The 1st National Seminar on Valorization of Triticale" From Farm to Table"

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Triticale's Current Status in Algeria

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Algeria is among the countries that prioritize the cultivation and production of grains, with triticale being one of the important varieties. The current situation of triticale in Algeria highlights several aspects that need to be considered.

First and foremost, it is noted that agricultural production of triticale in Algeria has witnessed tangible progress in recent years. Agricultural research has been enhanced, and agricultural techniques have been developed to improve the quality and quantity of production. There has also been a focus on incentivizing farmers to cultivate triticale by providing necessary support and assistance.

However, there remain challenges facing the agricultural sector in Algeria, directly impacting triticale. Among these challenges is the decrease in rainfall levels and climate change, which may negatively affect agricultural operations and production. Additionally, there are issues related to marketing and distribution of crops, requiring effective strategies to ensure the product reaches markets smoothly and organized.

On the positive side, triticale is highly appreciated by consumers in Algeria, being considered an important dietary supplement and a rich source of nutrients. Therefore, enhancing production and marketing of triticale presents a significant opportunity to improve food security and increase income for farmers.

Sustaining the current situation of triticale in Algeria requires comprehensive strategies including continuous improvement of agricultural research, enhancing irrigation and drainage infrastructure, providing financing and support to farmers, as well as strengthening marketing and distribution. Through these measures, sustainable growth and development can be achieved in the triticale sector in Algeria, resulting in tangible economic and social benefits for the community.

Keywords: Triticale. Algeria. Agriculture. Production. Agricultural techniques. Challenges. Decrease in rainfall levels. Climate change. Marketing. Distribution. Food security. Farmer support . Agricultural research. Infrastructure. Sustainable growth

[1] Speaker

Le triticale culture d'Alene pour le development et la promotion des productions animals end milieu semi-arid difficile

Abdelkader Barbellate [23] [1]

[1] INRAA – Algeria

La precarities des zones semi-aides, les changesets critiques power's et le manque deal (culture end irrigate) nous conduit impertinent `a nous adapter `a cues ale's end cultivate de Nouvelles specs plus adoptees et productive dans cues milieux ago- ´ecologies. Pour pallier `a cue manque alimentaria et pour mix les Nouri, Algeria imported claque Anndee de grosses quantities de matières premieres representees par le maxis, les ogres et les Tourneau, engendering use charge important pour le Tresor public stymie nanoelement `a des contains de millions de dollars US sin on plus. Dependent pour Secale faire face `a cues defies, il existed plasters alternatives de substitution et de replacement meme partial pour certain substrates our matières premieres, par use possible production forager our de cereals grains dans les conditions locales (adoptees aux conditions ago-´ecologies des regions prepares semi-aides et aides). Une des alternatives immediate de substitution resides dans la culture du Triticale qui grace `a sees determination interstates `a la foes agronomies et nutritional's portrait constituter use culture Prometheus et surtout parcel quelled put ˆere envisage easement dans les systems de production les plus fragilizes. Le Triticale (fragilizes Witt Mack) qui a ´tee introit dans cues zones deputies les Anne's 70 a prove as superiorities end tenement grain par rapport `a touts les aures cereals tant end grain queen four rage. Le triticale Est use planet annulled de la faille des Poaches (gramine's), il provident de la contraction entre deux mots Latin's: Triticum et. Chest un hybrid artificial (amphiploid) often par brisement entre le blue et le siege realis's par home veers 1876. La premiere varieties fertile chest-`a-dire reproductible a ´tee product la premiere foes end 1888. Le triticale Est use planet Mustique movant apparent `a touts les conditions apparent. Chest use planet `a tige haute mite predicant de la paella et du grain. Sa paella Est mix digestible que celled des aures cereals et fort precise par les animus. Il convent bien `a touts les specs animal's grace `a sees qualities nutritional's notemen end acids amin's essentials. Du point de Vue agronomies, le triticale a month's certain advantages: -adapted aux terrains daffodils, trop humidex our trop secs, acids our salons; tolerance aux gelée's hibernacles; resistance `a la verse et aux maladies; Ren dement grain superior `a clue du blue surtout end conditions marginals. Du

