AGROBIODIVERSITY IN SOLE AND MIXED FIELD BEAN (*LABLAB NIGER* MEDICK) AGROECOSYSTEMS IN SOUTH KARNATAKA

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Source of Proteins,
vegetable and fodder

Objectives

1. **Documentation of Biodiversity**

- **Plants**
- **Insects**
- **Birds**

2. **Crop yield**

3. **Cost benefit ratio**


Finger millet


Castor

Fodder Sorghum


Niger

Plant community parameters in sole and mixed field bean agroecosystem

Plants	Species	Total No. of individuals /4m^2		Plant density /4m^2		Species frequency /4m^2	
		Sole	Mixed	Sole	Mixed	Sole	Mixed
Cultivated	Field bean	47	24	11.75	6.00	0.08	0.05
	Finger millet	---	0	-----	0.00	------	0.00
	Sorghum	---	34	-----	8.50	-----	0.08
	Castor	---	4	-----	1.00	------	0.00
Weeds	*Phyllanthus amara*	42	20	10.50	5.00	0.07	0.04
	Tridax procumbens	46	30	11.50	7.50	0.08	0.07
	Richardia scabra	62	54	15.50	13.50	0.11	0.12
	Mitracarpus hispida	57	51	14.25	12.75	0.10	0.12
	Cynadon dactylon	71	78	17.75	19.50	0.13	0.18
	Cyprus rotundus	86	84	21.50	21.00	0.16	0.19
	Chromoleana odarata	73	24	18.25	6.00	0.13	0.05
	Bocrhavia diffusa	25	10	6.25	2.50	0.04	0.02
	Synedrella vialis	25	12	6.25	3.00	0.04	0.02

