



## **Animal breeding and management data sets**

### **ICARDA Small Ruminant Unit sheep flock, An example of Awassi sheep selection program for milk production under dry areas condition**

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# ICARDA Flock

The flock serves research for feeding, grazing and evaluation of feed stuffs including the different agro-industrial by-products





# Flock management



- Ewes were always separated from rams
  - ▶ Mating 25 ewes per ram
- Feeding
  - ▶ The first 1/2 ration morning
  - ▶ Grazing till afternoon
  - ▶ The second 1/2 ration evening
- Wool shearing
  - ▶ Is done once in May
- Health
  - ▶ A prevention program is applied for common diseases and practices

## Flock management Cont.

- Data collection started 2003 till 2011
- Average flock size 350 head
- Animal culling passed on production
  - ▶ Milk production threshold 100 kg per season after weaning
  - ▶ Ewes that do not lamb for the second time (low fertility)
  - ▶ Ewes age 6 years



*In Total around 21000 entry is collected*

# Data Collection

Different forms to collect data were developed

- Mating records
- Animal performance records
  - ▶ Weight at mating
  - ▶ Weight at lambing
  - ▶ Weight at weaning
  - ▶ Weight at drying
- Lambing records
  - ▶ Sex
  - ▶ Lamb weight from birth till weaning (weekly)
- Milk records
  - ▶ Duration of milking
  - ▶ Milk Production (weekly from weaning till drying)
  - ▶ Milk composition (weekly from weaning till drying)

	A	B	C	D	E
1				Date	التاريخ
2				Morning milk	<input type="checkbox"/> حليب صباحي
3				Evening milk	<input type="checkbox"/> حليب مسائي
4	No	Ewe No	Milk quality	Sample No	Remarks
5	الرقم	رقم النعجة	كمية الحليب	رقم العينة	ملاحظات
6	1				
7	2				
8	3				
9	4				
10	5				





# Data management

- All data are stored in Microsoft® Excel® format
- Different production indicators are calculated based on the raw data

# Data cleaning and validation

- Animal data and recording should be in regulation with International Committee for Animal Recording (ICAR)
- Entries should be checked (Below rose color entry is a problem)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
1			Filter order	Check		B=Begin						Check														
2			ewe	#VALUE!		E=End			Calculation	0		0						Calculation		0	0	0	0	0	#VALUE!	
3			date			X																				
4			Sample																							
5										Milk production (g)					%				Daily production (g)							We
6		Yea	Date	Check	Sample	Stage	Ewe	Birth	Breed	M	E	check	Bat	Sample	Fat	Protein	Lactose	TS	SnF	Milk	Fat	Protein	Lactose	TS	SnF	
20109		2011	04-05-11	7	1830		224			700	430	0	11019	1830	5.25	5.08	4.34	15.38	10.13	1130	59.325	57.404	49.042	173.794	114.469	
20110		2011	11-05-11	7	1993		224			670	360	0	11029	1993	5.54	4.98	4.71	15.93	10.40	1030	57.062	51.294	48.513	164.079	107.12	
20111		2011	16-05-11	5	X	E	224			0	0									0	0	0	0	0	0	
20112		2011	01-03-11		60	B	225			370	220	0	11006	60	4.58	6.28	4.87	16.43	11.85	590	27.022	37.052	28.733	96.937	69.915	
20113		2011	08-03-11	7	117		225			490	310	0	11009	117	4.97	6.11	5.24	17.03	12.05	800	39.76	48.88	41.92	136.24	96.4	
20114		2011	15-03-11	7	343		225			320	200	0	11010	343	4.16	5.79	4.98	15.63	11.47	520	21.632	30.108	25.896	81.276	59.644	
20115		2011	23-03-11	8	478		225			350	250	0	11011	478	4.95	6.24	5.09	16.99	12.04	600	29.7	37.44	30.54	101.94	72.24	
20116		2011	30-03-11	7	797		225			350	170	0	11012	797	4.93	5.82	4.93	16.37	11.44	520	25.636	30.264	25.636	85.124	59.488	
20117		2011	06-04-11	7	868		225			200	190	0	11013	868	5.20	5.79	4.59	16.28	11.09	390	20.28	22.581	17.901	63.492	43.251	
20118		2011	13-04-11	7	1148		225			210	110	0	11013	1148	5.62	5.81	4.11	16.24	10.62	320	17.984	18.592	13.152	51.968	33.984	
20119		2011	20-04-11	7	1267	E	225			140	130	0	11016	1267	4.41	5.23	4.01	14.35	9.94	270	11.907	14.121	10.827	38.745	26.838	

- Check for empty entries
- Zero in the data set is a number that has a meaning and can affect calculations like average
- Missing data is reflected as an empty cell in Excel®