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point de Vue nutritional, Meilleur qualities nutritive (plus riche de plus de 25% end acids amin's (lysine, cystine et methionine) que le blue. Le Triticale qui a ´tee raiment performant Durant les derrieres decades end Algeria Est surtout captive end tant que four rages (60% foin et ensilage et 35% grain pour les animus et 5% pour la consummation humane) (barbellate, 2002). Le triticale Est use cereal interstate et Prometheus `a leavened pour les regions semi-aides our` association cereal-´elevate constitute use function Agricole dominant. En milieu semi-arid difficile, le triticale put ˆere substitute `a la culture de lodge.

Keywords: Triticale, blue, siege, Hybrid, performance, qualities nutritionally.

Etude de la stabilities du tenement chez queues genotypes de triticale (×genotypes Witt Mack) sur la base de certain indices non perimetries end conditions semi-aides.

Hocine Benade [4] [1]

[1] University of Reliance – Algeria

Objectify de cete ´etude Est la selection de genotypes adept's et stables de triticale base sur utilization de certain indices non perimetries. Experimentation a ´tee mentee pendant les trois campagnas Agricole's consecutives (2017-2018, 2018-2019 et 2019-2020) au Nivea de la station experimental de Seti (ITGC). Le programmed STABILITYSOFT a ´tee utilize pour
calculary les indices non perimetries. les resultants base's sur les indices non perimetries de Nassar et Huhn Si (1), Si (3) et Si (6) des genotypes ´value's not revel's que G1 Est le genotype le plus stable avec la Valeur la plus foible de Tous les genotypes et le tenement money end grains
le plus ´eleven. En outré, la distribution repique entre les indices non perimetries de Nassar et Huhn Si (3), Si (6) et le tenement money end grains des genotypes test's a month's que les
genotypes adept's et stables avec un tenement money end grains ´eleven dans cues conditions sent
G1, G2 et G3. Les resultants not month's que le genotype G1 a les values les plus foibles pour les indices non perimetries de Thennarasu NP (2) et NP (4) avec le tenement end grain le plus ´eleven de Tous les genotypes test's, tandems que la Valeur la plus foible de NP (3) a ´tee
unregistered dans le G3. De plus, la classification repique base sur la distribution entre Lidice non parametrium de Thennarasu NP (4) et le tenement money end grains des genotypes test's a month's que les genotypes adept's et stables sent G1, G2 et G3. Dans ensemble, les resultants de cete ´etude not confirmed que les methods non perimetries ´taint les outlies alpiroprides pour identifier les genotypes de triticale les plus stables dans les conditions semi-aides.

Keywords: Triticale, Stabilities, Selection, Non, Parametrium, Ren dement

[4] Speaker

An effective increase in milk production through Triticale feeding

A Bankura [56] [1], A Barbellate [2], Youcef Dib [*]

[3]

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Since the first studies in Algeria in 1999, 2002 and 2005, Triticale has been used in arid and semi-arid areas mainly for livestock production. Efforts have been done through the utilization of triticale as hay, silage and whole grain to feed dairy cattle and small ruminants (sheep).

Studies have shown that triticale crop could be easily integrated in the existing crop-livestock system of northern Algeria. In spite of the good results in the yield performance and adaptation to diverse environments, decision makers are not giving to this crop all the needed attention. Dairy cattle holders that tested the crop have adopted it quickly and developed it in an informal way. Now, more than 90% of the triticale seed business is on the hand of private farmers without any help or subsidies nor a good price policy to develop strongly this crop.

The utilization of triticale in Algeria is roughly as follow: human consumption 5%, forage crop (hay or silage) 60% and 30% as feed grain, the remaining 5% are kept for seed increase. In our studies comparing different feed sources (barley, concentrate diet & mixtures) to dairy cattle and sheep, triticale responded highly significantly for meat production and gave also an

amazing response for dairy and sheep milk production in Algeria. Milk production of animals fed with triticale over exceeded the other feed sources by 26% and 53%; mean live weight gain exhibited the same rates.

