



Agricultural By-products Resources Management Survey (ABpRMS)

(English Version)



Improving Agricultural Production Systems and Conserving Natural Resources Under Climate Change in the Arabian Peninsula

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September 2021

Survey Growers Questionnaire Instrument Tool

Serial Number of questionnaire in study

GENERAL INFORMATIONS

Country

Area

Farm Owner

Contact person in Farm

Extension agent/Researcher

GH coordinates: Longitude

Farm Number

Contact number

Contact number

Contact number

Latitude

AGRICULTURAL BY PRODUCTS RESOURCES

1. Date Palm

How many Date Palm trees do you have in the farm?

Trees.....

How many Date Palm cultivars exist in the farm?

Cultivars.....

Number of trees, variety, and annual production			
	Cultivar	Number trees	Average annual production (kg/tree)
1			
2			
3			
4			

Date Palm by-product for each variety		
Cull Dates ¹ (kg/tree/year)	leaves (kg/tree/year)	Panicles/ stem

2. Greenhouse vegetable waste

Vegetable waste after harvesting the main crop (during the 2020-2021 cropping season)

	Vegetable crop	Greenhouse size (m ²)	No of green houses	Total production (kg/year)	Wasted and rejected production (kg/year)	Total waste ² (kg/year)
1	Tomato					

¹ Cull dates are those which are too hard, too small, blemished, poor appearance or infested and not good for human consumption.

² Wastes are the remaining crops, stems and leaves after harvesting inside the greenhouse.

2	Chari Tomato					
3	Cucumber					
4	Eggplant					
5	Zucchini					
6	Lettuce					
7	Strawberries					
8	Melon					
9						
10						

3. Open Field by-product

What is the main open field crop? (Exclude fodder crops)

	Crop	Area (m ²)	Total Yield (kg/year)	Total by product ³ (kg/year)
1				
2				
3				
4				
5				
6				

How you remove the remaining crop after harvest

- manually remove and burned/throw out
- manually remove and feed the animal
- Direct grazing by animal
- Mixed by soil to enhance soil fertility
- others:

4. Olive, Citrus and other Fruit Trees

Number of trees and annual production			
	Tree	Number trees	Annual production (kg/tree)
1	Olive		
2	Citrus		
3	Mango		
4	Other (specify...)		

Date Palm by-product for each cultivar		
Cull fruits ⁴ (kg/tree/year)	leaves (kg/tree/year)	Twigs (kg/tree/year)

5. Consumption/use of FARM by-products as animal feed

Do you use farm by-product to feed your livestock?

- Yes
- No

³ Include remaining crops, stems and leaves after harvesting main crop.

⁴ Cull fruits: too hard, too small, blemished, poor appearance or infested and not good for human consumption.

Farm By-products				How do you feed your livestock						
	By-product	Yes	No			Fresh	grinded	Dry	Silage	Mixed ⁵
1	Cull dates									
2	molasses									
3	Date palm lives									
4	Date palm Panicles/stem									
5	Date Palm Seeds									
6	Green house vegetable waste (Tomato)									
7	Green house vegetable waste (Cucumber)									
8	Green house vegetable waste –others									
9	Open field crop (tomato)									
10	Open field crop (cucumber)									
11	Open field – Hay									
12	Open field – other (specify....)									
13	Olive fruits									
14	Olives Leaves									
15	Olives twigs									
16	Citrus fruits									
17	Citrus Leaves									
18	citrus twigs									
19	Mango fruits									
20	Mango Leaves									
21	Mango twigs									
22	Other fruittree (Specify...)									
23										
24										

What is the reason you do not feed your livestock with farm by-products (if answer to the previous question was No)?

- Not enough produced at my farm
- Not available in the Market
- Animal don't like it
- Other reasons (please explain)
- Decrease animal productivity
- Because of agro-chemical used during the production process, not good for animal health

⁵ Mixed with other feed resources.

6. Use of Agro-industrial by-products as animal feeds

Do you use Agro-industrial by-products to feed your livestock?