Bird community…….. Drongo

Bee eaters


White breasted kingfisher

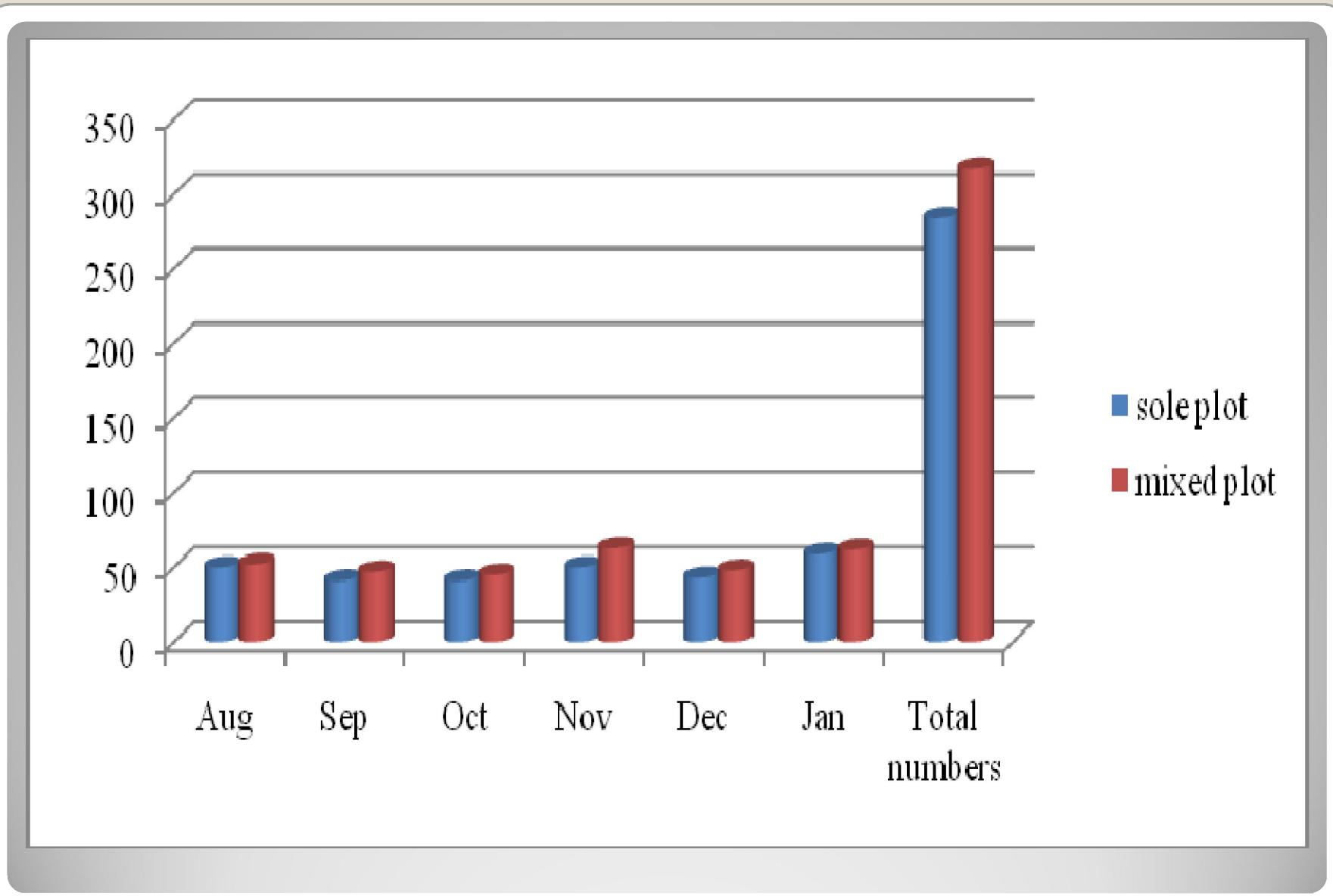

Magpie robin


Red vented bulbul


House crow


Indian Roller
State Bird


Common myna



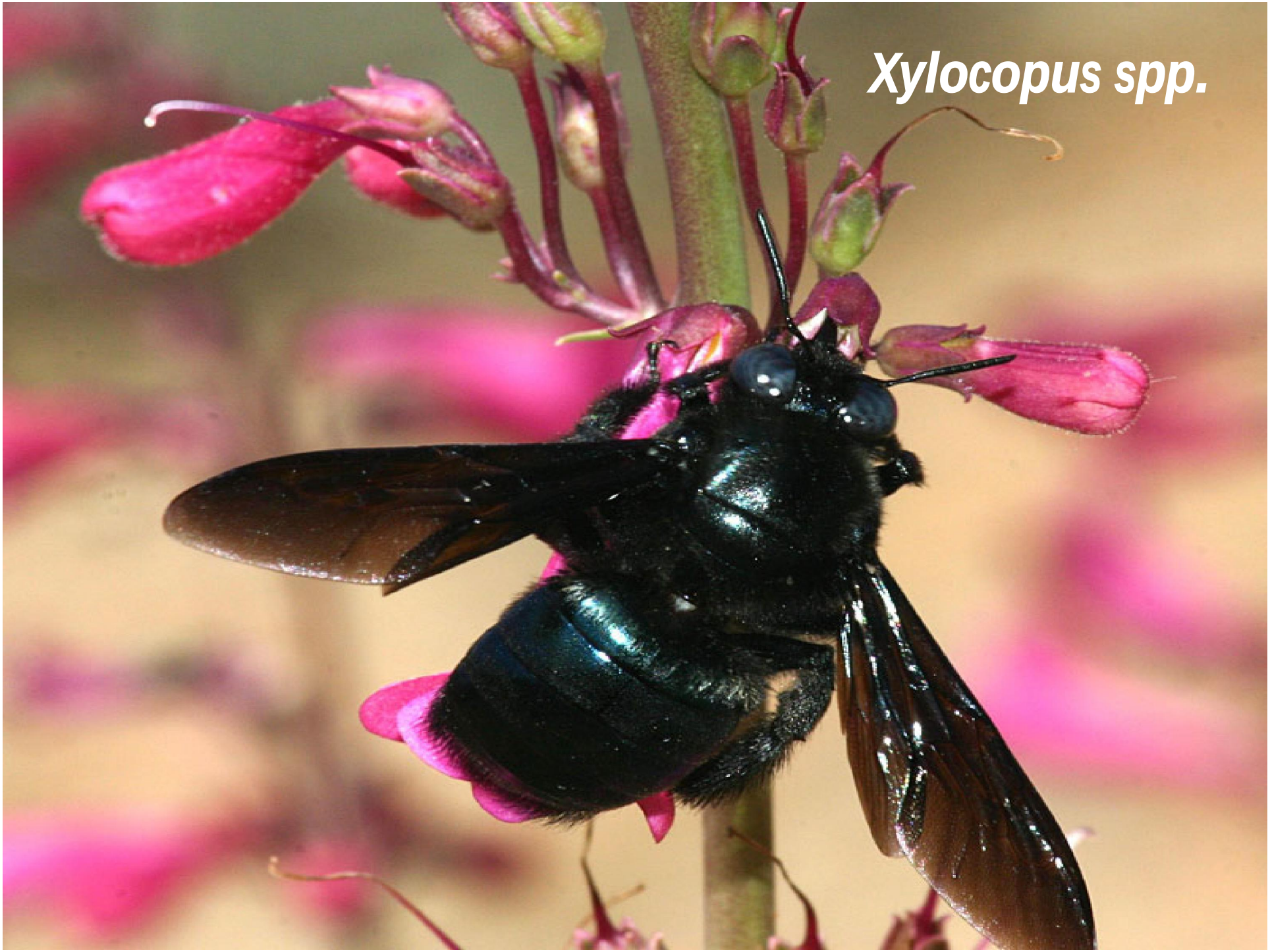
Comparison of Bird community in sole and mixed field bean agroecosystems