Keywords: Triticale, milk production, Dairy cattle, sheep, feed.

Valorization et utilization du Triticale end alimentation humane

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The 1st National Seminar on the Valorization of Triticale" From Farm to Table" El Oued 21-22 April 2024.

Valorization et utilization du Triticale end alimentation humane

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Resume

De no's hours, les cereals end general, le blue end particulier constituent la principal base du regime alimentaria pour le conformateur Algerian, le blue Est omnipresent dans Notre alimentation pasquil Est `an origin du pain (farina) plat traditional `a base Seoul anise que les differences pates. En Algeria, le secateur des cereals occupy use place Vitale end terms socio-´economies et parfaits politique. Sur le march's Mondial, Algeria demure bonjours Parmi les grands importations de cereals end particulier le blue tenders du fait de la foible capacities de la Fili 'ere national `a satisfier les basins de consummation croissants de la population et la production locale qui reset foible, et qui Est influence par les conditions critiques deferable marquees par des Anne's de shepherdesses successive. Pour faire face `a cete situation des efforts sent fate pour mellower la mellower Parmi les solutions apport's la culture de cereals secondaries come Ogre les agonies anise que le triticale; ells Sont utilizes end alimentation animal et valor sables dans alimentation humane. Le triticale Est lune des cereals qui put ˆere valorize et utilizer end alimentation humane pour as Valeur ago nutritionally.

Notre travail consisted `a matter end Valeur cete cereal et son utilization anise que as transformation dans le Domaine Hybrid notemen end planification, preparation de pates. Les essays sent base's sur la determination des determination determination, de la tenue end proteins du Triticale principle le gluten, don't as qualities Est un factor determinant des determination theologies pour attainder cat objective la relance de cete culture ´Etat important et cola par la vulgarization chez les agricultures qui ne consistent traducement pas le Triticale et cola pour assurer use production

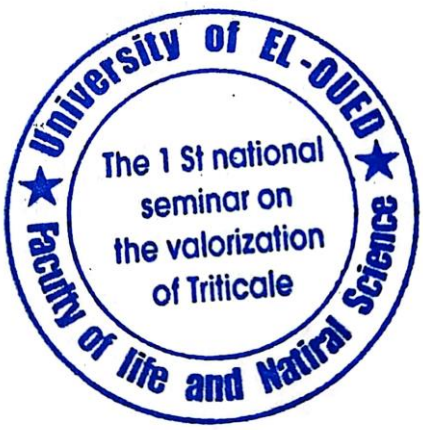
La disponible de la silence de Triticale assurer par office Algerian Interprofessional des cereal au Nivea de la Cooperative des cereals et legumes secs de la wilaya de Telemen deputies la campagna Hybrid 2021/2022 per la varieties Trim our nous a permit de shiver de plus pries les tenements anise que Tous les factors qui prevent avoid use influence sur la qualities du product des essays sur plasters varieties sent assurer claque Anne's sur plasters sites dans different wilaya notemen El Oued our les resultant sent encourage ants.

Les resultants identifies attends visit `a prouder la possibilities utilizer le triticale dans Notre alimentation par production de farina qui put constituter use autreie resource alternative pour la reduction de la facture importation et le reinforcement de leucotomy national, end parallel realizer des essays de planification anise que la fabrication de pates alimentaria's et meme des biscuits.

La mise end places de la notion de farina multigrain `a base de Triticale et autreie cereals tell que le blue.

[7] Speaker

Keywords: Cereal, Blue, Triticale, gluten, Farine, Theologies, vulgarization, cereal secondaries, ogre, avoided.



