



world congress on integrated
crop-livestock-forest systems

3rd International
Symposium on Integrated
Crop-Livestock Systems

towards sustainable intensification
brasilia • brazil • 2015

Congress Proceedings

Anais do Congresso

These Proceedings organize the papers and abstracts presented at the 2015 World Congress on Integrated Crop-livestock-forest systems (WCCLF) incorporating the Third International Symposium on Integrated Crop-Livestock Systems, held from July 12 to 17, 2015, at the Ulysses Guimarães Convention Center in Brasília, DF.

The objective of the Congress was to discuss the state-of-the-art of integrated agricultural systems as well as its perspectives as main 'drivers' of sustainable intensification on agriculture all over the world. The event was organized and promoted by the Brazilian Agricultural Research Corporation and the Federal University of Rio Grande do Sul, with the support of many national and international institutions including CIAT, CIRAD and USDA.

The event was based on three pillars. Plenary presentations of international scientific results on ICLF systems; technical training of technicians with focus on existing recommendations; and teaching conferences to discuss inclusion of the ICLF in the Universities agendas.

Scientists, experts, technicians, professors, students and leading producers of different fields participated in the Congress, which was organized into three main topics: technology, environment and social economy. The subjects distributed in many topics in the agenda include issues related to global agriculture sustainability; opportunities and limitations on the adoption of integrated systems; environmental costs of intensive agriculture; contributions of integration for family farming; efficient use of water and nutrients; carbon sequestration and greenhouse gas emissions, among others.

More than 350 scientific papers were selected for presentation. Forty of these scientific submissions were chosen for oral presentation, arranged in ten parallel sessions. The other submissions were presented in poster format, and remained displayed in the panels during the entire event. This present publication is divided in three sessions: Abstracts of plenary speakers, Abstracts of Oral Presentations in parallel sessions and Posters' Abstracts.

RESULTS

The program of the Congress, both technical and scientific, was substantial and produced significant statistics. A total of 24 scientists participated in the Plenary Session, from several different countries including five from Brazil. The two Special Sessions, for technicians and for teaching, had 23 presentations. A total of 907 attendees were pre-registered and 602 were present at the event. Twenty six Brazilian states were represented as well as 22 countries. Two hundred and twenty eight public and private institutions were represented by different attendees. Three hundred and fifty four submitted papers were presented either as posters or as oral presentations. The total of 1,075 co-authors contributed with scientific papers submitted. An intensive debate was encouraged in the teaching Special Sessions in order to discuss the inclusion ICLF systems courses in the universities and technical schools. Professors, students and technicians appointed limitations in the curricular plans and course programs. They proposed alternatives, new procedures and recommendations to improve ICLF disciplines, considering the complexity of the systems and the need of a systemic multidisciplinary approach of this subject



Cattle production on pastureland during dry season at integrated crop-livestock systems on the Cerrado of Maranhão

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Introduction The Cerrado of Maranhão has stood out in the production of grains in cropland areas. Although intensely managed during the cropping cycle, these areas remain idle or underutilized for longer periods in the dry season. An alternative for the more efficient use of these areas is the use of integrated crop-livestock systems. This system is characterized by diversification, rotation, intercropping and / or succession of agricultural and livestock activities within the farm, resulting in a single system with mutual benefits. This study aimed to evaluate the production of young cattle in an integrated crop-livestock system in Maranhão, during the dry season.

Material and Methods

The work was carried out at Santa Luzia Farm, in São Raimundo das Mangabeiras, MA. The farm is located at 6°49'48"S and 45°23'52"W, with an altitude of 475 m. The stocking rate and weight gain of 1500 Nellore under integrated crop-livestock systems were evaluated from 2007 to 2013, during the grain crop fallow, in the dry season. Grazing areas were derived from the simultaneous cultivation (intercrop) of corn and *Brachiaria ruziziensis* (CRUCIOL, 2011). After the harvest of the maize, animals were introduced and remained in the area for 120 days receiving an extra multiple mixture composed of 40 % corn, 25% soybean protein, 3% livestock urea, 14% of sulfur bloom and 0,7% micronutrients.

Results and Conclusions

Tab. 1: Cattle yield in integrated crop-livestock systems at Santa Luzia Farm, MA . 2007-2013.

year	Stocking Rates (AU/ha)	weight gain (@/animal/period)	weight gain (@/ha/period)
2007	2,24	3,8	8,5
2008	2,26	4,16	9,32
2009	2,43	3,0	7,32
2010	2,2	4,6	10,1
2011	2,2	4,18	9,2
2012	3,2	4,0	12,8
2013	2,3	4,84	11,13
Average	2,4	4,08	9,80

The initial average weight of animals was 12.7 @ with an average stocking rate of 2.4 AU / ha. The average weight after 120 days was 17.54 @, resulting in an average weight gain of 9.8 @ / ha during the dry season. The average cost of production was 3.1 @ / ha providing a net income of 6.7 @ / ha. The results indicate the feasibility of producing cattle in the off-season (dry season) in integrated crop-livestock systems in Maranhão State.

References cited

Cruciol et al. (2011). Revista Brasileira de Pesquisa Agropecuária, v46, n 10, p 1234-1240, 2011.

Intensive beef and dairy production – the need for diversification

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GO TO

-  KEYNOTE SPEAKERS
-  ORAL PRESENTATIONS
-  POSTERS

NEXT
ABSTRACT



296