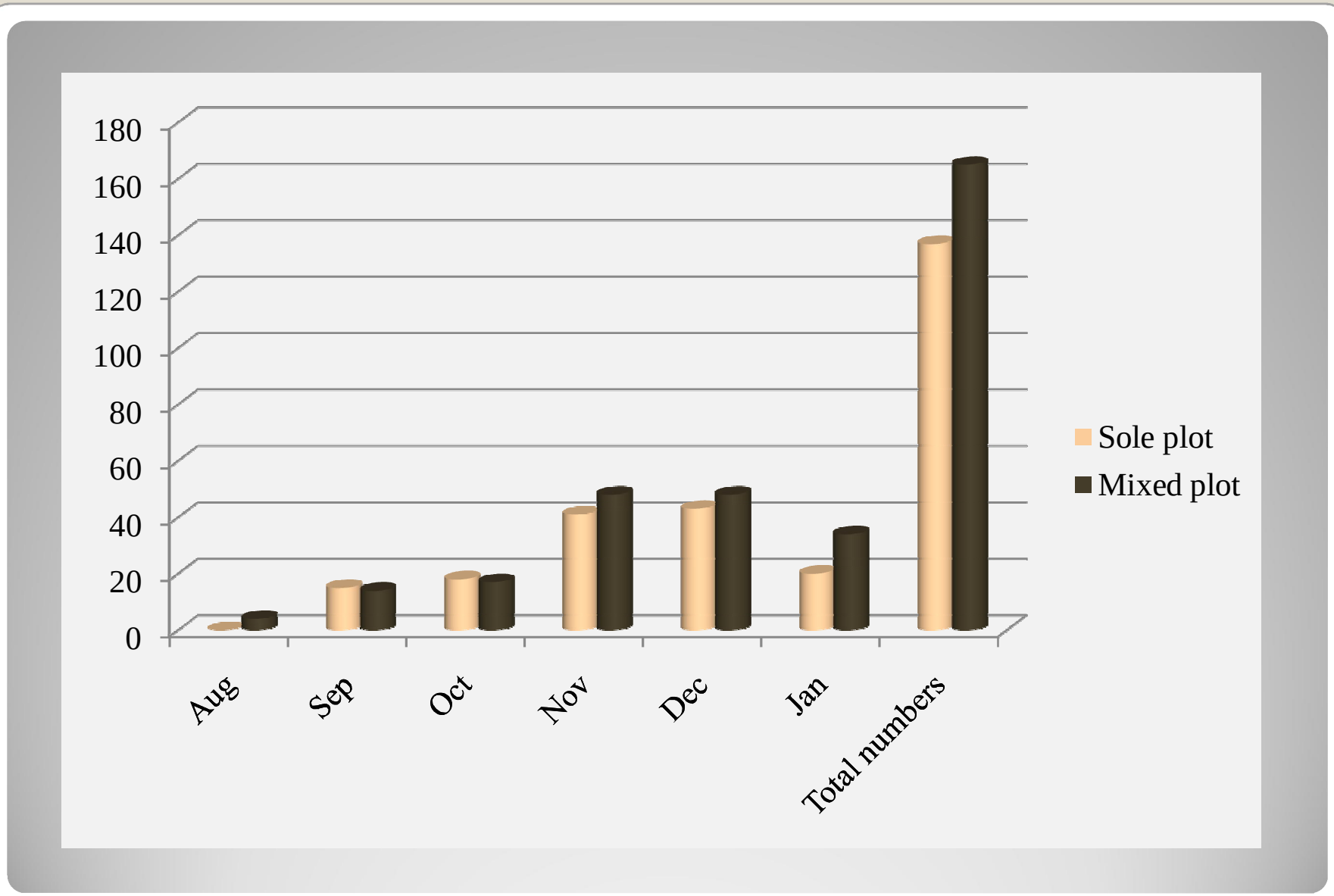
Bee community.....