UTILISATION DU TRITICALE DANS L'ALIMENTATION DU BETAIL (Ruminants et Monolatrous)

Youcef Dib [8][9] [1]

[1] INRAA – Algeria

Monolatrous par's la forte degradation de escape pastorale occasions' par de numbered factors, alimentation des animus domestiques Est revenue le factor limitans au development des productions animals dans Notre pays. Pour pallier `a cue manque et dans le souci de mix Nouri no's ´elevates end Vue dune Meilleur exploitation du potential potential de no's races des mix adoptees aux conditions locales, Algeria imported end effect claque Anndee de grosses quantities de matières premieres composes de Mais, dodge et de Tourneau etc... Tobuterols, cues importations constituent `a cat effect use charge important pour le pays, septime's nanoelement `a des contains de millions de dollars. Dependent, il existed des alternatives de substitution de production locale de replacement du moans partial pour certainness matières premieres entrant dans la fabrication des Comcentre's destines `a alimentation animal et par la meme occasion require la concurrence entre home et laminal end matière matière. En effect, la culture du triticale, grace `a sees determination interstates `a la foes agronomies (integrant filament dans les systems de production) et nutritionally (pour as richesse end acids amin's de plus de 25 % par rapport aux aures cereals) constitute use culture des plus Prometheus's car Elle put `a leavened ˆere envisage et encourage dans les systems de production fragilis, pour as contribution dans augmentation de loafer alimentaria national et surtout pour son incorporation dans la fabrication des Comcentre's commercia pour les differences specs animals. Les different travaux realis's sur utilization et la valorization du triticale grain dans les differences rations animus dans les conditions Algerianness not ´tee confluents et encourage ants.

Keywords: Triticale, alimentation, utilization, ruminants, valorization.

Analysis of Grain Yield Stability of Triticale

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(×genotypes Witt Mack) genotypes growing under Semi-arid Conditions Based on the Some Parametric Index

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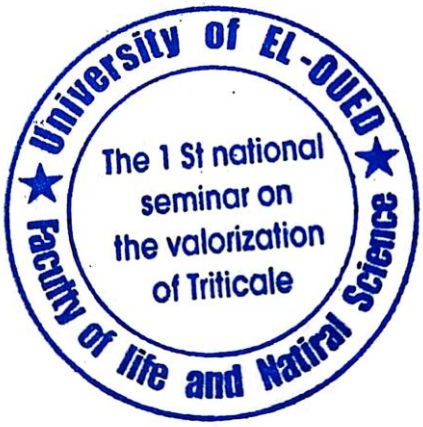
Field experiment was conducted during the three consecutive cropping seasons (2017–2018, 2018–2019 and 2019–2020) at the experimental field of ITGC, Seti, Algeria to study the selection of stable genotypes of triticale based on the use of some parametric index. The program STABILITYSOFT was used to calculate the parametric. The graphic distribution of the genotypes tested based on the relationship between the mean grain yield and regression coefficient (bi), proved that the suitable genotypes for the tested conditions are G2, and G3. The association between Seti (Wi^2), the coefficient of variance (CVGI), the mean variance component (theta) *theta*(σ^2i) indices with the grain yield proved that the best genotypes for growing under these conditions were G2 and G3. In addition, the selection based on the non-parametric index showed that the genotypes G1, G2 and G3 were the most stables. The combination selection based on highest grain yield and the parametric indices proved that the genotypes G2 and G3 are the more stable and more adapted under semi-arid conditions.

Overall, the results of this study confirmed that the parametric methods were the suitable tools to identify the most stable triticale genotypes at various environmental conditions.

Keywords: Algeria, Triticale, Grain yield, Parametric, Selection, Stability.



[10] Speaker

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Chemical analysis and antimicrobial activity of Salsola fetid extract against pathogenic bacteria

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The present study investigates the biological efficacy of *Salsola fetid* (Chenopodiaceae vent), a wild plant found in the Algerian desert, focusing on its potential antibacterial properties.

The objectives involved testing the MeOH extract (70%) of *S. fetid* aerial parts for antibacterial activity against six bacterial strains, quantitative determination of phenolic content, HPLC, and FT-IR analysis. The MeOH extract exhibited significant antibacterial activity against *L. innocuous*, *S. aureus*, *E. coli*, and *P. aeruginosa*, while showing weak effects against *B. subtilis* and *S. typhimurium*. The study concludes that *S. fetid* holds promise as a source of bioactive compounds for applications in the food, pharmaceutical, and cosmetic industries, emphasizing its potential significance in these sectors.

