

കൃഷി കുറുപ്പി KRUSHI



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ചരമിതലി പർവ്വേഴ്സ് ലിയാർക് പ്രസ്സ് ആട്രിബ്യൂട്ടി
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QUARTERLY TECHNICAL BULLETIN FOR RESEARCHERS,
EXTENSION WORKERS AND TRAINERS IN AGRICULTURE

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A NEW HIGH YIELDING RICE VARIETY

A new high yielding rice variety has been bred at the Paddy Research Station Ambalantota.

- * It belongs to the 3½ month age group.
- * The new variety is red pericarped.

Characteristics of this variety :

Tillering ability - moderate.
Tillering angle - medium.
Plant type - improved plant type.

Average leaf blade is 36 cms. long.
Flag leaf is erect.

Average panicle length is 22 cms.
Average number of panicles per plant 11.

Average grain number per panicle is 195.
The grains are awless.

Grain sterility is about 3%
1000 grain weight at 14% moisture content
is 25.1 gms.

The variety is photo-period insensitive.
Growth duration is as follows :- (Plant
ing to maturity).

Maha (days) Yala (days)

Transplanted	110	112
Direct seeded	104	107

Milling percentage of this variety is about 73.

Protein content is around 9%.

Cooking quality has been rated as good

Seed viability after 6 months storage was 87%. If the seed is stored at 14% moisture content, dormancy period is four weeks.

The name suggested for this variety is At16. This variety may complement or supplement, the presently popular 3½ month rice variety BG 34-6.

நவ தீயூஜி வி வகீயன்

அலிசெலன்சோலி சயரீ பரீயேசைலி லிபியசீயாகசேன், ரகு கிபூபூ
பயித, லாக 31/2 கீ வியசயி நவ வி வகீயன் கிபடிவா கிவீ.

வி ராக 100 கீ கெலீலென் சயரீ ராக 73 கீ ருலிய
யகி லெல வகீயே, அநிய காலகிபிவா பகி 4 கி. கிளபீரீயா கால
அலிசெலன்சோலி சயரீ காலபாபூ ரேயி வலிபி லிபியசீயாகசேன்
ரேயி சயரீலீலீன் நயிவ கிபிசைசய கர கிவீ.

உயர் வி லேவு தரும் ஒரு புதிய நெல்லினம்

ஆம்பலாந்தோட்டை ஆராய்ச்சி நிலையத்தில் செந்திர
சுற்றுக்களியம் கொண்ட 90-95 செ.மீ. உயரமான 3 1/2
மாத நெல்லினம் விநீத்தியாக்கப்பட்டுள்ளது.

மிதமான மட்டங்களில் உண்டாகும் இது 36 செ.மீ.
நீளமான இலைப்பத்திரத்தையும், சராசரி 22 செ.மீ.
நீளமும் 195, .251 கிராம் நிறையும் உடைய (14% -
நீர்த்தன்மை) கொண்ட குஞ்சுத்தையும் உண்டாக்கும்.

இவை 9% புரதமும் நல் சூளிநுட்டும் இயல்பும், 6மாதம்
சேமிக்கப்பட்டவை 87% வாழ்வுள்ளவையும் 14% நீர்த்தன்மை
யும் கொண்டவையாகவும், சேமிக்கப்பட்ட விதைகள் 4 கீழமை
உறங்கு நிலையையும் கொண்டவையாகும்.

உயிரியல் பூச்சி புழுக்கள் கட்டுப்படுத்தும் முறைகள்.

உயிரியல் பூச்சி புழுக்கள் கட்டுப்படுத்தும் முறையினால் பூச்சி
நாசினி பாவித்த லைத் தவிர்த்தும், சுற்றுடல் மாசுபடுத்தப்படு-
வதை விலக்கவும் ஏதுவாகவிருக்கின்றது.

1978ம் ஆண்டு பின்வரும் ஒட்டுண்ணிகள் இறக்குமதி செய்து
அவநாணிக்கப்பட்டவை பின்வருமாறு.

டெவிலேமஸ் ரீமஸ் என்னும் யாழ்ப்பாண நாட்டின் வெங்காய
செடிகளில் விடப்பட்டு ஸ்போடொப்தேரா என்ற மயிர் கொள்
டியை கட்டுப்படுத்தப்பட்டது.

பூரிடோமா ஆட்டைவா என்ற சூராசாவிகா என்ற களை
யை தாக்க மாடுகாவத்தை, பகாஜிவப்பல்லை, பட்டிப்பு ஆகிய
இடங்களில் விடப்பட்டது.

A NEW NURSERY TECHNIQUE FOR RAISING BOMBAY ONION SEEDLINGS

(M.J.B.Fernando - D.A.E.O., Polonnaruwa)

Farmers in Polonnaruwa District had varying degrees of success in raising bombay onion seedlings in the past.

This season 13 farmers agreed to try a new method.

* Nurseries were of the raised bed type.

* Soil was well compacted prior to sowing seed.

* Seed was sown in rows, while the soil was wet.

* Watering was withheld till seed sprouted.

* On the 10th day after sowing, yellowing was observed in some seedlings. This problem was overcome by the simple technique given below:-

* Fresh soil was heaped in between the rows of seedlings and, watering was done thoroughly.

* This enabled added soil to get washed, all over the nursery bed. This caused additional compaction of the soil.

In all the 13 nurseries seedlings grew vigorously. They were removed and transplanted in the field.

With this experience the farmers are now confident that they can raise good bombay onion seedlings by using this new practice.

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මෙම සඟරාවේ අඩංගු ලිපි සිංහල භාෂාවෙන් ඉදිරිපත් කර ඇත්තේ පාරායන කැටියට ඉතා කෙටියෙනි. යම්කිසි මාතෘකාවක් යටතේ සම්පූර්ණ විස්තර අවශ්‍ය නම් කථා විමසන්න.

කථා "කෘෂි" සම්මන්ත්‍රණ ශාලාව සහ ලේඛනාගාරය,
කෘෂිකම් දෙපාර්තමේන්තුව,

පේරාදෙණිය.

மொலிவே ரூப் படிவா கலி பாநீத் துலயன்

பேரலோகநரூபி டீப்ரீனீகயே ஸோலிதநதூன் ஈரூத் துலயநலி
 மொலிவே லாது பால கிபடிவேலீ ஈநீகடாடாடிலீகீநீ கார்பிந துலிவே
 லுலா ஈந.

லீ பானீத் பிலீயேல கர, பப நேநீகர, பேலீயலி லீர்
 விபூரந லீ. பாலலிலலி டீந 10 நீ லயலீது லீலி பேலீ ஈநரலி
 பஈ ஸோலிதந ஸோடீநீ லிதூர் லநீ கரந லீ. வே ஈபூர் ஈரூத்
 பஈ கலிபூலீநீ கலிபாந லிந ஈநாநாரலி ஈநீகர ஸாநீலேநீ, கலி
 டூரலீநீ பப கடிலீய.

ஓநீபபூ லாது பால லிபிநீ காரலிநலி லீடீநய லீய. லேலி
 துலயேநீ கார்பிந லேய லாது பால கிபடிவேலி காநீ லலி, 9ல
 ஸோலிதநதூன் லீகீலாப கரநீ.

பம்பாய் வெங்காயம் நாற்றுகளை பெற ஒரு புதிய முறை.

பொலநதூவை விவசாயிகளின் பம்பாய் வெங்காய நாற்றுகளை
 களை வளர்ப்பதில் பல முறைகளை கையாண்டிருக்கிறார்கள்.

ஐந்தே போகத்தில் 13 விவசாயிகள் புதிய முறையை கையாள்
 யாள சம்மதித்தள்ளார்கள்.

- * உயர்த்தப்பட்ட மேடைகளில் விதைகள் இடப்பட முன்னர் மண்
 இறுக்கம் செய்யப்பட்டது.
- * மண் ஈரமாக இருக்கும்போது விதை வரிசையில் விதைக்கப்
 பட்டது.
- * விதைகள் முளைக்கும் வரை நீர் ஊற்றப்படவில்லை. 10
 நாட்களின் பின் நாற்றுகள் மஞ்சள் நிறமானதை தடைசெய்ய
 வரிசைகளுக்கிடையில் மண் குவிக்கப்பட்டு நீர் ஊற்ற ஒரு
 சீரான மேற்பரப்பு ஈற்றில் பெறப்பட்டு பயிர் நன்றாக வளர்ந்
 ததால் இம்முறை நாற்றுகளை நட நம்பிக்கை ஏற்படுத்தியது.

