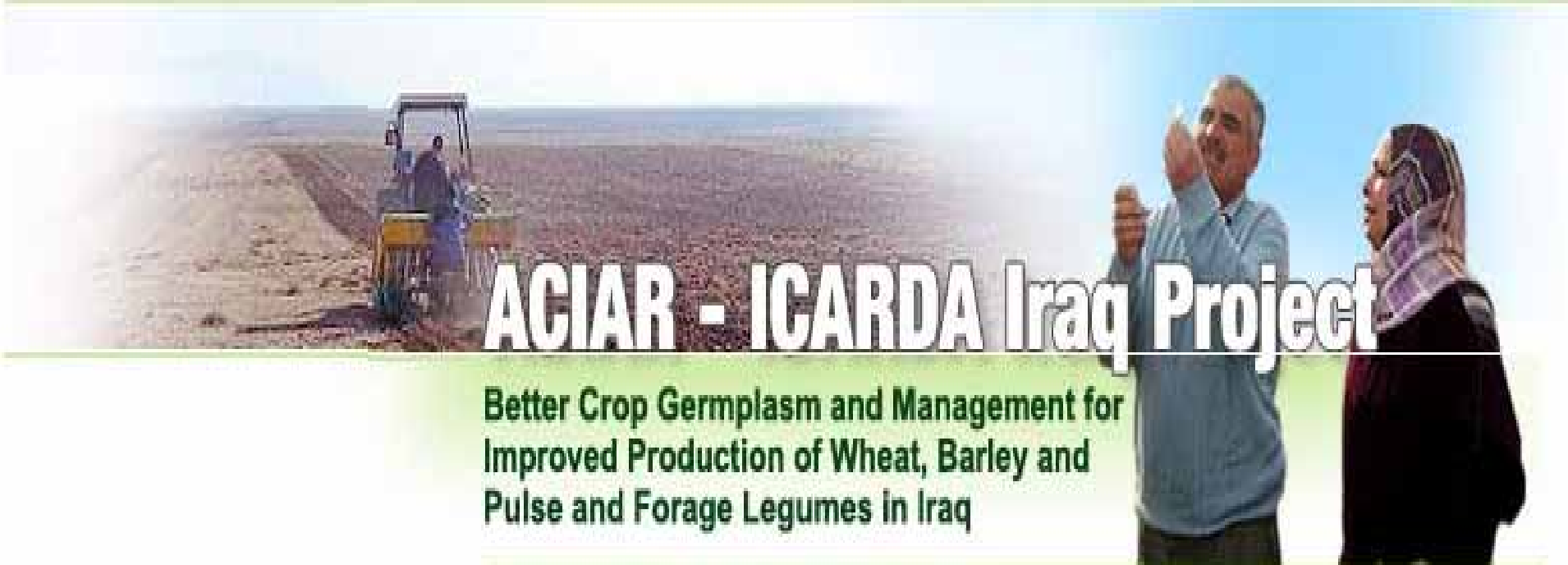


Australian Government
Australian Centre for
International Agricultural Research



Department of Agriculture and Food
Government of Western Australia



ACIAR - ICARDA Iraq Project

Better Crop Germplasm and Management for
Improved Production of Wheat, Barley and
Pulse and Forage Legumes in Iraq

Legumes Demonstration 2006 -2008

Dr. Kasim K. Kasim

and staff of Ninevah agriculture Directorate

Forage Legumes Demonstration

Objectives:

- **1: to increase the productivity of wheat and barley by introducing legumes in crop rotation.**
- **2:to introduce forage legumes as vetch for increasing forage productivity .**

Materials and Methods

- Forage legumes activities in LRA and MRA are shown in the following tables.

Results

2005-2006

Table (1) :

a- Mean of dry matter yields (Kg/ha) of barley/ Vetch mixture and its utilization at three locations under limited rainfall area (200-350mm) for the growing season 2005/2006 .