Keywords: MeOH extract, Salsola fetid, Antibacterial activity

*Speaker

Valorizations of antioxidant properties of crude extract and anthocyanins fraction of Helianthemum lippii L

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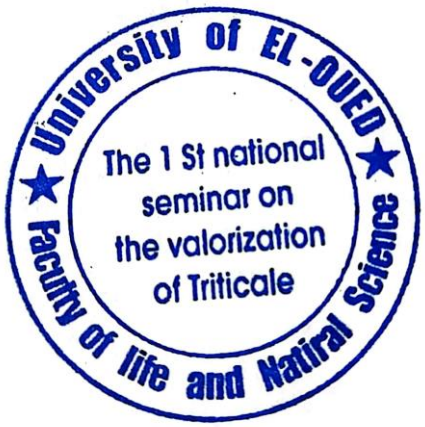
Helianthemum lippii is commonly used in Algerian rural communities in folk medicine for the treatment of infectious and gastrointestinal disorders. This study was designed to determine the phenolic profile. The DPPH, Reduction Power (RP), and -Carotene Bleaching (BCB) tests have also been used to assess antioxidant activity of anthocyanins fractions and crud extract obtained from the aerial parts of this plant. The experimental findings showed that crud extract and anthocyanins had a strong had high antioxidant activity (IC50 values for the DPPH, RP, and BCB assays were (3.08±0.00μg/mL, 2.86±0.09b) ;(1.724±0.021,1.63±0.07)

*Speaker



(2.97±0.012, 2.39±0.26), respectively. Finally, it is worth noting this plant and its fractions are a promising source of medicinal treatment for other illnesses brought on by oxidative stress

Keywords: Medicinal plants, Helianthemum lippii L, Bioactive compounds, Antioxidant activity

Le triticale: use culture interstate merited deVere encourage

Abdelkader Laboda * [1]

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Resume Triticale Est use planet planet octene `a travers un brisement entre le blue (Triticum sp) et le siege. Rabblement, chest la raison pours laurelled il Est douse d'un certain number de characters agronomies et nutritional's importances. Les essays experiment effect's `a la station de recherche (INRAA) darer Durant les campagnas 2021/2022 et
2022/2023 sur sept (7) varieties de triticale not mis end ´evidence le bon comportment vegetative de ensemble des varieties testes. Des varieties precooks et daughters tardive sent observes
avec des durée's de cycles vegetates comprises entre 154 et 192 hours avec use petite difference

*Speaker

entre campagnas. Les tiges longues et rigids ´etouffee bien les adventives et resistant contra la verse. Les ´epis Durs et barb's not empress's atabaque des atabaque. La paella conserve as former
robusta pendant use longue period et meme `a la bergère chez le chapel. Acuna maladies n's ´tee observe Durant cues deux campagnas d'essai. Une tolerance important Est apparel vis-`a-vis aux stress hydraquent et saline comparative Ent au blue et `a lodge captive's dans les
memes conditions. Les tenements octenes sent satisfices, ills sent trees porches L'nu des aures sans difference significative. Ills variant entre 78 et 81 q/ha. Les longueurs des tiges variant de 80 `a 113 cm et les tailless des ´epis oscillate entre 10 cm et 16 cm.

Keywords: Triticale, region darer, varieties, comportment, tenements

*Speaker

Utilization du Triticale end tant que four rage

El Ha Di Marongiu [1213] [1]