- Yes
 No

	By-products	Yes	No	Average annual use (Kg)
Tomato	Pomace ⁶			
	Skins ⁷			
	Seed ⁸			
	Seed cake ⁹			
Date Palm	Date pits ¹⁰			
	Press cake ¹¹			
Olive	Crude olive cake ¹²			
	Exhausted olive cake ¹³			
	Partly destoned cake ¹⁴			
	Vegetation water ¹⁵			
Other (specify...)				

What is the reason you do not feed your livestock with Agro-industrial by-products (if answer to the previous question was No)?

- Not Available in the Market
 Animal don't like them
 Decreases animal productivity
 Because of agro-chemical used during the process, not good for animal health
 Other reasons (*please explain*)

⁶ Pomace is the mixture of tomato peels, crushed seeds and small amounts of pulp that remains after the processing of tomato for juice, paste and ketchup

⁷ Skins (peels) are a by-product of the peeling of tomatoes used for canning.

⁸ Tomato seeds are a by-product of tomato cannery, notably from the production of de-seeded canned tomatoes

⁹ Seed cake by product of tomato seed oil extraction

¹⁰ Also called pips, stones, kernels, or seeds produced in packing plants or in industrial date processing plants based on juice extraction

¹¹ Press cakes are the result of processes where dates are extracted such as for syrup and alcohol

¹² The residue of the first extraction of oil from whole olive by pressure

¹³ The residue obtained after extraction of oil from crude olive cake by a solvent.

¹⁴ The result of partly separating the stone from the pulp by screening or ventilation

¹⁵ The liquid obtained during oil manufacturing and separated by centrifugation or sedimentation after pressing

7. Fodder crops

Do you grow fodder crop at the farm?

- Yes
 No

Fodder crops production					Total use in the farm (kg/year)
	Crop	Area (Ha)	Number of cuts /year	Total Yield (kg/year)	
1	Alfalfa				
2	Clover				
3	Rhodes grass				



4	Buffel grass				
5	Corn/maize				

8. Animal Diet

What is the animal production and their feed combination (%) in the farm?

	Animal in Farm			Fodder crop (%)	Concentrate (%)	Farm by product (%)	Industrial by product (%)
	Number	Milk production (litter/day/head)	Meat production (kg/year/head)				
Sheep and Goats							
Cows (Diaries)							
Cows (Meet)							
Camels							
Chicken							
Other							

When (period) do you use by-products to feed your animals?

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Farm by-Product												
Date palm by product												
Waste date fruits												
Molasses												
Date seeds												
Date leaves												
Greenhouse vegetable waste												
Open field vegetables waste												
Other open field waste and Hay												
Olive tree by products												
Citrus by products												
Other trees by product												
Industrial By-products												
Date palm by products												
Olive by products												
Tomato by products												

9. Growers' perception

Do you have access to enough fodder crop (Buffel grass, Rhodes Grass, Alfalfa, ...) for your livestock?

- Yes, from my farm
 Yes, from Market
 No

If no, please indicate when is the period of shortage of animal feeds (in percentage %)

Fodder crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Do you have access to enough concentrate animal feed for your livestock?

- Yes

No

If no, please indicate when is the period of shortage of animal feeds (in percentage %)

Concentrate	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

In your opinion, agricultural by products:

- Very good for animal production and performance
- Not good for animal and decrease the animal productivity
- Not enough alone and need to be mixed by other fodder crops
- If mixed with other animal feed resources such as concentrate will be very good
- Makes no difference in animal productivity

Do you think agricultural by-products (farm and plants-agriculture waste/remains) are safe to be used as feeds for livestock?

- Yes
- No

Please explain

Do you think agro-industrial by-products (dates, olive cakes, etc.) are safe to be used as feeds for livestock?

- Yes
- No

Please explain

Do you think merchandizing (packing and selling) agricultural by products will contribute to improve your farm income?

- Yes
- No

Please explain

What techniques you are using to increase by-products palatability for animal feed (you can select more than one)?

- Hey ammunition or urea treatment
- Fermentation
- Silage
- Using feed block technology,
- Mixed with other feed crops,
- Mixed with other crops and concentrates

In your opinion please rank (in priority order) these techniques based on their effectiveness on improving by-products palatability

- Hey ammunition or urea treatment
- Fermentation
- Using feed block technology
- Mixed with other feed crops
- Mixed with other crops and concentrates