SUPPLY OF SEED POTATOES

(N.D. Albert - Agricultural Officer)

In Sri Lanka, about 50,000 tons of table potatoes are produced annually. To produce this quantity, amount of seed potatoes required is about 8000 tons per annum.

Import of seed potatoes at current rates cost about Rs. 50,000,000. Seed is often unobtainable in sufficient quantities. Due to shipping delays etc. seed cannot be supplied in time for planting.

Sale price of 1 ton of seed potatoes has increased from Rs. 2016/- per ton in 1972 upto Rs. 7280/-. Following are the quantities imported and costs involved.

Year	1973	1974	1975	1976	1977	1978
Quantity (Tons)	4195	3001	4330	3420	5090	N/A
Price per Ton (Rs)	2800	3360	4256	4928	6720	7280

The high cost of seed is a disincentive for small scale farmers.

Therefore to ensure supply of seed potato at a low price, local production of seed potato must be increased. In the past seed potato production was confined to 6 government farms. Recently a Private Seed Production Scheme was started involving the small farmer. Now these farms are producing 1200 to 1500 tons of seed potato annually. It is proposed to expand seed potato production in the Nuwara Eliya and Badulla districts.

Extent of land available in government farms for seed potato production is limited. Quantities produced are as follows:- (including small holders).

Year	1974	1975	1976	1976
Quantity produced in tons	799	1201	1086	1024

Therefore private sector and estate sector should be encouraged to grow about 1500 acres of potatoes exclusively for seed production, to produce the 8000 tons of certified seed potato to meet seed requirements of potato growers.

MAXIMUM USE OF LIMITED SEED POTATO STOCKS

(H.B. Herath & N. Ranatunga)

Inservice Training Institute - Bindunuwewa

Our potato growers face two problems. They are high cost of seed and difficulty of obtaining adequate seed quantities.

To explore means of overcoming this problem, a trial was conducted in Maha 1976/77.

Materials and methods :

Variety used :- Ginika.

Treatments :-

T₁ - Planting shoots, produced from seed potatoes in the stores (2ft. long shoots)

T₂ - Planting cut pieces (2 pieces from 1 tuber.)

T₃ - Planting cut pieces (4 pieces from 1 tuber.)

T₄ - Planting potato shoots raised in a nursery.

Plot size :- 16 sq.ft. per treatment.

Spacing :- 18" x 9" inches (in furrows).

Fertilizer levels :-

Urea	..	2½ cwt/acre
Concentrated super phosphate	..	6 cwt/acre
Muriate of potash	..	½ cwt/acre
Supplemented with a basal dressing of		
Dolomitic lime	..	16 cwt/acre
Deep litter refuse	..	40 cwt/acre

Method

Shoots were planted 2" deep. For treatments 2 and 3 tubers of 45 -55 mm size were selected and immersed in a solution of Dithane (1 oz. in 3 gallons water) before cutting. Shoots were raised in a nursery (for treatment 4) by planting tubers in a sand bed 4" deep, spaced 6 inches apart.

Results :-

All of the cut pieces produced Shoots. Growth of all plants in the field was good. In all the treatments, size and shape of harvested tubers was good. Yields are given below.

<u>Treatment</u>	<u>Yield per plot (lbs)</u>
(1) Shoots from stored tubers	40
(2) Tubers cut into two	47
(3) Tubers cut into four	40
(4) Shoots from nursery	31

Discussion & conclusions :

In this trial we observed that seed potatoes cut into 2 or 4, and planted in the field, gave satisfactory yields. The shoots arising from seed potatoes in store are not used now, but in the future it appears that they may be useful as propagules. In the nursery we observed shoots arose. Due to limited facilities their performance as planting material was not tested. We feel that further experimentation is necessary as this trial indicated that new possibilities are available to make the maximum use of available seed potatoes.



මෙම ලිපියේ සිංහල පරිවර්තනයක් 1977, භෞවිකම් සඟරාව.
21 වැනි කාණ්ඩයේ 3සත 4 කලාපයේ 104 පිටුවෙහි පලවී තිබේ.

IMPORT OF VEGETABLE SEED FOR YEAR

1979

Given below is information on varieties and quantities of vegetable seeds to be imported for planting in 1979. The total expenditure for purchase of these seeds is Rs. 31,737.401.49.

Crop & Variety	Quantity (lbs)	Country of Origin
(1) Beans - Top Crop	175,000	U.S. & Denmark
(2) Beans - Wade	70,000	U.K. & Denmark
(3) Beans - Kentucky Wonder Green	50,000	U.K. & Denmark
(4) Beans - Kentucky wonder Wax	30,000	U.K. & Denmark
(5) Beans - Cherokee Wax	20,000	U.K.
(6) Beet - Crimson Globe	28,000	South Africa
(7) Beet - Top Market	10,000	France
(8) Beet - Detroit-Dark red	10,000	U.S.
(9) Leeks - Large Long Summer	30,000	France
(10) Cabbage - A.S. Cross	7,000	Japan
(11) Cabbage - K.V. Cross	7,000	Japan
(12) Cabbage - S.D. Cross	2,750	Japan
(13) Cabbage - Gloria F.I.	1,000	Denmark
(14) Cabbage - Hercules	2,500	Japan
(15) Cabbage - Leo 80	500	Japan
(16) Cabbage - Big Cropper	750	Japan
(17) Carrot - Cape Market	25,000	South Africa
(18) Carrot - Top Weight	10,000	France
(19) Carrot - Nantes Half Long	6,000	US
(20) Carrot - Kurudo Chantenay	500	France
(21) Cauliflower - Early Phenomenal	150	Holland
(22) Cauliflower - Early Patna	200	India
(23) Kohlrabi - Early White Vienna	5,000	India
(24) Pepper - Hungarian Yellow Wax	10,000	USSR.
(25) Radish - Japan Ball	15,000	Japan
(26) Tomatoes - Roma & Marglobe	1,000	France
(27) Onions - Red Creole	2,000	U.S.
(28) Kohl-Rabi - Early White Vienna	10,000	Denmark

<u>Crop & Variety</u>		<u>Quantity</u> (lbs)	<u>Country of</u> <u>Origin</u>
(29)	Lettuce - Grand Rapids	100	U.S.
(30)	Lettuce - Great Lakes	100	U.S.
(31)	Celery - Self Blanching	100	U.K.
(32)	Parsley - Extra curled Dwarf	100	U.K.
(33)	Brussels Sprout	100	U.K.
(34)	Turnip - Purple Top White Globe	100	U.K.
(35)	Broccoli	100	U.K.

1979 வகை ஈதலா சரவரூ வரீர் தானகல

கோலா, கிரீரூ, காரூ தாடி வரீரே சரவரூ வரீரூ
கலா, கலா சரவரூ வரீர் வரீரூ கலா ஈதலா வரீரூ
கலா 31,737,401.49கி.

1979ம் ஆண்டில் மரக்கறி விதை இறக்குமதி.

மரக்கறி விதைகளை பிறநாடுகளிலிருந்து இறக்குமதி
செய்ய விவசாய திணைக்களம் நேரடியான நடவடிக்கை எடுத்
துள்ளது. இதற்கான செலாவணி ரூபா 31,737,401.49
சதம் ஆகும்.

சூரூதூ

சூரூதூ கட்டுரைகள் எந்த மொழியிலும் கொடுக்கலாம்.
கட்டுரைகள் அனுப்பப்படும் மொழியில் பிரசுரிக்கப்படும், அத்
டன் மொழிபெயர்க்கப்பட்டு மற்றும் இரு மொழிகளில் வெளி
வரும்.

கேள்விகளுக்கு இணங்க கட்டுரையின் மூல மொழிபெயர்ப்
பையும் பெற்றுக்கொள்ளலாம்.

எல்லாத் தொடர்புகளும் பின்வரும் விலாசத்திற்கு அனுப்ப
வேண்டும்.

- இதழ் ஆசிரியர்-சூரூதூ
- ஆவணப்பகுதியும் கட்ட மண்டபமும்
- சமத்தொழிற் திணைக்களம், பேராதனை.