Characters	Locations		
	Tel – Abta (272mm)	Hatra (237.5mm)	Mahalabia (434mm)
Dry matter	1062 (barley + V.S.IPA2001) 1840 (barley + couhak)	1880 (barley + V.S.IPA2001) 1330 (barley + V.S. 713)	1790 (barley + V.S.IPA2001) 1812 (barley + V.n . Velox)
Utilization	Sheep grazing	Sheep grazing	Sheep grazing

b – Mean of height of plant (cm) and number of branches or tillers / plant of barley/ Vetch mixture .

Characters	Locations								
	Tel – Abta			Hatra			Mahalobia		
	Barley	V.S IPA2001	V.n Couhak	Barley	V.S IPA 2001	V.n Couhak	Barley	V.S IPA 2001	V.n .Velox
Height of plant	40	15	17	50	33	28	50	25	63
No. branches/ plant	4	1	3	4	2	3	5	2	2

Note :

V,n .Vicia narbonensis

V . S . Vicia sativa

Barley . two – rowed black (local)

Table (2) :

a- Mean of dry matter and seed yields (Kg/ha) of barley/vetch at two locations under moderate rainfall (350 – 450mm) for the growing season 2005/2006

Characters	Locations	
	Hamdanyia (548mm)	Telkeif (462.5 mm)
Dry matter	4528 (barley + V.S. IPA2001)	5180 (barley + V.S. IPA2001)
Seed yield	1280 (mixture)	600 (mixture) delay in harvesting

b – Mean of height of plant (cm) and number of branches or tillers / plant of barley/ Vetch mixture .

Characters	Locations			
	Hamdanyia		Telkeif	
	barley	V.S.I PA2001	barley	V.S.I PA2001
Height of plant	68	59	74	65
No. branches/ plant	2	2	4	3

Note :

V,n .Vicia narbonensis

V . S . Vicia sativa

Barley . two – rowed black (local)

Table (3) :

a- Mean of dry matter and seed yields (Kg/ha) of barley/ vetch mixture at three locations under moderate rainfall (350 – 450mm) for the growing season 2005/2006

Characters	Locations					
	Bashiqa (349 mm rainfall)		Hamdanyia (548mm)		Telkeif (462.5 mm)	
	V.S.IPA 2001	V.n.velox	CV. couhak		L.S.587	L.S.Ali-bar
Dry matter	5726	5228	3621		4276	4020
Seed yield	820	700	1700		1080	1040

b – Mean of height of plant (cm) and number of branches / plant

Characters	Location					
	Bashiqa (349 mm)		Hamdanyia		Telkeif (462.5 mm)	
	V.S.IPA 2001	V.n.velox	CV. couhak		L.S.587	L.S.Ali-bar
Height of plant	65	75	90		76	62
No. branches/plant	2	1	2		2	2

L.S. Lathyrus sativus , V . S .
 Vicia sativa , V . S . Vicia
 narbonensis

Results

2006-2007

Table(1): The amount of rainfall (mm.) and its monthly distribution for the growing season 2006/2007 at different locations:

months	Limited rainfall area			Moderate rainfall area			
	Mahalabia	Tel- Abta	Hatra	Telkief	Hamdanyia	Bashiqa	Mosul centre
October	102	38	33	43	63	19	27
November	3	27	-	40	23	15	10
December	30	17	11	53	30	34	45
January	29	22	23.5	32.5	37	26	23
February	66	61	35	68.5	142	44	81
March	14	13	4.5	34	40	23	31
April	29	9	7	35.5	40	37	34
May	-	-	-	-	46	-	7
	273	187	114	306.5	381	198	258

Source: Ninavah Agriculture Directorate

*

Table(2): Mean of dry matter yield of mixture (kg/ha) , height of plant (cm.) of common vetch and its utilization at three locations for the growing season 2006/2007

Characters	Locations		
	Tell- abta (187mm.)	Hatra (114mm.)	Mahalabia(267mm.)
Dry matter Yield	201	176	350
Height of plant	8	8	12
Utilization	Sheep grazing	Sheep grazing	Sheep grazing