Apis dorsata


Apis florea


Apis cerana indica


Xylocopus spp.



Comparison of bee community in both the field bean agroecosystems

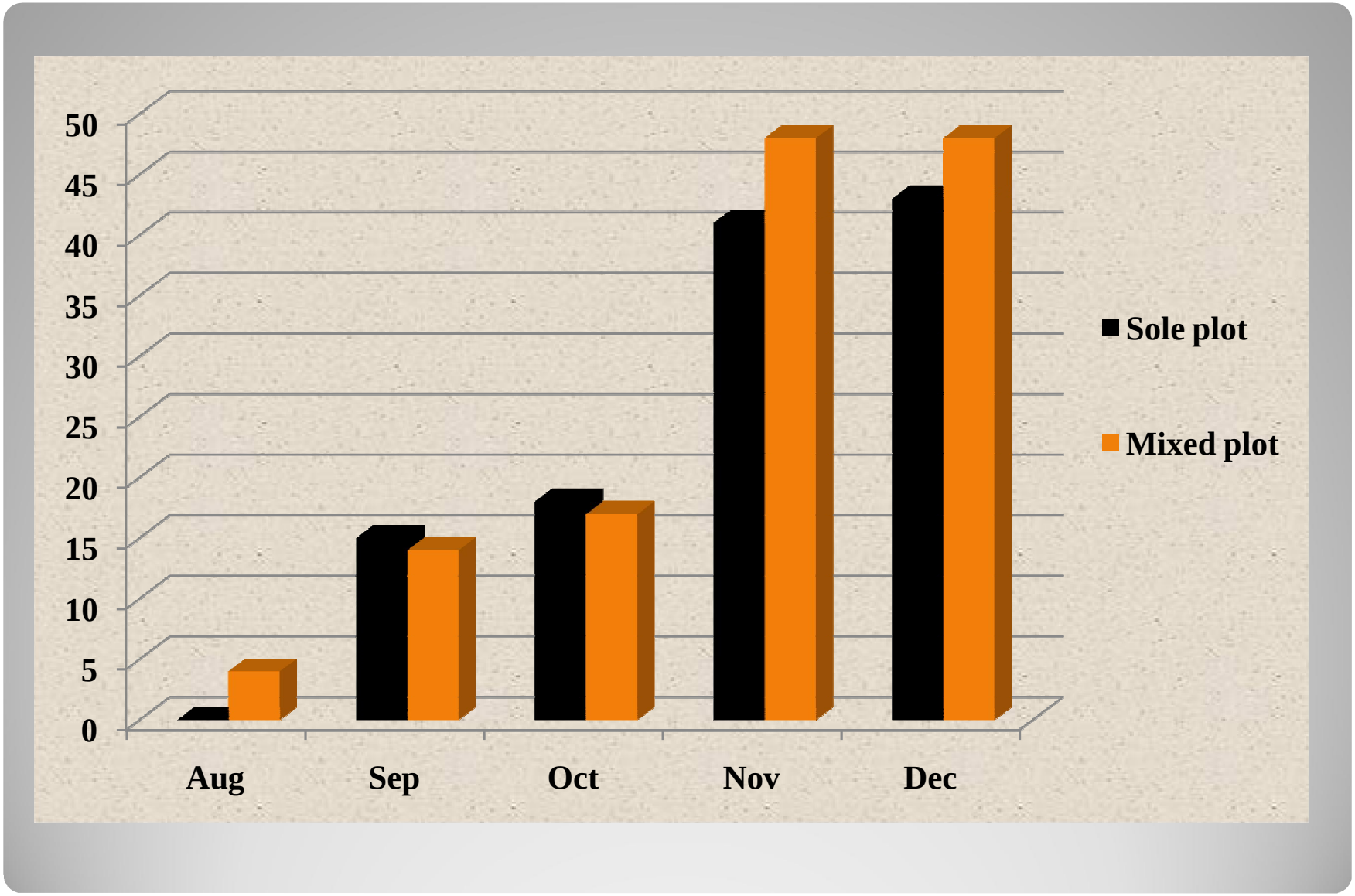
Beetles community…….