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1			Filter order	Check		B=Begin						Check							
2			ewe	#VALUE!		E=End			Calculation	0		0							Calculation
3			date			X													
4			Sample																
5										Milk production (g)									
6		Yea	Date	Check	Sample	Stage	Ewe	Birtl	Bree	M	E	check	Bat I	sample	Fat	Prote	Lacto	TS	Snf
3466		2004	18-05-04	7		E	537		SxS	0		0							
3477		2004	18-05-04	7		E	539		SxTxS	0		0							
3692		2004	10-08-04	7		E	572		SxT	0		0							
3952		2004	10-08-04	7		E	844		TxT	0		0							
8858		2007	29-05-07	7	no		113		SS		420	#VALUE!							
9353		2007	26-06-07	7	no	E	143		STT	0	0	#VALUE!							
9796		2007	19-06-07	7	no	E	166		SS	0	0	#VALUE!							



- Numbers are validated
- The example below shows the a wrong number under milk solids not fat (rose cell) that affect the calculation od daily production of SNF (red font). Cell should be deleted

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y				
1			Filter order	Check		B=Begin						Check																	
2			ewe	#VALUE!		E=End			Calculation	0		0							Calculation	0	0	0	0	0	#VALUE!				
3			date			X																							
4			Sample																										
5										Milk production (g)										%					Daily production (g)				
6		Yea	Date	Check	Sample	Stage	Ewe	Birth	Bree	M	E	check	Bat I	Sample	Fat	Prote	Lacto	TS	Snf	Milk	Fat	Protei	Lactos	TS5	SnF				
15536		2009	21-04-09	7	461		293			410	330	0	9033	461	6.94	5.09	5.04	17.77	0.83	740	51.356	37.666	37.296	131.498	6.142				
23392																													
23393																													