TO ENSURE ADEQUATE SUPPLY OF CERTIFIED VEGETABLE SEED

H.B. Basnayake - Agricultural Instructor
Vegetable Seed Centre- Gannoruwa

Vegetables supply vitamins and many other body building elements, which are essential for a balanced human diet. Therefore plentiful production and consumption of vegetables is essential.

Vegetable breeders as well as growers look for certain characteristics when selecting varieties or strains. Some of them are, high yield potential, early maturity, adapt ability to locality, market value, resistance to pests and diseases and keeping quality.

Such good varieties have been evolved by plant breeders. Seeds of exotic vegetable varieties (normally grown in the up country area) are imported. But most of vegetable crops grown in the low country regions are raised from locally produced seed. This seed is produced both by the Department of Agriculture and vegetable growers.

About 30% of seed used for planting is estimated to be produced by growers. Such seed may not be upto desired standards and higher prices prevailing in the market for fresh vegetables may influence the farmer to give up seed production during certain seasons. The result? A severe scarcity of seed during the next season.

Therefore sound system for production of certified vegetable seed must be launched. The Department of Agriculture has about 20 farms where certain quantities of low country vegetable seeds are produced. About 400 acres are utilized to produce approximately 60,000 lbs. of seed annually. This comprises of 15,000 lbs. of gourd seed, 12,000 lbs. Ban dakka seed, 10,000 lbs. of Me (Cow-pea), 3,000 lbs. cucumber seed and 10,000 lbs. each of capsicum and brinjal. It may be difficult to increase the acreage and produce full seed requirement of all our farmers by confining seed production to government farms.

කොත්තමල්ලි.

පී.දයානන්ද මහතා - (කෘෂිකම් උපදේශක.)

මාෂධයක් වශයෙනුත්, ව්‍යවස්ථාපිත රසවත් කරගැනීම සඳහාත් අපට අවශ්‍ය කොත්තමල්ලි දැනට පිටරටින් ගෙන්වනු ලැබේ. මේ සඳහා අවුරුදු 5 ක කාලසීමාවකදී කොත්තමල්ලි භාණ්ඩ 128, 000 ක් ගෙන්වීම සඳහා රුපියල් 8, 800, 000ක් වැය වී ඇත.

දෙශීය අවශ්‍යතාවය පිරිමසා ගැනීමට, කොත්තමල්ලි වගා කරමු. ඉතා සාර්ථක ලෙස උඩරට වියලි කලාපයේ සහ පහතරට වියලි කලාපයේ මෙම භේෂය වගා කල හැක.

වගා කරන කාලය - උඩරට වියලි කලාපයේ කොත්තමල්ලි සිටුවිය යුත්තේ අප්‍රේල් මැයි හෝ ජූනි මාසයේදීය.

පහත රට වියලි කලාපයේ ජූනි මාසයේදීත් වාරිමාර්ග පහසුකම් තිබේනම් දෙසැම්බර් මාසයේදීත් සිටුවීම සුදුසුය.

මීර ප්‍රමාණය - අක්කරයක් සිටුවීමට මීර රාත්තල් 10 - 15 ක් ප්‍රමාණවත්ය.

(වැපිරීමට පෙර කොත්තමල්ලි මීර පියලි කල යුතුය. පයින් පැහිමෙන් මීර පියලි කල හැක. මීර යනුවෙන් අප හැඳින්වීමට පුරුදුව ඇත්තේ කොත්තමල්ලි ගෙඩි වලටය.)

වගා කිරීම - ඉතා සිසුවී ලෙස පස සකස් කරන්න. අක්කරයකට ගොම පෙර මොත් 05 දත්වා යෙදීම ප්‍රයෝජනවත්ය. පියලි කල මීර සිටුවීමෙන් මීර ඉතිරිවීමත්, ඒකාකාර වශාවත් ඇති කර ගැනීමටත් ඉඩ ලැබේ.

සිටුවීමේ පරතරය - ජේලි අතර 9 -12 සහ පැල අතර 4 -5
පරතරයක් ඇතිවන පරිදි බීජ සිටුවන්න.

වගාවට සාත්ත කිරීම - වසරා දින 10-12 අතරදී බීජ පැලවේ. බීජ
පැලවී සති 2 - 3 අතරදී වල් කෙලා පස් ධුරුල් කර පැල මුලට
පස් යොදන්න. (සාමාන්‍ය කෘෂි උවදුරුවලට පෙතිව්‍යෝජිතයන් අවුත්ස
යන් වතුර ගැලුම් 3 ක මිශ්‍රකර ඉසිය හැක.)

වගාව පිිදීම - පැලවලට වයස සති 8 - 10 අතර වූ විට මල් හට
ගනී. මල් පිපීමේ සිට අස්වැන්න මේරීම තෙක් දින 45 - 60
පමණ ගත වේ. මේ කාලසීමාවේදී වියලි කාල ශුණයක් අවශ්‍යයි.
වණිච ඇතිවුවහොත් පිටිපුස් රෝගය ඇතිවීම වැලැක්වීමට දියසිරාව
බැසයාමට ඉඩ සලස්වා, වගාවට ගෙත්තහම් කුඩු ඉසින්න.

අස්වනු තෙලීම - සිටුවා මාස 4 1/2 - 5 අතරදී, බීජ මේරා විට
පැල උදුරා, තරමක් චේලෙන්ට හැර, කෝටුවකින් ගැසීමෙන් හෝ
පසින් පාශා ඇට වෙන් කර ගන්න.

අස්වැන්න - අක්කරයක වගාවකින් බීජ රාත්තල් 800 සිට 2000 දක්වා
ප්‍රමාණයක අස්වැන්නක් ලැබේ.

විශේෂ කරුණු - පොහොර යෙදීම - තිත්තවලී පර්යේෂණ මධ්‍යස්ථානයේ
දී පහත සඳහන් අයුරු පොහොර යෙදීම කරන ලදී. අක්කරයට
පාදිය පෝර මිශ්‍රණය, (යූරියා භොණ්ඩර 1/2 මිසුරියේට් මිජ පොටාෂ්
භොණ්ඩර 1/2 සහ සාන්ද්‍ර සුපර් පොස්පේට් භොණ්ඩර 1 යි.)
පැලවී සති 3 දී යූරියා භොණ්ඩර 1/2 ක් සහ සිටුවා සති 6 දී
යූරියා භොණ්ඩර 1/2 ක් යොදන ලදී. පොහොර යෙදීමෙන් ලැබුණු
අස්වැන්න අක්කරයට රා 2000 පමණ විය.

CORRIANDER

Corriander seed is the fruit of *coriandrum sativum*. Sri Lanka is the largest importer of corriander in the world.

Corriander can be successfully grown in the low country and up country dry zone areas. The crop flowers in about 60-70 days after sowing. The crop can be harvested 45-60 days after flowering.

Yield can vary from 800 - 2000 lbs. per acre.

கொத்தமல்லி.

கொரியன்டிரம் சட்டைவத்தின் பழம் தான் கொத்தமல்லி விதை. உலகிலேயே அதிகப்படியாக இறக்குமதி செய்யும் நாடு இலங்கை.

கொத்தமல்லி மலைப்பிரதேசத்திலும், பள்ள பிரதேசத்திலும் உள்ள வறண்ட நிலத்தில் நன்றாக வளரும், பயிர். நாட்டில் 60-70 நாட்களில் பூக்கும். பூத்து 45-60 நாட்களில் அறுவடை செய்யலாம். இதன் விளைவு 800-2500 இரூ/ஏக்கர். தின்னவேலியில் இது நன்றாக விளைந்து 2000 இரூ/ஏக்கர் விளைவை தரும்.

JAFFNA DISTRICT AGRICULTURAL PRODUCERS' ASSOCIATION

An Agricultural Producers' Association has been recently formed in Jaffna district. Safeguarding the interests of the farmers is their main objective. This Association has highlighted the need for governmental action to prevent adulteration of fertilizers and agro chemicals by some unscrupulous dealers and a more reasonable floor price for chillies and onions. An estimate of the cost of production (for Maha 78/79) worked out by this Association gives the cost of production of dried chillies at Rs. 8/93 per lb. and of red onion at Re.1/35 per lb.