Chrysomelidae

Coccinellidae

Curculionidae

Ground beetle



Comparison of beetles community in both the field bean agroecosystems

Butterfly community

Common grass yellow

Common castor

Common Indian crow

Danaid egg fly

Blue tiger

Crimson rose

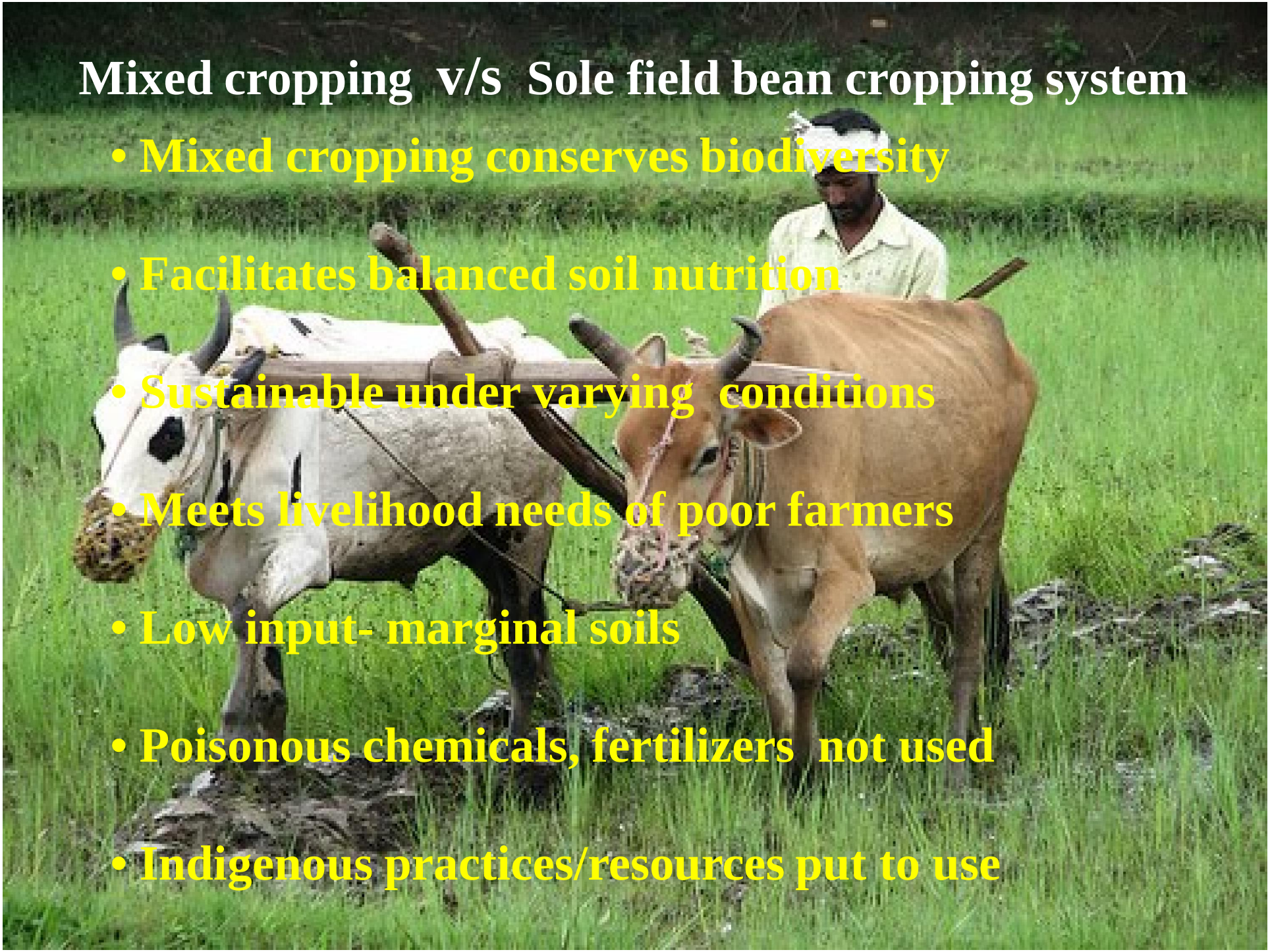
Butterfly community parameters during different plant phenotypic stages (August 2009 to January 2010) of sole and mixed field bean agroecosystem