# Cleaned data

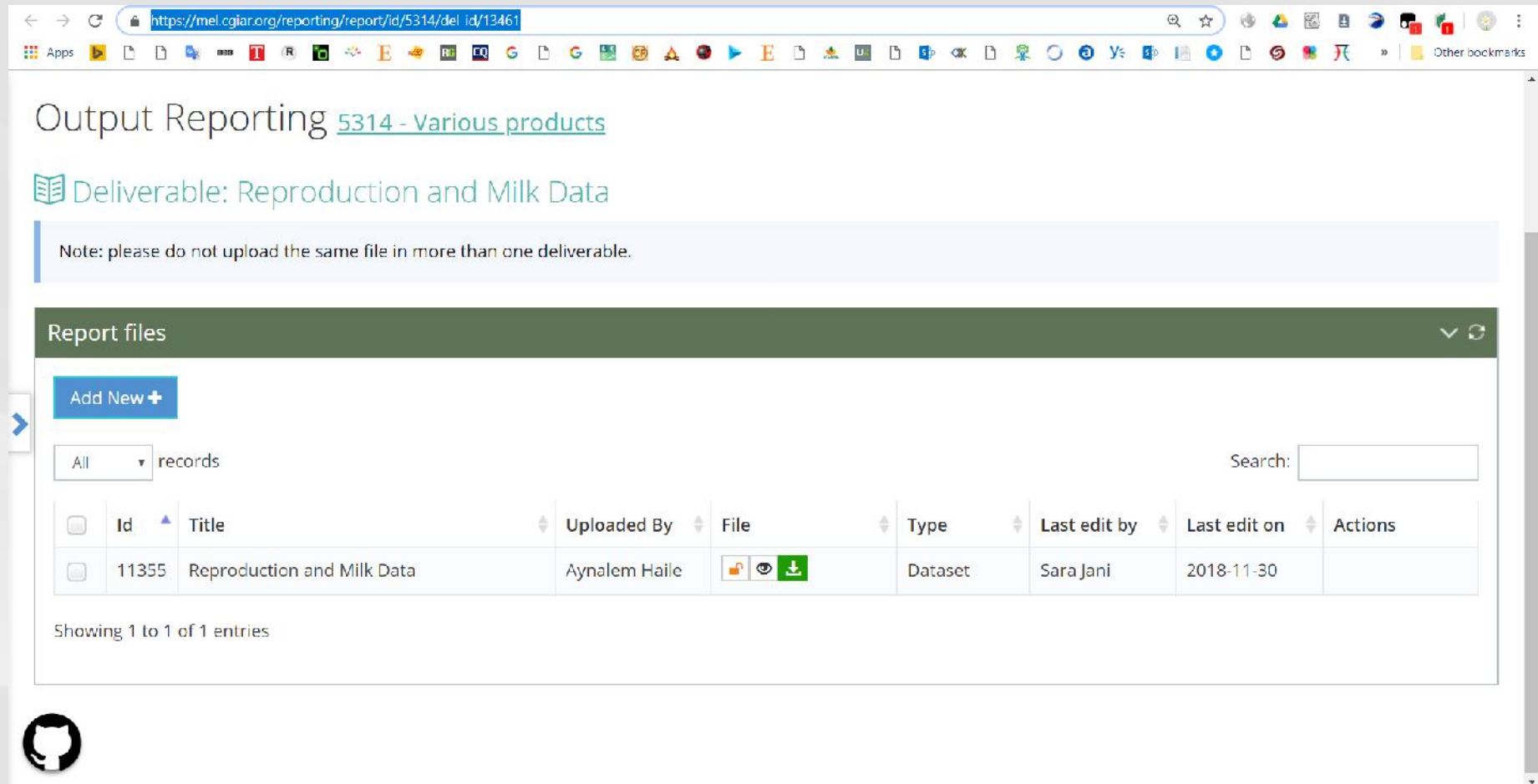
Beginning of  
production

End of production


	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2					Accumulated Production (kg)							Average production (kg)		
3		Year	Stage	Ewe	DIM	Milk	Fat	Prote	Lactos	TS	SnF	AILY M	Daily fat	aily pro
21198	22772	2011	E	9088	126	116.690	6.282	6.834	6.092	20.024	13.742	0.926	0.050	0.054
21199	22774	2011		9089	7	7.140	0.316	0.407	0.403	1.177	0.860	1.020	0.045	0.058
21200	22775	2011		9089	14	14.070	0.629	0.823	0.787	2.338	1.709	1.005	0.045	0.059
21201	22776	2011		9089	21	20.195	0.961	1.169	1.122	3.394	2.433	0.962		
21202	22777	2011		9089	28	26.215	1.295	1.501	1.453	4.433	3.138	0.923		
21203	22778	2011		9089	35	32.375	1.639	1.835	1.798	5.500	3.860	0.925		
21204	22779	2011		9089	42	38.745	1.995	2.179	2.156	6.602	4.606	0.923	0.048	0.052
21205	22780	2011		9089	49	44.345	2.378	2.481	2.463	7.635	5.255	0.905	0.049	0.051
21206	22781	2011		9089	56	50.155	2.782	2.789	2.780	8.704	5.920	0.896	0.050	0.050
21207	22782	2011		9089	63	56.140	3.152	3.107	3.109	9.763	6.609	0.891	0.050	0.049
21208	22783	2011		9089	70	61.040	3.482	3.373	3.376	10.660	7.176	0.872	0.050	0.048
21209	22784	2011		9089	77	65.100	3.810	3.602	3.589	11.459	7.646	0.845	0.049	0.047
21210	22785	2011		9089	84	69.510	4.131	3.855	3.823	12.297	8.163	0.828	0.049	0.046
21211	22786	2011		9089	91	74.480	4.453	4.141	4.090	13.207	8.751	0.818	0.049	0.046
21212	22787	2011		9089	98	78.540	4.732	4.377	4.305	13.965	9.230	0.801	0.048	0.045
21213	22788	2011		9089	105	82.110	4.997	4.586	4.492	14.652	9.652	0.782	0.048	0.044
21214	22789	2011		9089	112	85.820	5.263	4.808	4.687	15.361	10.095	0.766	0.047	0.043
21215	22790	2011	E	9089	119	88.165	5.450	4.952	4.809	15.830	10.377	0.741	0.046	0.042
21216	22792	2011		9091	7	10.640	0.573	0.537	0.558	1.743	1.170	1.520	0.082	0.077
21217	22793	2011		9091	14	21.595	1.131	1.081	1.148	3.512	2.381	1.543	0.081	0.077
21218	22794	2011		9091	21	32.355	1.657	1.600	1.700	5.370	3.710	1.500	0.070	0.080

# Deposit the data set

- The data was uploaded to MEL



Output Reporting [5314 - Various products](#)




 Deliverable: Reproduction and Milk Data

Note: please do not upload the same file in more than one deliverable.


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<input type="checkbox"/>	11355	Reproduction and Milk Data	Aynalem Haile	  	Dataset	Sara Jani	2018-11-30	

Showing 1 to 1 of 1 entries





# Publishing of results

- Data are statistically analyzed
- Results are discussed
- Results are presented for the scientific community by presenting in conferences or publishing a paper





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### EVALUATION OF AWASSI SHEEP GENOTYPES FOR GROWTH, MILK PRODUCTION AND MILK COMPOSITION

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# Estimates of genetic parameters and genetic trends for growth, reproduction, milk production and milk composition traits of Awassi sheep

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# Good practices

- Applauding data sets to the depository system
  - ▶ Generate the DOI which can be used later in publication
    - Bring more visibility to work done
    - Ensure citation of data sets particularly when is open access
- In our case this was not done due to the fact That the system was still under development
  - ▶ Awareness on this point should be discussed to be presented to the large community



*Thank you*