Table (3): Mean of dry matter, biological and seed yields(kg/ha) and height of plant (cm) of vetches and lathyrus at Telkief location for the growing season 2006/2007

Species	Dry matter yield	Biological yield	Seed yield	Height of plant
Vicia sativa L.	891	2905	780	30
Vicia dasycarpa Ten.	658	2611	591	34
Lathyrus sativus	838	3372	856	32

2007-2008 Growing season

- **No** cultivation of **forage legume demonstration** activities under limited and moderate rainfall areas because of dry weather, which dominated the season.
- **As research program**, eight selected lines of common vetch was cultivated on 27th November 2007 at Al-Rasheedia Research station.
- Seeds of these lines were germinated on 25th February.
- There will be **no chance** for these vetch plants **to complete its life cycle** because of severe drought.

Food Legumes Demonstration

Chickpeas , Fababean , Lentil

The sowing date and seeding rate and fertilizer

Crop	Sowing date	Seeding rate Kg/dounm	Fertilizer Kg/dounm
Winter chickpeas	15/1/2007	30	15 Dap
Spring chickpeas	9/3/2007	30	15 Dap
Fababean	12/1/2007	40	15 Dap
Lentil	18/1/2007	30	15 Dap

The seed yield (kg/dounm) of five cultivars of chickpeas at Alqush location

Cultivars	Planting method	Area /Dounm	Production (Kg)	Seed yield (Kg/ Dounm)
Winter chickpea				
Philip197	Chisel	0.75	100	133
Dijla	Chisel	1.5	165	110
IPA510	Disk	6	2100	350
Ghab 4	Disk	12	3125	260
Local	Disk	12	0	0
Spring chikpea				
Dijla	Disk	1.5	225	150
IPA510	Disk	2	350	175
	Z.T	2	300	150
Ghab 4	Disk	8	1600	200
Local	Disk	8	0	0

Seed yield of two cultivars of faba bean at Al-Sheekhan location

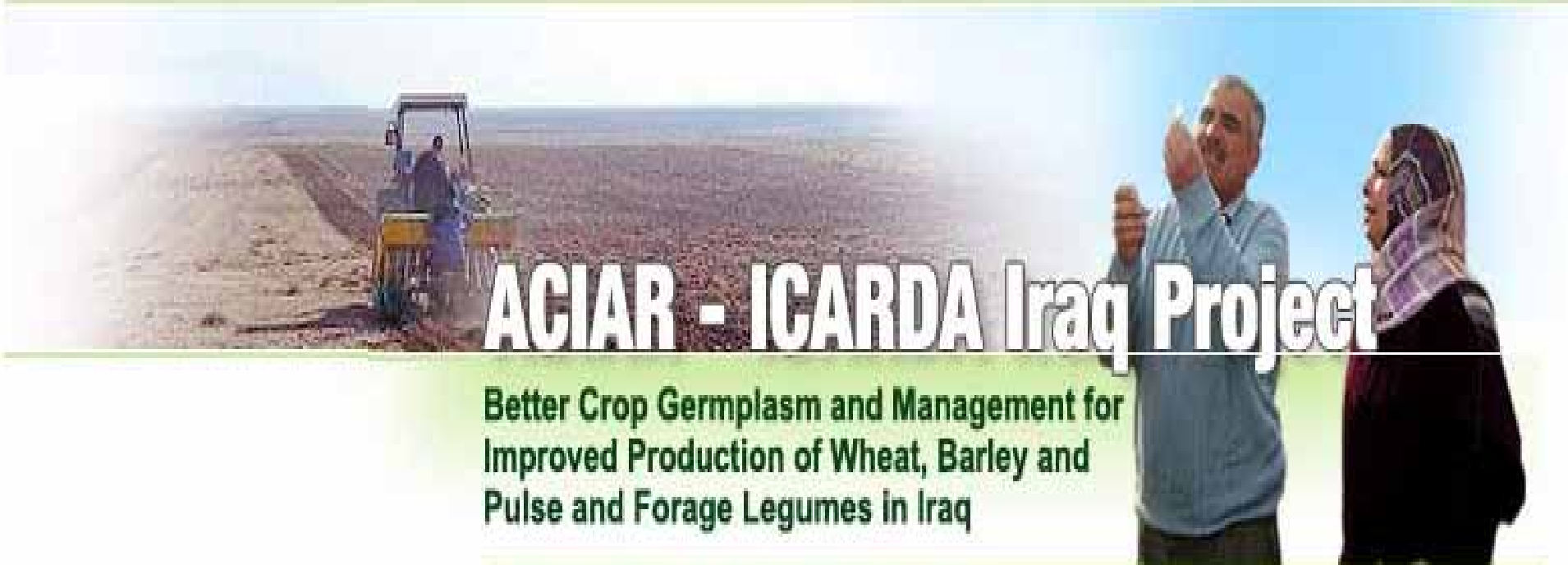
Cultivars	Planting method	Area /Dounm	Production (Kg)	Seed yield (Kg/ Dounm)
Akwadlji	Chisel	4	110	28
	Control	4	120	30
	Con.	2	45	22.5 propagation
ILB 1814	Chisel	1.5	55	37
	Control	1.5	59	39.3