PROMISING PLANT TYPES OF CITRONELLA FOR HIGH YIELD AND QUALITY ESSENTIAL OIL

E.E.Iruthayathas, H.M.W.Herath and S.Balasuabramaniam
Dept. of Agricultural Biology, Faculty of Agriculture
University of Sri Lanka, Peradeniya.

Citronella oil is one of our traditional exports. The acreage under this crop dropped from 14,000 hectares to around 6,000 hectares due to following reasons :-

- * Decrease in demand for Sri Lanka oil.
- * Poor yields obtained from the existing cultivars.

Oil produced from mixed cultivars is of poor quality, due to presence of undesirable chemical constituents in large amounts. Thus it was necessary to isolate a high yielding plant type that produces oil of high quality. The industry should be rehabilitated because the world market prices which were low through out 1965 - 1970 have now recovered.

A detailed study was undertaken on the local germplasm of citronella along with an introduced Java pengiri/Maha pengiri type from India. Trials were conducted to identify and characterize the ten local clones and the introduced clone. Of these the clone HI₉ produced highest yield and its oil was of high quality.

Strain HI₉ is a Sri Lankan Maha Pengiri type. It produces about 330 Kg/ha/year of oil which is three times that of the average yield (90Kg/ha/year) of Sri Lanka commercial plantations. The essential oil from this strain consistently had high citronellal content (20-40%), total oxygenated constituents (60-70%), and total acetylisables (70-80%). These are commercially desirable constituents. This essential oil also has low terpene hydrocarbons, camphenebornane constituents and volatile phenolic derivatives which are commercially undesirable constituents. Since this strain produces superior quality oil it is important to replace the existing cultivars in Sri Lanka plantations with this selected strain. Lever Brothers Limited is engaged in multiplication and distribution of this strain to the farmers in Walasmulla area.

Strain HI₆ (an introgressive hybrid of Maha pen giri, Lena batu and Mana grass) could serve as a plant type that produces oil with very high nerolidol. This particular constituent is a valuable compound used in pharmaceutical preparations. The oil of this plant type contains about 20 - 45% of nerolidol that could be easily fractionally separated.

Planting materials of these promising plant types are available from the Department of Agricultural Biology, Faculty of Agriculture, University of Sri Lanka, Peradeniya.

වැඩි අස්වනු ගෙන දෙන පැහිරි වර්ග

එච්.අයි.9 නමැති මහ පැහිරි වර්ගය ඉතා උසස් අස්වැන්නක් (හෙක්ටාර් 10 තෙල් කිලෝග්‍රෑම් 330ක) ලබා දෙයි. මේ වර්ගයේ තෙල් සහජවත් ගුණාංගවලින් යුක්තය. දැනට ඇති මිශ්‍ර වගා වලින් ලැබෙන අස්වැන්න අඩු අතර (හෙක්ටාර් 10 තෙල් කි. ග්‍රෑ. 90 කි) එම තෙල් වල තහයද සතුටුදායක නොවේ.

සෙසු වර්ග වලට වඩා වැඩිපුර තෙරෝලිඩොල් නමැති රසායන ද්‍රව්‍යය අඩංගු තෙල් ලබා ගත හැකි එච්.අයි. 6 නමැති වර්ගයද උසස් අස්වනු ගෙන දී ඇත.

මෙම දෙවර්ගයේ පැල පේරාදෙණිය සරසවියේ කෘෂි විද්‍යා අංශයේ ඊට විද්‍යා දෙපාර්තමේන්තුවෙන් ලබාගත හැක.

පුළුඹු සිහින්රසෙල්ලා ඉනිඟුන්.

කලப்பு සිහින්රසෙල්ලාලීලිඟුන් වැරදුණු 90 කි.කිලෝ/ ගෙරුක්. ඒකකයක් විවිධාකාරව පෙරහිටුවනු ලැබූ. ඉතාමත් තර්ථව ඉතාමත් සිහින් පුළුඹු ඉනිඟුන් ගොඩනැගීමට. 9 ක්කයක් වැරදුණු 330 කි.කිලෝ/ ඒකකයක් ඉතාමත් සිහින්රසෙල්ලා පෙරහිටුවනු ලැබූ. ඉතාමත් සිහින්රසෙල්ලා පෙරහිටුවනු ලැබූ. ඉතාමත් සිහින්රසෙල්ලා පෙරහිටුවනු ලැබූ. ඉතාමත් සිහින්රසෙල්ලා පෙරහිටුවනු ලැබූ.

SOME TIPS ON GROWING SOYA*

- 1: Get your seed from the Department of Agriculture.
- 2: Good soil tilth ensures uniform seed germination. Therefore thoroughly prepare the land for planting.
- 3: Level the soil (before seeding) to avoid depressions where water may accumulate during rainy weather.
- 4: Avoid water-logging. It causes poor seed germination and irregular stand of crop
- 5: Plant soybean seed only in fairly moist soil. (It requires more moisture than cowpea or greengram for germination.)
- 6: Planting depth must be 1 to 1/2 inches.
- 7: Don't plant during very wet weather when soil tends to be sticky. (Subsequently soil dries up forming a crust which interferes with seedling emergence.)
- 8: Try to get a good uniform stand of the crop from the very beginning.
- 9: From 3rd.day after planting employ bird scarers during early morning and late in the evening if Ash Doves, Pigeons and Parrots are found in your farm.
- 10: Hares neatly clip off seedlings just above the Cotyledons They attack seedlings shortly after dusk (about 7 P.M.) or just before dawn (4 - 5 A.M.)
- 11: To destroy hares spray a Parathion insecticide 1 oz. in 3 gallons of water.

* extracted from "Soyanews". Vol.1 No. 2
October 1978.

NITRAGIN - SOYBEAN INNOCULANT

(How to Store, transport and Use)

- (1) 'Nitragin' Innoculant packets should be stored under cold storage until used; otherwise the efficiency of the innoculant will be lowered.
- (2) While transporting use a large mouthed Thermos flask or a cool box which will prevent the Innoculant from direct exposure to heat and light.
- (3) After transport to the destination store the Innoculant packets in a refrigerator until time of use.
- (4) One 8 oz. pkt. of Nitragin is sufficient for 80-120 lbs. of seed. *When small quantities of seed are used to plant small extents 8 oz. pkts. may be opened and made into 4 oz. pkts., 1 oz. pkts. and $\frac{1}{2}$ oz. pkts. as required. Store them after repacketing in a refrigerator.*
 - 4 oz. Innoculant will be sufficient for 40-60 lbs. seed.
 - 1 oz. Innoculant will be sufficient for 8 -12 lbs. seed.
 - $\frac{1}{2}$ oz. Innoculant will be sufficient for 4 - 6 lbs. seed.
 - $\frac{1}{4}$ oz. Innoculant will be sufficient for 1 - 3 lbs. seed.
- (5) Just before seed is required for sowing take the quantity of seed into a clean vessel or spread it on clean floor depending on the quantity. Sprinkle little water over the seed and thereafter sprinkle the Innoculant powder over the seed. Mix well till the Innoculant powder gets adhered to the seed coat and allow to dry in *SHADE* for about 15-20 minutes before sowing.
- (6) It is very important to *sow the treated seed into moist soil. Don't sow into dry soil.* Planting depth should be not more than 1 - 1 $\frac{1}{4}$ inches.