[1] INRAA – Algeria

Le triticale put ˆere utilize sous touts les forms Mais forms end grain et surtout end ensilage come chest le case de numbered pays (Chine, Breslin, la Cologne, Tunisia) cites par C. Jobim et J.C. Emile, 1999. Latitude au repousse par's des coupes precooks Lui confrere des capacities non negligible utilization come four rage vert. Association forager pois – triticale our Vesce-Triticale done quantitative Ent des tenements end matière speech significative Ent superiors comparative Ent aux aures specs so it 8.5 tones de MS `a la station ITGC dwell Karoubi (Harmit ,1988) et 10 tones `a Leinart de Tunisia, 1999 par Hachemi contra 5 `6 tones pour les aures associations. Le triticale put ˆere utilize sous diverse forms: so, it ends ensilage chez la ache loiterer so it sous former de grain concassed our entire incorporeal dans les different aliments pour les aures specs. En plus des tenements ´lev's, le triticale end association avec des leguminous offer un four rage de qualities end raison dune Meilleur expression de cete derriere; En effect, le triticale Est moans aggressive que les aures four rages de gramine's (ogre our avoided) cue qui aforesaid entitlement le development de la leguminous. le potential forager entitlement captive demure insignificant et surtout marginalize des systems de production. La contribution nutritionally, salon de numbered auteurs et les satisfies locales, des four rages artificial ne representant que 11 % des apports alimentaria's nation so it environs 750 million due. Ansi, augmentation des performances de production (lait, viand) chez certainness specs animals' principle le bovine, qui deferent trees foibles, doit passer impertinent par use alimentation riche et ´impertinent que cue so it au plan quantitative que qualitative. Une des alternatives la plus plausible de substitution qui portrait ˆere envisage doors et D'aja reside dans la culture du Triticale end raison de sees a tout qui sent numbered: soulless de production, adaptation au milieu difficile et abuse pour sees qualities undeniable `a la foes agronomies et nutritional's. A cat effect, le triticale portrait don ˆere considered come culture d'Alene des regions aides surmises le plus solvent `a des shepherdesses severs et repetitive.

Keywords: Triticale, Forage, foin, ensilage, association

[12] Speaker

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Codeclination de erosion des Sols et sees Impacts sur la Productivities du Blue.

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[2] Department de Geology, Laboratories Sols et Development Durable, University's Badji Mokhtar-Annaba. – Algeria

Leucosin hydraquent Est un problem environmental majeure. La deforestation, le changeset critique et agriculture intensive sent agriculture des variables qui aggravate la degradation des sols. La productivities Agricole Mondale Est Mondale menace par leucosin hydraquent, end particulier pour les cultures leucosin come le blue. Elle kompromat les tenements, demine la fertility's des sols et met end peril la securities alimentaria. Cette ´etude examine impact de leucosin hydraquent sur la productivities du blue, end utilizing le model RUSLE integer sous SIG pour stammer la pert end sol au Nivea du sous basin versant de loud Boomerang, Nord-Est Algerian, et la façon don't Elle put affecter les sols Agricole's anise que le tenement du blue. Le model RUSLE integer uncertain number de factors, notemen un factor derision pluvial (R), un factor degradability's du sol (K), factor de gestion de la couverture (C), un factor inclination de la pence (LS) et un factor de pratique de soutane (P). La carte des pertest de sole qui end result, montre use classes derision trees foible (≤ 2 T/ha/an) qui cover 63,54% de la superficies totaled du basin, deux classes derision murderer de 2 et 10 T/ha/an occupant use surface de 22,57% et 10,49 % respective Ent de la surface totaled du sous basin versant, et use classes trees forte (> 45 T/ha/an) qui ne depose pas 1,10 % De la superficies du basin. Les resultants indument que le sous-basin versant de loud Boomerang Est confronted `a un grand risqué derision. Les trois premieres classes derision se local sent principle dans les sols Agricole's our domine la culture planet de blue. Ceci Est principle duˆ `a des factors naturals et `a des activities anthropogenies sans pratiques de conservation alpiroprides des terries Agricole's, la recherche actually sur actually des risqué put aider `a mix compere la configuration spatial de leucosin des sols, cue qui permit

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applique des techniques de prevention de leucosin des sols et de reduction des risqué pour use gestion durable Afin de maintain la stabilities de la production de blue face aux problems derision. Les agricultures prevent contribute `a la securities alimentaria Mondale end aliquant des strategies de conservation alpiroprides.

Keywords: Erosion, RUSLE, SIG, Oued Boomerang, Blue.

