the implementation because the tool does not support the default values.

- The following concepts have properties in the design report but do not have properties in the implementation report.

Concept
chicken manure for egg product
cow manure
residule farm manure
horse manure
sewage sludge manure
town refuse manure
pigeon manure

These properties are inherited from their predecessors.

- The following have mentioned the limits of values in the implementation report but are not specified in the design report:

Concept	Property
Plantation	Optimum-yield
	Expected-yield
Fertilizer	Quantity
	Usefulness_coefficient
Macro_element_schedule	All properties
	All Numeric Properties
Urea	All properties
Phosphoric_acid_75	All properties
Super phosphate	All properties
Triple_super_phosphate	Usefulness_coefficient
	Ratio_of_p
Ammonium_nitrate	Ratio_of_n
	Ratio_of _ca
Calcium_nitrate	
	Ratio_of _ca
	Ratio_of_n
	Usefulness_coefficient
Nitric_acid	All properties
Potasium_sulphate	All properties
Magnesium_sulphate	All properties
Copper_chelate	All properties
Environment	All properties
Soil	All properties
Water	All properties
Organic manure	All numeric properties

Plant	All properties except name, elements & variety

The 'value source' of these properties are 'derived', so the limits values are not necessary.

- The following values are mentioned in the implementation report but are not mentioned in the design report:

Concept	Property	Values
Dripping_irrigation_macro_element	Phosphor_fertilizer_name	Phosphor_fertilizer_name
Flooding_irrigation_macro_element	Phosphor_fertilizer_name	Phosphor_fertilizer_name

This comment isn't true.

Domain Model

- There is no difference

3.2 Inference Knowledge

- There is no difference

3.3 Task Knowledge

- The following concepts are different from that are found in the ontology:

Concept	In the ontology	In the task
Phosphoric acid 75%	Phosphoric acid 75%	Phosphoric acid

This comment isn't true.

3.4 User Interface

- The following are found in the design but are not found in the implementation:

Item	In design	In implementation
The second screen	One display (soil analysis, and water analysis).	Is divided into two displays one for soil analysis and second for

		water analysis.
Label entry	Soil type	Not found

This change has been done for implementation wise.

- The following are found in the implementation but are not found in the design:

Item	In design	In implementation
Prompt display	Not found	Soil analysis
Prompt display	Not found	Water analysis
Prompt display	Not found	Total water quantity used in irrigation

This change has been done for implementation wise.

4 Implementation Report Versus Source Code

- There is no difference.

5 Testing the usability of the system

5.1 General Test

- There are no errors in the system.

5.2 Test cases

In case 3:

- The following are not described in the implementation report but found when running the system:

After entering Total water quantity used in irrigation we get the following:

1. Display dialog box to enter calcium carbonate percentage in the soil.
2. Display window to display Fertilizer Name and its quantity in kg/feddan.

This change has been done for implementation wise.