"කයිට්ටුපත්" සෝයා බෝංචි එන්නත ගබඩා කිරීම

1. පෘථිවිවියට ගන්නා තුරු "කයිට්ටුපත්" එන්නත් පැකට්ටු ගබඩා කර තැබිය යුත්තේ ඹහ ගබඩාවේය. එසේ තොකළහොත් එන්නතෙහි ක්‍රියාකාරිත්වය ඹහ වේ.
2. ප්‍රවාහනය කිරීමේදී භාජනයට හා ආලෝකයට එන්නත කෙලින් ම භාජනය නොවන සේ කට පළල් හර්මෝස් ජලාස්කුවක් හෝ ඹහ පෙට්ටියක්, එන්නත ගෙන යාම සඳහා පෘථිවිවි කරන්න.
3. ගමනාන්තය තෙක් ප්‍රවාහනය කිරීමෙන් පසුව, පෘථිවිවියට ගන්නා තුරු එන්නත් පැකට් ඹතකරනයක අසුරා තබන්න.
4. අවුත්ස 8 වේ කයිට්ටුපත් පැකට්ටුවක් බීජ රාක්කල් 80 - 120 ක් සඳහා ප්‍රමාණවත්ය. සුලු බීජ ප්‍රමාණ අවශ්‍ය වන විට අවුත්ස 8 වේ පැකට් විවෘත කොට අවශ්‍ය පරිදි කුඩා පැකට් වලට සාදා ඹතකරණයේ අසුරා තබන්න.
 - බීජ රාක්කල් 40 - 60 දක්වා අවුත්ස 4 යි
 - බීජ රාක්කල් 10 - 15 දක්වා අවුත්ස 1 යි
 - බීජ රාක්කල් 5 - 7 1/2 දක්වා අවුත්ස 1/2 යි
 - බීජ රාක්කල් 2 1/2 - 3 3/4 දක්වා අවුත්ස 1/4 යි
5. බීජවලට ජලය ස්වල්පයක් ඉස ඊට පසුව එන්නත් කුඩ වී මස ඉසින්න. බීජ පොත්තට මෙම කුඩු මිශ්‍රණය අල්ලන තුරු මිශ්‍රකරන්න. වැපිරීමට පෙර විනාඩි 15 - 20 ක් සෙවනේ වේලා ගන්න.
6. ප්‍රතිකාර කල බීජ ඔත් පසෙහි වැපිරීම ඉතිරිව වැදගත්ය. වියලී පසෙහි බීජ වැපිරීම නොකළ යුතුය.

REAR RABBITS

(These are some facts about them)

E.A.Dias (Subject Matter Specialist)

- (1) Four does and a buck can produce more meat annually than the average beef animal.
- (2) One doe can produce 160 pounds of (live weight) meat annually. Area required is 16 square feet.
- (3) Rabbits can be bred at any time of the year.
- (4) One buck can produce more than 500 Offspring/year*
- (5) Gestation period of a doe is 30 to 32 days.
- (6) A new-born rabbit has a birth weight of 2 to 3 ounces. In 8 weeks it will grow to a weight of 4 to 5 lbs.
- (7) A rabbit can convert four pounds of feed to one pound of meat.
- (8) Rabbit meat is easily digested and it is a good source of protein.
- (9) The rabbit is the only animal that will produce 10 times its own weight in a year.
- (10) Rabbit meat can be prepared in more than 300 different ways.
- (11) Fur of the rabbit is lighter and warmer than that of any other animal except the vicuna and Musk ox

**These figures apply to selected meat breeds under good management.*



காழித் தரிக் கிரீசு

உள் கிபடிவிலே காலியாடு தரிக், வெதத் சயி வெடுடுடு வெடு
டுதத் காலியாடுத் காழித் சயுட. உள் கா டெதெது வெயினடி விதி தரிக்
பாடுழித் சயியாவெத் சீடு றெ ருத்றடு 160 த் கிபடிவா னத கால.
லே சயுகா தடுயா வெத் தடு 16 த் சலுகி. சீடு றெ ருத்றடுத்
பாடுவிலே சயுகா காவெதுடு தடுயா வெத்றே தாசார ருத்றடு 4த் சலுகி.

கா உள் சேசயடுதாடகட. சாட சததடுதாது, உள் வெதெவீத்
தடுதாது. கா டெதெததே காலி காலடி திக 30 - 32 தத்வாட. உள்
பெடுடு கா டெதெது பாடுழித் 4 - 5 சலுகி சூதத தரிக்றீசு. உள்
வெயினடி உத கா டெதெததேத் பாடுவீ சூடு 5த் டுதா னத கால. வெயே
கிதாடு காலடுசாவதடி கா டெதெது சவீடு தாலீசு கால.

ஓடுதெ தடுயேடுவாதடி கா பாடுவது தடுழித் 2 - 3 சலுகி றெடுட.
காடுடு வெயின கா பாடுவது காடுடு சாலத தயிடத் டடுதே தரிக் கிரீசுலெத்
சயி 8 டி ரு 4 - 5 த சலுகி சீடு றெடுடுத் சூத்ற வெயி.

முயல் வளர்ப்பு.

4 பெண் முயலும் 1 ஆண் முயலும் வருடமொன்றுக்கு ஒரு
மாட்டை விட கடுதலான இறைச்சியையும் ஒரு பெண் முயல், ஒரு
வருடத்தக்கு 160 இறுத்தல் உயிர் நிறை இறைச்சி கொடுக்கும்.
மிகவும் சூதெந்த தற்ப காலம் (30-32) உடைய முயல்
2-3 அலுன்ல் நிறை உடைய சூட்டிகள் போட்டு அவை 8 கிழமை
களில் 4-5 இறுத்தல் நிறையை அடைகின்றன. இவ்விறைச்சி
இலகுவாக சேயிபாடு அடைவதால் அதிகரித்த உணவை புரதமாய்
மாற்றுகின்றன. ஒரு வருடத்தில் 10 மடங்கு நிறையை அடையும்
தன்மை முயல் வளர்ப்பின் இலகுவான நன்மையைக் காட்டும்.

HELP TO PREVENT "FOOT & MOUTH DISEASE"

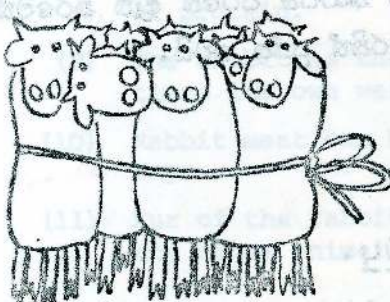
W.H.S.Fernando (VRO)

Once in 4 to 6 years, this disease flares up in epizootic proportions, throughout Sri Lanka. The disease spreads mainly by the transportation or movement of cattle and buffaloes from affected areas to other areas. Vaccination is ineffective unless at least 80 to 90 percent of the susceptible animals are vaccinated annually.

The vaccine is very expensive. Sufficient vaccine to immunise this number of animals is not available. Legal provision is provided in the Contagious Disease (Animals) Ordinance to restrict transportation and movement of susceptible animals from affected areas to other areas. The provisions of the Ordinance must be effectively applied to prevent spread of this disease.

நூர் கா சூவி ரோගை பரிகரிடு வுருவது.

ஸ்பெஷல் கா லீ ஸ்பெஷல் காமின் காது கெடையலி
கிசா மெல ரோගை ஈபூரூது 4-6 கடு வகாவதன்
கூகாவ சூரா பரிகரே. ரோගைடு கைதுரூ பீச
காமி ஸ்பெஷல் கை 80%-90% சூலாககன் பன்கன்
கிரீகென் கெல ரோගை பரிகரிடு வுருவீச கக.
கே கதுகா ஈபுளக கரலீ பன்கன் கார கலாகை
கைகாமி கிசா ஸ்பெஷல் சூலாககை கிரீகே சகை
கூபீகெச கிசாந்லக கிரீகெ ஓகா வுருகன்ச.



இலங்கையில் காய்கூரை நோயின் பரவல்.

இலங்கையில் 4 தொடக்கம் 6 வருடங்களுக்கொரு முறை மாடுகடும், ஂருகைகடும் கால்வாய் நோயால் தாக்கப்படுகிறது.

இந்நோய்க்கு தடுப்பு மருந்து கிறக்குமகி கெய்ய ககிக
கெலவாகைதாலும் முற்றுக தடுப்பில்லாததாலும் கலகூரில்
நோய்க்கு கூட்படக்கடிய கிருகங்க கை பாகிக்கப்பட்ட இடத்தி
லிருந்து வேறு இடத்துக்கு கெகாண்டு கெல்வகையும் தடுப்பதால்
தான் காலத்துக்குக் காலம் பரவும் இந்நோயை ஓரளவு கட்
டுப்படுத்தலாம்.

IPIL - IPIL (Leucaena leucophala)

Miss N.P.U.de Silva

(Experimental Officer, Documentation Centre)

Introduction

This tropical plant has high protein foliage which is a nutritious livestock feed. During droughts when other plants wither and die Leucaena continues to provide green feed.

Botanical Characteristics

Leucaena belongs to the family Leguminosae and it can form a mutually beneficial partnership with soil bacteria of the Genus Rhizobium. If the correct Rhizobium strain is present Leucaena can fix more than 500 Kg. Nitrogen per ha (500 lb/ac) equivalent to 2,500 Kg. ammonium sulphate per ha per annum (2,500 lbs. per acre per annum).