Species	Aug		Sep		Oct		Nov		Dec		Jan		Total numbers	
	Sole	Mixed	Sole	Mixed	Sole	Mixed	Sole	Mixed	Sole	Mixed	Sole	Mixed	Sole	Mixed
Mottled emigrant	11	13	18	19	24	20	20	38	44	40	7	10	124	140
Common grass yellow	14	6	12	7	14	9	11	9	25	22	2	6	78	59
Common migrant	0	4	4	9	4	5	9	16	13	20	2	5	32	59
Common castor	5	5	7	13	8	12	8	22	16	23	1	10	45	85
Lesser grass blue	7	10	18	12	6	8	13	12	19	22	5	6	68	70
Common Indian crow	0	7	9	9	7	11	7	12	14	10	2	5	39	54
Danaid egg fly	2	5	6	7	5	8	4	21	9	20	4	4	30	65
Blue tiger	0	0	6	10	6	10	16	12	22	12	1	6	51	50
Striped tiger	0	2	3	7	5	9	10	8	15	9	2	5	35	40
Crimson rose	0	0	2	2	2	3	2	10	4	15	0	0	10	30
Total	39	52	85	95	81	95	100	160	181	193	26	57	512	652

Total expenditure and C:B ratio of cultivation of Field bean in Both the Agro ecosystems

SI.no	Particulars	Sole cropping Systems	Mixed cropping System
1	Total Expenditure	Rs.1090	Rs.1450
2	Total crop yield	Rs.2550	Rs.7425
3	C:B Ratio	1:2.32	1:4.11

- Economic analysis and calculation of C: B ratio revealed that mixed cropping field bean agroecosystem was more profitable than sole field bean agroecosystem



Mixed cropping v/s Sole field bean cropping system

- Mixed cropping conserves biodiversity
- Facilitates balanced soil nutrition
- Sustainable under varying conditions
- Meets livelihood needs of poor farmers
- Low input- marginal soils
- Poisonous chemicals, fertilizers not used
- Indigenous practices/resources put to use


THANK YOU