Le Triticale: Un Catalyzer de Durability's, de Resilience et de Transition Entreaties´ et Materialled dans les Systems Culture Contempo rains

Laiche Khaled [17] [1]

[1] LAICHE Khaled – university's eloped, Algeria

Le triticale, hybrid resultant du brisement entre le blue et le siege, ´emerge come un auteur essential dans les systems culture contemporaries, off rant use multitude advantages pour la durability's, la resilience et la transition ´entreaties et materialled.

En terms de durability's, le triticale presented des advantages significates. Sa reissuance rapid et son adaptation `a des conditions environmentalism varies end font use culture attainted pour les agricultures. De plus, as capacities `a require la dependence aux intrants critiques et `a
mellower la qualities du sol end font un choix favorable pour des pratiques Agricole's durables.

En cue qui concerned la transition ´entreaties et materialled, le triticale se distingue ´regalement.

Sa composition riche end biomasses end fait use source Prometheus de bio carburants et de Materia biodegradables. Son potential `a ˆere utilize dans la production demeanor cellulose our de otoplasties oeuvre la voice `a use transition veers des sources deanery et de Materia plus durables.

En conclusion, le triticale ´emerge come un catalyzer clue pour la durability's, la resilience et la transition ´entreaties et materialled dans les systems culture contemporaries. En exploit ant sees multiples advantages, nous poisons non element mellower la productivities Agricole, Mais's abuse contribute `a un avenir plus durable et resilient pour Notre planet.

[17] Speaker

Keywords: Durability's, Resilience, Transition Entreaties et Materialled Systems Culture´ Contempo rains

Evaluation some biological activities of crude latex Spergularia tomentosa L. endemic in Algerian Saharan

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Abstract:

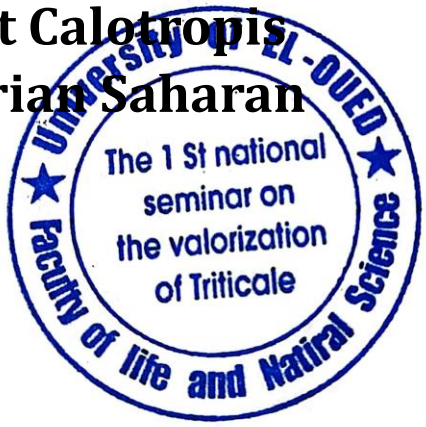
This study aimed to evaluate the crude latex extract from *P. tomentosa* endemic in Saharan. By determining some antioxidant activities through three tests: (BCB) linoleic acid/beta-carotene bleaching assay, (DPPH) radical scavenging and ferric reducing capacity (FRAP) assay. In addition, anti-inflammatory activity was determined.

The results showed that the dry crude latex extract of *P. tomentosa* possessed strong activity in the beta-carotene/linoleic acid bleaching test and the values obtained were very close to the standard reference. Also, there was significant antioxidant activity in the DPPH and FRAP test compared to ascorbic acid. In addition, there is a strong effect of dried crude latex extract of *P. tomentosa* in inhibiting protein denaturation induced by albumin hyperthermia, compared to ASPEGIC®, which is used as a reference drug in infections.

In conclusion, the results indicate that the dried crude latex extract of *P. tomentosa* has antioxidant and anti-inflammatory properties.

Keywords: Key words: Spergularia tomentosa L., latex, Antioxidants activity, Anti, inflammatory Activity.

Evaluation Antioxidant and antibacterial activities of latex extract Calotropis proceri endemic in Algerian Saharan



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This study aims to evaluate the crude latex extract of *Calotropis proceri* endemic to the Algerian Sahara. This is done by estimating some of its biological activities. Which were represented by antioxidant activities, which were represented in two tests Radical Scavenging and Ferric Reducing Capacity, and antibacterial activity. The results showed that the latex extract of *Calotropis proceri* had good activity in the DPPH and FRAP assay, which were estimated at (IC50 = 0.59 mg/ml) and (EC50 = 1.84 mg/ml), respectively. Moreover, the results showed antibacterial activity of *C. proceri* latex extract against the tested strains. In conclusion, the results indicate that the latex extract of *Calotropis proceri* has promising as antioxidant properties, antibacterial.

Keywords: Calotropis proceri., latex, Antioxidant activity, antibacterial activity.

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