This plant is called Ipil-ipil in Philippines (and in Sri Lanka too). It has many strains. They differ enormously in size and form. The short bushy Hawaiian type grows up to 15 ft. and flowers when very young and continues flowering throughout the year. Salvador type (also known as arboreal or Guatemala type) grows up to 65 ft. in height. It produces twice the biomass of the Hawaiian type. Peru type is similar to Hawaiian type and produces extremely high quantities of foliage.

In areas where Ipil-ipil has never been grown the seed must be inoculated with an appropriate Rhizobium strain before sowing. Fine roots and root hairs of Ipil-ipil are also infected with a mycorrhiza fungus. It helps the plant to obtain phosphorus and other nutrients enabling growth in soils low in minerals such as phosphorus.

As an animal feed

Ipil-ipil foliage is highly palatable, digestible and nutritious. Its suited for feeding cattle, buffaloes and goats. Beef and dairy cattle can live on Leucaena feed alone for a considerable period (nearly 3 months). But large amounts of Leucaena feeding leads to mimosine toxicity which can be avoided by supplementing leucaena with other forages in correct proportions.

Nutritive value of Ipil-ipil

Leaves of *Leucaena* contain 27-34% protein and sun dried leaflets are exported from Malaysia, Thailand and Philippines to Japan and Singapore as an animal feed. *Leucaena* is also a rich source of Carotene and Vitamin "Provitamin A" content in *Leucaena* is the highest ever recorded in plant specimens. It is also rich in Xanthophyll pigments which improves egg yolk colour and broilers fed on *Leucaena* gain a brilliant yellow colour on their skins. But it is advisable to restrict percentage of Ipil-ipil to 5 per cent in poultry feed.

Other uses of this crop

Ipil - ipil enriches the soil. Constant leaf-drop makes it a most efficient and regular recycler of plant nutrients. Ipil-ipil foliage placed around crop plants respond with yield increases approaching those manured by commercial fertilizer. Some fruit trees inter-planted with Ipil - ipil had shown growth increases over those planted on pure stands or with other species. It has proved to be a good "under Storey-fertilizer crop" for coconut. It increases soil humus content, rebuilds tilth and surface texture, breaks up impervious subsoil layers, improves water absorption, reduces soil moisture evaporation and reduces soil erosion by providing a good soil cover.

Where it can be grown

It thrives well on steep slopes, marginal soils and withstands long droughts. For restoring forest cover to water sheds, slopes, and grass-lands that have been denuded through reforestration or fire it is an excellent crop.

Some countries grow Ipil - ipil as wind breaks for shading or ornamental purposes and roadside beautification. Where shifting cultivation is done, no other Plant is as efficient in restoring soil fertility in the shortest period of time as Ipil - ipil.

What we should do

It will be useful to conduct research studies on Ipil-ipil, to evaluate its usefulness (in many disciplines including plant animal and agronomical benefits) in the various agro-climatic regions in Sri Lanka.

SUCCESSFUL AGRICULTURAL DEMONSTRATIONS

APPLYING EXTENSION TECHNIQUES TO CONDUCT SINGLE ANIMAL PLOUGH DEMONSTRATIONS IN KURUNEGALA DISTRICT.

(M.W.P.P.Gunasekera, A.I. Extension Methodology,
Kurunegala District).

Any extension activity should have well defined objectives, i.e. "for better acceptance." This can be achieved by applying appropriate Extension Techniques.

Nine demonstrations were carried in Kurunegala District, to popularise the use of single buffalo plough.

The Subject Matter officers(Mr.D.B. Niyangoda, AI Farm Machinery and myself) got together with the Range AII.

- * We discussed and identified objectives.
- * We planned our work.
- * We got the willing support from the DAEO and others to conduct these demonstrations.

These demonstrations deviated from stereo type teaching by :

- * Avoiding usual long lectures.
- * Avoiding casual way of organising.
- * Trainer developed skills.
- * Planning to use "sight of the learner" to maximum advantage.
- * Thorough planning and preparation of each step of the demonstration
- * Farmers were given preference and recognition than usual.
- * Demonstrators were well trained, to do a good job at the demonstration.

Objectives of the demonstration :

- (1) To get more and more farmers interested in using single animal plough (to use ONE animal instead of TWO.)

- (2) To demonstrate - hitching the plough
- ploughing
- advantages of this method.
- (3) To provide opportunity for farmers to see the new model and the village plough being operated under similar conditions.

Audience :

Farmers and officials serving in the area.

Steps followed :

- (1) Selected a site, date and time convenient to farmers.
- (2) Trained animals and demonstrators well ahead.
- (3) Adequate publicity - (Who, What, When and Where?)
- (4) Thorough planning of each step.
- (5) Step by step presentation of the demonstration.
- (6) Maximum involvement of the participants.
- (7) Providing observers opportunity to practice.
- (8) Reinforce messages by appropriate comments.
- (9) Follow-up and evaluation.

How we communicated :

We did not give long lectures. Instead we made the best use of following visual aids supplemented by brief comments - (83% of what we remember in what we have seen.)

- (1) Conducting method demonstration.
- (2) Exhibit the real thing.
- (3) Posters (drawn by ourselves).
- (4) Film show.

Follow up and evaluation :

- * Many farmers have become interested in getting information, and usage of the plough. (Reports from local AI's.)
- * Requests have been made by MP's in the district to conduct these demonstrations in their areas.
- * Several blacksmiths have locally turned out single animal ploughs. (with slight modifications).

நாசிக்லி டாடரீஸன்

டீர்ஸ டேஸன ஸ்ரீலாண்டில வெறுவெ, டாஸயாடார் டபஸேயீ னர்
ஸகிலீன் ஸேலீன் "பலீலீல ஓடிடுபன் னீரீல" லடுடாயகல.

னகி ஸல னஸூலீன் னீ ஸாலே டாடரீஸன் னயன் னூரஸூஸூ டீலீஸீலகலே
பலீலீல டீ.

லயாஸ்கி லூ டலீ ஸூ ஓஸா ஸூலீலீலீலீல, டாடரீஸனல ஸலீலீல
னீலீலீல, ஸ்ரீலாண்டிலீல னீஸா லே டாடரீஸன ஓஸால ஸார்லீல லீல. லீல
புடேஸலூ னலீலீல னர்லீல னீபடேஸனலு புடேஸலூ ஸூலீல ஸூ லேலீல
னலீ னலீலீல னகிஸல னஸூலீ னீபடலா டாஸ.

லீலஸாய னாடீரீஸீ டெய்கல.

ஓடாஸகல் னாலட்ட லீலஸாய லரீலலாக்க ஓலலலலகடீலீல
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SHORT TERM TRAINING COURSES

(S.D. Wifegunawardene - Agricultural Officer)

A survey was concluded by the Division of Education, Training and Information to assess the effectiveness of short term courses, conducted by the Department of Agriculture.

The survey revealed the following information :-

o 98% of the persons interviewed were engaged in crop husbandry (paddy 46% and highland crops 42%)

o Of those trained 60% were farmers, 47% employees, 15% students and 8% were part time farmers.

o 90% of the trainees were 30 years or less in age. 47% of them were between 21 - 25 years of age.

o The desire for training was attributed to

(a) Improving their present practices ... 37.5%

(b) For better employment opportunities ... 18.3%

(c) Both (A) & (B) ... 18.3%

(d) Cannot give a definite answer 25.9%

o 99% of those interviewed stated that the course satisfied them. The reasons given by them were that they learnt better crop (and livestock) management practices, about growing new crop varieties.

o Their future expectations from the department are -

- Re-training ... 68.3%

- Good seed and planting materials 65.62%

- Meeting field staff more often 71.42%

- Obtaining chicks, calves etc. 68.75%

DEVELOPMENT OF WATER RESOURCES IN THE HILL COUNTRY REGION

(Land & Water Use Division)

The flash flood damage to channels, waterways and lands during the rainy season is a very serious problem experienced, especially by the paddy farmers in the mid-country hilly areas. Flash floods cause severe damage to the paddy crops in the valleys causing serious crop losses. During rainless periods the streams run dry and there is no adequate water for irrigating paddy crops. Then yields are severely reduced due to moisture stress. The country's present need towards increased food production requires that the available land is used very intensively adopting long term good management practices.