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Suggested for the next stage of the project

Demonstration activities:

Dr. Kasim K. Kasim & Staff of Ninevah DOA
Agric. Research Dept.

Title-1: Introduction of forage legumes to
rainfed areas

Objectives:

- To secure forage for animals
- To increase the productivity of cereal crops as wheat and barley through the crop rotation .

Region: moderate rainfall area (200-400 mm).

Title-2: Hay making:

Crop: mixture (75% common vetch + 25% barley)

Area: 1 hectare for each location.

Seeding rate : 120 kg/ha

Date of sowing : November

Locations: Telkeif and Bashiqa

Requirements for hay making are:

- bailer
- mower
- Rake
- Twine

Title-3: Expansion the activity of introducing
lathyrus Sativus L and *Vicia sativa L.*

Varieties: Ali-bar and 587 for *lathyrus*.

IPA 2001 for common vetch.

Area: 4 ha each

Seeding rate: 120 kg/ha.

Date of sowing: November

Location: Telkeif and Bashiq

Research Report

Comparison between 16 lines of common Vetch(*Vicia sativa* L.) at AL-Rashidiya research station for the growing season 2006/2007 .

Lines	DFLR days	DMAT days	PTHT(cm.)	YLD(2.1m2)	BYLD(2.1m2)	Wt100 seed(gms.)
1	124	159	49	329	671	5.95
2	130	162	16	67	221	2.95
3	133	168	58	297	814	4.10
4	122	160	42	284	643	5.75
5	135	170	49	176	345	5.20
6	133	167	40	216	695	4.30
7	127	160	46	344	801	5.10
8	134	170	41	184	307	4.40
9	124	160	39	226	493	5.15
10	134	169	46	232	380	4.85
11	133	169	41	207	446	5.10
12	132	161	46	193	398	6.05
13	135	169	41	196	404	5.25
14	131	167	39	208	463	5.71
15	126	163	42	212	316	6.75
16	121	153	30	284	471	5.60

Selected lines	DFLR (days)	DMAT(days)	PTHT(cm.)	YLD(2.1 m²,gms)	BYLD(2.1 m²,gms)	Wt100 seed (gms)
1	124	159	49	329	671	5.95
4	122	160	42	284	643	5.75
7	127	160	46	344	801	5.10
9	124	160	39	226	493	5.15
12	132	161	46	193	398	6.05
14	131	167	39	208	463	5.71
15	126	163	42	212	316	6.75
16	121	153	30	284	471	5.60

DFLR: days from sowing to 50% flowering

DMAT: days from sowing to maturity

PTHT: height of plant (cm.)

YLD: seed yield (2.1m²,gms)

BYLD: biological yield (2.1m², gms)

Thank You...