It is a short sighted policy to improve present yields, without regard to long term use of the country's natural resources. We should use land, giving due consideration to long term effect on soil productivity. But planning more intensive agricultural development is handicapped by lack of knowledge about the hydrological balance and how it might be effected by changing land use.

For planning more intensive agricultural development, useful basic information has to be collected and that requires considerable amount of research effort. This research programme should yield information to achieve a better understanding of the complex soil and water management problems of the mid-country catchment areas.

The programme is operated by the Land & Water Use Division of the Department of Agriculture. P.I.C. is assisting by providing some of the equipment and specialist services.

For the needed research activity three representative sites of the mid-country region were selected. They are:-

- (1) Nanu Oya Watershed in Yatinuwara
- (2) Hantane Watershed in Hewaheta
- (3) Aluwala Watershed in Hanguranketa

(Uda Hewaheta)

DEVELOPMENT OF WATER RESOURCES

The work has already commenced in all the water sheds and the Nanu Oya Watershed will be under full operation this Maha season.

These studies have 3 main objectives :-

- (1) To measure the components of water balance and soil movement, under existing land use.
- (2) To assess the effects of alternative forms of land use.
- (3) To arrive at recommendations for better land use in this region.

In the initial phase of our studies, devices have been installed in streams, waterways, and channels with stage recorders to monitor the flow of water daily. Sediment transported will be estimated. Small scale and large scale runoff plots have been established under different types of land use, and slopes, with different intensity of ground water. A net work of recording and non-recording rain gauges have been installed to monitor the rain fall.

Changes in the water storage in the soil will also be monitored by a net-work of water table tubes and regular sampling of the soil profile above the water table.

The hydrology branch of the Irrigation Department would be gauging the larger streams and also do the rating for all rated stations in the catchments.

Eventually we hope to extend this work to other agro-ecological regions in the low-country and up-country.



A NEW ORGANIZATION TO SERVE FARMERS

On the 12th. September 1978, the Working Group on Rural Institutions, discussed regarding reconstitution of the Agrarian Services Department with effect from 1st. January, 1978.

The new Institutional arrangements proposed are:-

* The Commissioner of Agrarian Services will administer the proposed Agrarian Services Law. Authority will be delegated to the Deputy Commissioners and Assistant Commissioners of that Department to administer the new act.

* At the Divisional level the Agricultural Productivity Committees will be replaced by Agrarian Services Committees. Each Committee will consist of not more than 8 State Officers serving at the divisional level and persons nominated by the M.P. of the area. Cultivation Committees will be replaced by the Cultivation Officers. They will work under the Agrarian Services Committee.

* Agrarian Services Committees would be corporate bodies and will be eligible to get loans for purchasing and distributing inputs to the farmers of the area.

* The Committees will be under the direct control and supervision of the Assistant Commissioner Agrarian Services.

* A member of this Committee will be elected as the Chairman. He will serve for about one year in that capacity. The Divisional Officer, Agrarian Services will function as the Secretary of this Committee.

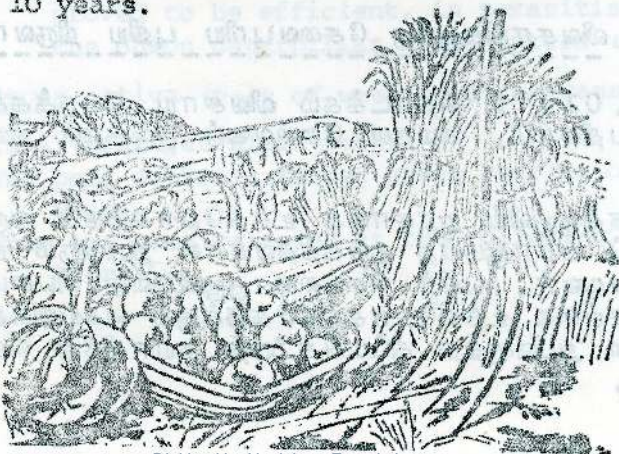
Extracted from Minutes of the Meeting of the Working Group on Rural Institutions held on 12th September 1978.

The Agriculture Department should give up commercial activities for example sale of seed paddy. Agrarian Services Committees will progressively take over these functions and make inputs available to the farmers.

Functions of the Agrarian Services Committees will be :-

- (i) Preparation of agricultural programmes on a 'Yaya' basis for each cultivation season.
- (ii) These programmes includes paddy, all subsidiary food crops, horticultural crops industrial crops, sericulture, floriculture animal husbandry and bee keeping.
- (iii) Preparation of long-term and medium-term programmes of development for the area.
- (iv) Sale of seed and planting materials, supplying inputs, and act as an agent for marketing organizations.
- (v) Management minor irrigation works. It is suggested that farmers will be involved for their maintenance.

The Committee recommends granting of adequate vehicle loans to officers and the loan recovery period be extended to 10 years.



BIOLOGICAL PEST CONTROL OPERATIONS IN 1978

(P.Manickavasagar - Plant Protection Officer)

Biological pest control is desirable because,

- * Expenditure incurred is minimal.
- * It eliminates use of pesticides.
- * Environmental pollution is avoided.

In 1978 following parasitic insects were imported. They were released at several locations, for observation.

	<u>Name of Parasite</u>		<u>Imported from</u>
(1)	Telenomus remus	-	Barbados and Trinidad
(2)	Eurytoma attiva	-	Malaysia
(3)	Schematiza cordiae	-	Malaysia
(4)	Paulinia acuminata	-	Fiji
(5)	Samea multiplicalis	-	Fiji.

Telenomus remus (Pest of onion caterpillar)

- * Is a minute dusky wasp.
- * It parasitises eggs of Spodoptera species.
- * These insects have been released in shallot onion plots in Jaffna Peninsula, for control of the onion caterpillar - Spodoptera exigua. This parasite, when introduced to West Indies, brought about effective control of some Spodoptera species given below :- (Spodoptera frugiperda, S.Sunia eridonia and S.Latifscia). But this parasite has not yet proved to be efficient, in parasitising on the onion caterpillar - Spodoptera exigua

Eurytoma attiva (Pest of weed cordia curassavica)

- * Is a (tiny jet black wasp).
- * The pest destroys tender green berries of this weed.
- * This has been released at the following locations :-

- (1) Near Sri Visudharamaya temple, Maligawatta, Colombo.
- (2) Maha Illuppallama Agricultural Research Station.
- (3) Padirippu, 23 miles from Batticaloa and 2 miles from Kalmunai, near Pillayar Kovil.
- (4) Malwatta - near 9/4 culvert on Batticaloa-Amparai road.

Schematiza cordiae (Pest of weed C.curassavica)

- * Is a dull grey beetle.
- * Its forewings are edged yellow.
- * This parasite is slightly bigger than the aulocophora beetle.
- * Cordia is a brush wood type weed introduced from British Guinea in 1887.
- * This pest has been released at the following locations:-

- (1) Maligawatta-Colombo (behind D.P.Jayasinghe garage and near Sri Visudharamaya temple).
- (2) Maha Illuppallama Agricultural Research Station (in the coconut block)
- (3) Pottuvil - near fuel filling station and the Elephant Brand cool drinks advertisement board.

පීට වීද්‍යා ක්‍රම මගින් පලිබෝධක මර්ධනය

රතුඹු වගාවට හානි කරන දලඹුවන්, සැල්විනියා සහ වියලි කලාපයේ වල්පැල වර්ගයක් මර්ධනය කිරීමේ ශක්තිය ඇති කෘමීන් වර්ග කිහිපයක් ගැන කෘෂිකර්ම දෙපාර්තමේන්තුව විවිධ ආරම්භ කර ඇත.

මැලේසියාව, ට්‍රිනිඩාඩ් සහ පිරි දූපත්වලින් මෙම කෘමීන් ගෙන්වා 1978 වර්ෂයේදී මහලුප්පලම, මඩකලපුව සහකොළඹ ඇතුළු ස්ථාන කිහිපයක මෙම කෘමීන් මුදාහරින ලදී.

AN ACCOUNT OF THE TRAINING & VISIT SYSTEM IN THE CHAMBAL COMMAND AREA OF RAJASTHAN, INDIA

Frank Saunders

The Training and Visit System of Agricultural Extension was introduced to the Chambal Command Area of Rajasthan in 1974 through a project assisted by Government of India and World Bank. The command area of the project is 229,000 hectares covering 68,715 farming families in 745 villages. The extension program covers six complete Development Blocks including non-irrigated land, thus covering 94,925 farming families in 1148 villages. It is, therefore, possible to compare production and extension performance in both irrigated and rain-fed areas. The average size of holding is 4 hectares. The climate is sub-tropical and the rainy season commences with the onset of the monsoon in June and lasts until September with a total rainfall of about 850 mm. The soils are uniform yellowish brown heavy clay loam, calcareous and with low organic content. They set hard and crack when dry and are difficult to work when wet. Water-logging is an increasing problem due to seepage from the canals, together with uncontrolled use of irrigation water and lack of drainage. Salinity problems are also developing.

Paddy and sorghum are the principal crops during the rainy season (kharif), wheat and grams in the winter. (rab) Sugar-cane is also important and the main crops under rain fed conditions are sorghum, pulses and oil-seeds.

Canal irrigation began to be available in the area in 1960 and a research station was established near Kota in 1965 with a sub-station at Digod to develop suitable cropping patterns and resolve farmer problems. Ineffective communication of research data to farming and slow development of irrigated lands led to the introduction of the T & V System in 1974.

The new methodology is based on "Concentration of efforts" and "determination of priorities". It aims to :-

- 1: help farmers to get the highest income from their available resources;
- 2: close gaps between what is known and what is practised by the farmers;
- 3: put pressure on researcher to solve the field problems faced by the farmers.

The Village Extension Worker (VLW) covers an area of about 1,500 hectares comprising an average of 400 farm families in 3 or 4 villages. These farm families are divided into eight clusters (chaka) each of about 50 families, whose fields are covered by 1 to 3 water outlets in the irrigated area. In each cluster of farms six "contact farmers" have been selected by the VLW, who visits them at fixed time on the same day each week. The contact farmers serve as innovators but are not themselves extension agents, nor do they receive any reward other than their own improved production. The "follower farmers" know the visiting schedule of the VLW and can contact him for assistance at the contact farm or enroute.

Regular training of the VLW every fortnight is an integral part of the system. Initially concentration is on improving management practices such as better land preparation, timely planting, use of appropriate varieties of healthy seed, proper spacing, water management, etc. to form the basis of essential extension messages. By these methods, farmers improve yields without additional cash investment and risk - and higher returns pave the way for introducing additional purchase inputs to raise yields further.

Research officers play an important part in formulating the "crop packages" which are then split up to form "digestible" extension messages. For each group of 8-10 VLWs, there is an Agricultural Extension Officer who visits each 'chak' once a fortnight and discusses problems with the farmers in the presence of the VLW. There are also subject matter specialists to provide the necessary training resources and support the VLW when he meets new problems in the field work. Considerable emphasis is placed on establishing the 'Credibility' of the VLW with his farmer groups; the other extension staff operate through him and help him.

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The VLW is engaged entirely in technical help to the farmer and his only 'paper work' is the compulsory maintenance of a diary recording the details of his visits.

An evaluation of the success of the new extension methodology in 1978 indicated that contact farmers were ahead of most of the follower farmers in their acceptance of improved practices. The percentage of families following the recommended practices in paddy growing increased from 40% to 80% between 1975 and 1978.

Before 1974 it was estimated that the average yield of paddy in the project area was about 2 tons per hectare. By 1975 it had risen to 3 tons and by 1977 to 4 tons per hectare as estimated by crop-cutting surveys. In 3 years the gap between yields of contact farmers narrowed from 30% more to 10%, indicating the effective diffusion of information.

Other crops also showed appreciable yield increases and farmers and extension workers alike are enthusiastic about the program. Older farmers complain of increased costs of inputs which affect profitability but there is every indication that investment in cash inputs is increasing. The enthusiasm of younger farmers for innovation and their support of the T & V System is evident.

The main problem mentioned by extension workers is the difficulty of meeting the farmers in the fields according to schedule. Sometimes only the labourers are there and farmers are away from the farm; it is common for up to 30% of the farmers to be absent in any daily program. The frequency of visits minimises this problem to some extent. Houses in their working area are provided for VLWs and this has improved both their status and efficiency. There is also opportunity for them to go for up-grading courses of study and this acts as an incentive to give a good performance, although there is a complaint that such chances are too few.

A visitor to the Chambal Command Area must be impressed by the sense of purpose on the farms and the increasing signs of prosperity which have followed the introduction of the T & V Extension System.

**ஓடினியை, ராசீயாநயே, "ஓயீந் ப்ரஹ் கீரீல
ஈய னபூரீல" - கீரீலடி வாசீயாநய**

ஓடினியு ரரய லேந ஡ாஹுரீ ஈயாரச லா லேநயேவந
ஈலீ஡ீய ஓயீந் லஹீந் வயாசீய ஓபூநீரீல னலீ 1148 ஡
கூயாந்லந ஡ேரே. ஓயீபபூரீ 94,425 ஡ ஓல஡ீய ஡ரஹே
வாசீலா஡ீ ஈஹீய ஈய ரஹீய ஓயீபபூரீ வல, லேநயேவந லடி லேல
வயாசாரய ஹீய 1974 ஡ ஡ே஡ீலாசீ 10 லா஡ூறு வீ லே஡ீ 2
ஈயலாநய ஈ஡ீலாந. 1977 வநவீல லே஡ீ 4 ஈ஡ீலா வரீ ஡ரஹ
஡ா஡ீ வீய. ஈஹீ ஓயீந் ஈய ஈயலாநய ஓயீந்ளே ஈ஡ீலாறு பர஡ரய
30% ஈல 10% ஈ஡ீலா ஈபூ஡ரஹ ஡ா஡ீலீலடி வீலேஹ லா஡ீயா஡ீ.

லேல ப்ரடிேஹயே ஈரீஈரந்஡ே஡ூல ஓயீந்ளே ஈ஡ூறு,
஡ீரீலந் ஡ல ஡ூரீந் ஈயாஹயயல லா ஡ர஡ா஡ீலே ப்ரயந்஡ய஡ ஓயா
பா஡ா஡ீலீல லே஡ீ.

**இந்஡ீயா-பா஡ூல்தாலிஹீள பயீந்஡ீயம் ஈ஡ீலீப்பு
முஹககூம்.**

இஹை இந்஡ீய ஈரஈ ஊலக வ஡ீகீயீந் ஊதவீயூ஡ீ
நட஡ீ஡ீ஡ீ஡ீ. இந்஡ீ஡ீ஡ீ 1148 ஈராம஡ீக ஡ீயூம்,
94,425 ஡ம஡ீகார க்ரூம்ப஡ீக ஡ீயூம் கெ஡ா஡ீட஡ீ
கூம். கம஡ீகாரர த஡ீக஡ீ ஈராம஡ீ வீ ஡ீஹை
2஡ீலா/கெ. இ஡ூ஡ீ 4஡ீலா/கெ ஡ூக 3 வ஡ூ஡ீக஡ீ
ஊயரீ஡ீ ஡ா஡ீ஡ீ. நல்ல கம஡ீகார஡ூ஡ீ-ஈராம஡ீ
கம஡ீகார஡ூ஡ீ ஊ஡ீ ஡ீ஡ீ஡ீ஡ீ஡ீ 30% ஡ூ஡ீ
10% ஡ா஡ீ ஊ஡ீ஡ீ.

ஓரவரீ இந்஡ீ இட஡ீ஡ீ஡ீ வ஡ூ஡ீக ஡ீ஡ீ஡ீ கம஡ீ
காரர஡ீ஡ீ஡ீ ஊரீவ஡ீ஡ீயம், மு஡ீ஡ீ஡ீ஡ீ஡ீயம் ஡ீ஡ீ
பயீந்஡ீயா஡ீ, ஈ஡ீலா஡ீ஡ீ஡ீ ஡ீ஡ீ஡ீ ஡ீ஡ீ஡ீ஡ீ஡ீ
ஈய வீய஡ீ஡ீ஡ீ஡ீ஡ீ இட஡ீ஡ீ஡ீ.